The Challenges of Fulfilling SDG 6 for Cleaner Water and Sanitation, from a Multi-Stakeholder Perspective: A Case Study of Water Sustainability in the Jordanian -Mining Industry

By: Ola Talal Nayef Al Haddid

A thesis submitted in partial fulfilment of the requirements for the degree of
Doctor of Philosophy

The University of Sheffield
Faculty of Social Sciences
School of Management

June 2021

Acknowledgement

I would like to express my sincerest gratitude to my primary supervisor, Dr Sonal Choudhary. For their patient supervision, I would like to express my sincerest appreciation to Dr Sanjay V Lanka and Dr Martina McGuinness: without their constant unwavering support and gentle guidance, this thesis could not have been completed.

Furthermore, I would like to express my sincerest gratitude to Princess Sumaya University for Technology (PSUT) for its generous support and funding. I am deeply grateful to PSUT for its studentship, which permitted me to embark upon this journey. Moreover, I would like to express my sincerest appreciation for the feedback and guidance provided during events such as the CSEAR conference.

I would like to extend my gratitude to local authorities and local communities in Jordan, who shared their memories and stories. Additionally, I would like to express gratitude to the industrial practitioners, governmental officials, and non-governmental professionals who shared their knowledge, expertise, and insights, as well as their time.

Finally, I would like to express my gratitude to my loving family and friends for their continued support, constructive criticism, and productive discussion. I would like to express deep gratitude to my parents and my friend Sara Ballero for constantly and unconditionally encouraging, supporting, and loving me.

Abstract

This study investigated the challenges of accessing clean and sanitary water that could hinder the fulfilment of sustainable development goal (SDG) 6 in Jordan. The focus of the study is the mining industry.

With regard to the mining industry, the study explored the discourse surrounding the adoption of sustainable water-related practices through the Gramsci (1971) notion of cultural hegemony and the Mitchell et al. (1997) stakeholder framework. Jointly, their work comprises a theoretical framework, which is posited here to enable the integration of multiple voices at the micro, meso, and macro levels.

For the methodology, the study used a case study design, with an in-depth analysis of two major extractive organisations representing the mineral-mining industry in Jordan. The study also adopted multiple qualitative methods that enriched understanding of the multi-fractured and complex nature of water cleanliness and sanitation. Twenty semi-structured interviews, four focus groups, and three observation records were employed to gather relevant data. In this way, the study embraced methodological triangulation to reveal various understandings, perspectives, and dimensions of sustainability.

Critical discourse analysis (CDA) was employed to analyse the data. CDA focuses on the influence of texts and discursive practices on social practices (Fairclough, 1989). This study highlights how knowledge is mediated through language that not only reflects stakeholders' ideologies, perceptions, and opinions, but can also be constructed to conceal economic interests at the expense of the adoption of more water-sustainable practices. Most importantly, not only might other stakeholders' voices be silenced, but dominant discourses might justify the adoption of unsustainable practices, which poses the question of whether SDG 6 could ever be achieved under the current conditions.

This study attempted to show how the national government and extractive organisations might be constructing a culturally intuitive, appealing, and persuasive discourse to advance their social and material interests. This could hinder the fulfilment of SDG 6.4 on water use and scarcity, as well as SDG 6.5 on water-resource management.

Unpacking the discourse concerning other stakeholders, this study unravels parties might be ideologically consenting to the hegemonic discourse established by the dominant stakeholders – namely, the national government and the extractive industries. These stakeholders legitimise water-related operations and practices that might be unsustainable in the long-term, but which

produce desirable and problematic outcomes in Jordan. In this way, they might hinder the fulfilment of SDG 6.3 on water quality and wastewater, as well as SDG 6.6 on the ecosystem.

This study found that, of the various SDG 6 targets, SDG 6.6 on the ecosystem (which incorporates SDG 6.a.1 on international cooperation and SDG 6.b.1 on stakeholder participation) is essential for achieving the other SDGs. At the national level, the study found that international cooperation between the national government, international organisations, and non-governmental organisations (NGOs), and the private sector may be necessary to achieve better practices concerning water use and scarcity (SDG 6.4), water quality and wastewater (SDG 6.3), and water-resource management (SDG 6.5). Furthermore, these efforts need to be supported by increased stakeholder participation, which might bring to light sustainable water-related practices useful for achieving the SDG 6 targets at the industrial and local levels.

Table of Content

List of Tables

List of Figures

List of Abbreviation

GRI	Global Reporting Initiative
MoE	Ministry of Environment
MWI	Ministry of Water and Irrigation
MEMR	Ministry of Energy and Mineral Resources
MoPIC	Ministry of Planning and International Cooperation
MDGs	Millennium Development Goals
SLO	Social Licence to Operate
SA	Sustainability Assessment
SD	Sustainable Development
SDGs	Sustainable Development Goals
SDG 6	Sustainable Development Goal 6 Cleaner Water and Sanitation
UN	United Nations
WCED	World Commission on Environment and Development

Chapter One: Introduction

Introduction

This chapter outlines the background and rationale behind this study and the concomitant research aims, objectives, and questions. It concludes by highlighting the potential contribution to knowledge that the study offers.

1.1 Research Background

1.1.1 Sustainable Development: Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs)

During the 1980s, the global community began to acknowledge that the world is walking an unsustainable path (Bebbington and Unerman, 2018; de Jong and Vijge, 2021; Gusmão Caiado et al., 2018; Harlin and Kjellén, 2015; Salvia et al., 2019; Siew, 2015). To change this unsustainable direction, the United Nations (UN) presented a sustainable development agenda through the World Commission on Environment and Development (WCED), widely known as the Brundtland Commission.

The Brundtland Commission (1987) was the first attempt to provide a common language and framework for discussion of socio-economic and environmental challenges and issues. The Brundtland Commission (1987) introduced the Brundtland report (also known as 'Our Common Future').

At the global level, the Brundtland report (1987) provides a common language and framework that unites the expectations of the Global South and Global North for sustainable development (SD), as well as covering a broad range of socio-economic and environmental issues. It focuses on global poverty and the growing disparities between high-income and developed countries and low-income and developing countries.

The Brundtland report (1987) proposed the first acknowledged international definition of SD as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. It conceptualises sustainability as a driving force towards a common future, as well as the mutual realisation of social equity, economic growth, and environmental conservation, thus popularising the term (Brundtland, 1987).

The definition and conceptualisation of SD proposed by the Brundtland report (1987) contains two key concepts: *need* and *limitation*. The first concept concerns the needs of the world's deprived, whilst limitations are generated by organisations' exploitation of natural resources to meet present and future needs (Sauer and Seuring, 2017; Tost et al., 2018). Thereby, the report provides a definition and conceptualisation of SD that incorporates these two key concepts that depict the prevailing circumstances – that is, the reliance on limited natural resources to meet present and future requirements.

Various criticisms have been made of the Brundtland report (1987). Its definition has been accused of being broad and vague (Ross, 2009), while the report has been described as 'un-operationalisable' (Siew, 2015). Additionally, it has been claimed that its definition and conceptualisation of SD lacks measurable and operational goals, targets, and indicators (Ross, 2009; Siew, 2015).

Furthermore, the Brundtland report (1987) only briefly mentions the role of business organisations in relation to SD issues (Blindheim and Langhelle, 2010). During the Rio World Earth Summit (1992), the UN highlighted the role of business organisations in addressing SD issues, especially in the UN Agenda 21 'Action Plan' publication (Blindheim and Langhelle, 2010; Langhelle et al., 2008). Agenda 21 states that business organisations and industries play a crucial role in the socio-economic and environmental development of home and host countries, and it calls for their full participation in the evaluation and implementation of SD activities.

Subsequently, the Brundtland Commission (1987) and Agenda 21 (1992) came to serve as the basis for the MDGs, or the 'Millennium Declaration', which set eight global goals, encompassing four targets and 10 indicators for the achievement of SD by 2015 (Saner, Yiu, and Kingombe, 2019). The MDGs focus on the global 'eradication of extreme poverty and hunger'. However, they cover only a narrow range of sustainability issues, such as poverty and hunger, education, gender equality, infant mortality, maternal health, disease, environmental sustainability, and global partnerships.

According to de Jong and Vijge (2021), the MDGs overlook subsets within the system of sustainability, as well as the interactions between the subsystems. For instance, water resources and biodiversity both concern land and water. That is, the interlinkages and synergies between the subsets within the system of sustainability are overlooked (Lozano, 2013). Furthermore,

the MDGs do not incorporate the accounts of vulnerable and marginalised groups (de Jong and Vijge, 2021), such as geographically distant local communities (Belal et al., 2013).

Although the MDGs aim to stimulate universal aspiration, they focus on addressing development issues and challenges through a donor-centric view of developing countries (de Jong and Vijge, 2021). According to de Jong and Vijge (2021), this reinforces the passive role of the developing countries and the aid agenda, rather than promoting an active role and partnership agenda**,** as seen in the Agenda 2030 SDGs.

In 2015, after the MDGs, the UN launched its the sustainable development goals (SDGs), or 'Agenda 2030', which set 17 global goals, encompassing 169 targets and 200 indicators, to achieve SD by 2030. The SDGs cover a broad range of sustainability issues and aim to guide organisations, industries, and countries (United Nations, 2016).

The Agenda 2030 SDGs were formulated through multilateral, multifaceted stakeholder consultations with various social groups, organisations, industries, and countries (Bebbington and Unerman, 2018; Gusmão Caiado et al., 2018; Salvia et al., 2019). As a result, Agenda 2030 includes participants from vulnerable and marginalised groups, who are thus agents of SD, rather than passive recipients of natural resources (de Jong and Vijge, 2021).

Agenda 2030 represents **a multilateral, multifaceted stakeholder approach, bringing together multiple stakeholders** to advance and sustain progress towards SD. It represents a **more inclusive approach** to SD, as evidenced by its 40 references to 'inclusivity' (Arts, 2017). Agenda 2030's 17 SDGs thus make a transformative and 'inclusive' promise of 'leaving no one behind'.

For this reason, the SDGs represent a common language and a shared purpose (Bebbington and Unerman, 2018; Gusmão Caiado et al., 2018; Salvia et al., 2019). According to Ike et al. (2019), organisation managers play a key role in realising and progressing towards Agenda 2030's 17 SDGs. Tashman and Raelin (2013) explain that managers are the central decision-makers and thus the nexus of contracts between an organisation's shareholders and stakeholders (Jahn and Brühl, 2018). That is, managers are not merely agents of shareholders and thus responsible for maximising profit and wealth; rather, they are also agents of stakeholders and thus responsible for their interests.

However, managers face challenges with operationalising and, therefore, with achieving the SDGs (Ike et al., 2019). Organisations interact with a multiplicity of stakeholders within their stakeholder networks (Post et al., 2002), and they face challenges in satisfying conflicting

issues (Mutti et al., 2012). Furthermore, stakeholder values differ at the individual, institutional, and societal levels. Moreover, value creation is interconnected: if managerial actions create value for certain stakeholders, they also then affect other stakeholder values (Harrison and Wicks, 2013). As a result, organisations risk satisfying one stakeholder only at the expense of another.

Gusmão Caiado et al. (2018) suggests that, to avoid this trade-off, organisations could embrace stakeholder engagement for operationalising the SDGs. When engaging with stakeholders, organisations might surface sustainable operations and practices that address both present and future needs. Thereby, organisations would create shared value and avoid the need for trade-offs between stakeholders' interests. If not, organisations endanger their own long-term profit and survival. In this way, organisations incorporate stakeholders' expectations into the operationalisation of the Agenda 2030 SDGs. Furthermore, the progress towards achieving the SDGs becomes the purpose of the organisation's operation and practices.

Furthermore, Agenda 2030's 17 SDGs propose an accountable approach to meeting challenging economic targets, whilst contributing to environmental conservation and social development (Bebbington and Unerman, 2018; van der Waal and Thijssens, 2020). An accountability approach comprises two constructs: *sustainable performance* and *sustainable reporting*. That is, accountability requires organisations to demonstrate sustainable operations and practices and then report, explain, and justify their actions to their stakeholders (Adams and McNicholas, 2007; Yusof et al., 2015; Gray, 2010, 2002; Gray et al., 1996; Kemp et al., 2012; Unerman et al., 2007).

Agenda 2030's 17 SDGs also propose a sustainability assessment (SA) that assesses, evaluates, and reports on progress towards – or shifts away from – SD (van der Waal and Thijssens, 2020). Therefore, organisations use SAs to assess and evaluate their accountability in terms of their socio-economic and environmental performance (Azapagic, 2004; Fonseca et al., 2014; Worrall et al., 2009). The Global Reporting Initiative (GRI) and SDG Compass are two examples. Organisations communicate their accountability to demonstrate their commitment to and engagement with socio-economic and environmental issues (Bini et al., 2018).

According to Boiral et al. (2019), Agenda 2030's 17 SDGs could become a discursive instrument that organisations use to demonstrate their accountability to stakeholders, with the goal of 'legitimising' their operations and practices. In this way, organisations can ensure their long-term profit and survival. They might use their accounts to construct or re-construct

stakeholders' perceptions, thereby attaining recognition as responsible and accountable without making any real, sustainable, transformative change (Bini, Bellucci, and Giunta, 2018; Nwagbara and Belal, 2019), especially if the expectations of less powerful stakeholders contradict those of the organisation or its more powerful stakeholders.

In this way, organisations might seek to avoid or mitigate legitimacy threats (Belal and Cooper, 2011). This might enable them to sustain a myriad of operations and practices and, thereby, a business-as-usual attitude in wider society. For this reason, Dyllick and Muff (2016, p.1) emphasise the need to differentiate between efficient and inefficient organisational contributions to stakeholders, proposing the creation of 'mutual shared' value (Bini et al., 2018; Vintró et al., 2014). Without this, organisations will continue with business-as-usual, which might be detrimental to the social wellbeing, environmental health, and economic prosperity of less powerful stakeholders in the present and future.

Most studies have explored and investigated the SDGs collectively (Bebbington and Unerman, 2018; Gusmão Caiado et al., 2018; Ike et al. 2019; Monteiro et al., 2019; Rosati and Faria, 2019; Salvia et al., 2019; van der Waal and Thijssens, 2020). However, some studies have investigated in-depth communication and engagement with 'individual' SDGs (Bebbington and Unerman, 2018, 2020; Monteiro et al., 2019), such as SDG 2 for zero hunger (Herrmann and Rundshagen, 2020), SDG 6 for clean water and sanitation (Hussein, Menga, and Greco, 2018), SDG 8 for decent work and economic growth (Christ, Rao, and Burritt, 2019), SDG 13 for climate action (Charnock and Hoskin, 2020), SDG 14 for life below water (Mao et al., 2019), and SDG 15 for life on land (Sobkowiak, Cuckston, and Thomson, 2020). Additionally, few studies have investigated in-depth communication and engagement with SDG 6 for clean water and sanitation (Bebbington and Unerman, 2018, 2020; Mancini and Sala, 2018; Monteiro et al., 2019).

Concerning SDG 6, previous literature reviews (LR) have found that limited studies have: first, investigated SDG 6: targets and indicators, collectively, thereby their interlinkages at an industrial and national level (Bebbington and Unerman, 2018). Second, investigated the impact of extractive organisations on SDG 6: Cleaner Water and Sanitation, particularly, in water-stressed countries (Mancini and Sala, 2018). Third, investigated SDG 6: Cleaner Water and Sanitation, specifically from a multi-stakeholder perspective in the mining industry (Monteiro et al., 2019). The following section explains the severity of the global water-related challenges, thus highlighting the significance of progress towards SDG 6 for cleaner water and sanitation.

1.1.2 Global Issue: Cleaner Water and Sanitation

The World Economic Forum (2020) 'Global Risks report' recently ranked water crises fifth in terms of detrimental impact on global economic markets, social wellbeing, and natural environment. Water, the source of life, is a finite and irreplaceable resource, and it is fundamental for sustaining individual, societal, and industrial wellbeing. Therefore, water, as a limited natural resource, functions as a prevailing socio-economic and environmental constraint (Mudd, 2010). However, according to Mekonnen and Hoekstra (2016), 4 billion people around the world suffer from severe water stress for at least one month per year, as well as 1.8 billion for at least six months per year.

Despite recent progress, access to clean and sanitary water remains unequal, according to available data and information, including inequality both among and within countries (Ezbakhe, Giné-Garriga, and Pérez-Foguet, 2019). There is inequality not only between rural and urban areas, and between the dominant elite and the poor subordinate classes, but also between vulnerable marginalised groups and the general population (Ezbakhe, Giné-Garriga, and Pérez-Foguet, 2019).

Whilst this inequitable access to clean and sanitary water is manifest within countries, the pattern of marginalisation is consistent around the world. Water issues and challenges severely impact the most vulnerable and marginalised groups (Mehta, 2016). However, the issues and challenges driving these inequalities might be largely caused and legitimised by the invisible power asymmetry (Mehta, 2016). Hence, this inequality became a central concern of Agenda 2030, which dedicated an SDG to 'ensuring access to water and sanitation for all'.

Water is at the core of SD. Therefore, in Agenda 2030, the UN affirms the significance of clean water and sanitation by including a dedicated goal that addresses the cleanliness and sanitation of water resources, namely, 'SDG 6: Clean water and sanitation' (de Jong and Vijge, 2021). Within SDG 6, the UN defines eight targets and 11 indicators, which collectively assess and evaluate progress towards – or moves away from – SDG 6.

Clean water and sanitation is an SDG within a suite of 17 integrated and interlinked goals that cover the entire water cycle, as well as multiple global water issues. These challenges concern drinking water, sanitation and hygiene, wastewater, water quality, water-use efficiency, water stress, water management, transboundary cooperation, and ecosystems (international cooperation and stakeholder participation).

Furthermore, SDG 6 tackles inequality. For example, the aim of SDG 6.2 is to have ensured, by 2030, access to adequate and equitable sanitation and hygiene for all and an end to open defecation, paying special attention to the needs of women and girls and those in vulnerable situations. A failure to tackle water inequality means a failure to end poverty (Giné-Garriga, 2018). Clean water and sanitation for vulnerable and marginalised groups is critical for achieving not only SDG 6, but also poverty-related SDGs such as SDG 1 on ending poverty (Essex, Koop, and van Leeuwen, 2020).

According to UN Water (2021), water has strong links to other SDGs, thus the achievement of this goal depends on the success of one or many others. That is, the SDGs in Agenda 2030 are interlinked. For instance, increasing wastewater treatment (SDG 6.3) would reduce the risk of water-borne diseases (SDG 3.1–3.3, 3.9), which would promote education (SDG 4.1–4.5) and a productive workforce (SDG 8.5, 8.8), thereby reducing poverty (SDG 1.1, 1.2). Therefore, achieving SDG 6 is essential for, first, ensuring clean water and sanitation for all; second, achieving progress towards other SDGs, thereby fulfilling the aims of Agenda 2030; and third, 'leaving no one behind', especially vulnerable and marginalised groups.

Water sustainability is a critical issue in water-intensive industries such as the mining industry (Burritt and Christ, 2018; Gunson et al., 2012; Kemp et al., 2010; Northey et al., 2016). However, few studies have focused solely on the environmental performance of the mining industry in relation to water-sustainability issues (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). Consequently, the following section considers the potential of extractive organisations to positively contribute to water sustainability, with reference to SDG 6.

1.1.3 Extractive and Mining Industries: Water Sustainability

Water sustainability is a critical issue in water-intensive industries such as the mining industry (Burritt and Christ, 2018; Gunson et al., 2012; Kemp et al., 2010; Northey et al., 2016). In the mining industry, organisations require water resources for the extraction of natural resources. However, these operations and practices cause substantial issues[1] in relation to consumption, contamination, and loss of water (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). This can lead to socio-economic and environmental tension, particularly in water-stressed countries

[1]As water is essential for sustaining organisations' operation and practices, water issues could act as 'economic incentive' for extractive organisations to adopt sustainable water-related practices, thereby extending the availability of the necessary resources.

(de Mesquita et al., 2017). Therefore, the literature has tended to emphasise the impact on stakeholders (Horowitz, 2006; Laurence, 2011; Rajaram et al., 2005; Whitmore, 2006).

In the mining industry, extractive organisations and their stakeholders might abide by a social contract that reflects stakeholders' implicit and explicit expectations (Scott, 1995; Deegan, Rankin and Tobin, 2002; Jahn and Brühl, 2018). When abiding by this social contract, the organisations obtain a social licence to operate (SLO) and access to limited natural resources. However, the organisations are expected to satisfy a multiplicity of stakeholder expectations, which might constitute a trade-off within the stakeholder network (Pereira Eugénio et al., 2013). Hence, organisations might focus on satisfying the expectations of 'powerful' stakeholders that jeopardise the legitimacy of their own operations and practices and long-term profit maximisation, as well as threatening their survival. Meanwhile, less powerful stakeholders – who are geographically distant – might be marginalised and left struggling to raise their voices, interests, and issues. Consequently, organisations face the threat of legitimacy gaps (Pereira Eugénio, Costa Lourenço, and Morais, 2013).

Nevertheless, extractive organisations have the potential to positively contribute to water sustainability (Edmans, 2020). Several studies have explored extractive organisations' (un)sustainable water-related practices and their detrimental impact on social wellbeing, environmental health, and the economic future of humanity (Gunson et al., 2012, 2010; Kemp et al., 2010; Liphadzi and Vermaak, 2015). However, such studies have focused on mitigating extractive organisations' negative impact, rather than their potential to positively contribute to water sustainability (Gunson et al., 2012; Laurence, 2011; Tarawneh, 2016; Tost et al., 2018).

By engaging with stakeholders, extractive organisations might surface sustainable water-related practices that create shared value and avoid the need for trade-offs between stakeholders' interests (Rajaram et al. 2005; Laurence, 2011). That is, extractive organisations' engagement with their stakeholders might inform their water-related practices and operations, promoting accountability towards stakeholders (Gunson et al., 2012; Northey et al., 2016).

These water-related practices and operations might enhance organisations' positive impact by mitigating the negative, thereby benefiting both the organisations and their stakeholders and possibly delivering a positive mining legacy (Tarawneh, 2016). In this way, organisations can demonstrate their accountability to their stakeholders and secure their SLO, as well as access to the limited natural resources needed for their operations (Provasnek, Sentic, and Schmid, 2017).

These issues have increasing significance in Jordan, which is globally ranked as the fifth largest phosphate extractor (8 million MT) and sixth largest potash extractor (1.5 million MT; Pistilli, 2020). Whilst making a significant economic contribution, extractive organisations are simultaneously drawing on the limited water resources of the fifth most water-stressed country in the world (al Rawashdeh et al., 2016; Hussein, 2018; USAID, 2018). Hence, this study examines the potential conflict between socio-economic and environmental development, as well as the challenges in balancing present and future needs (Brundtland et al., 1987).

1.1.4 The Jordanian Context

In Jordan, water reflects a complex and multifaceted reality. To illuminate the depth of the water-scarcity issue, this section presents the hydrological features that explain the inadequacy of the water resources for meeting domestic, agricultural, and industrial demand in Jordan. It then describes the socio-economic and political factors that might be amplifying water scarcity in Jordan, as well as discussing the institutional configuration and power disparities in Jordan. Finally, this section details the Jordanian national government's commitment to and engagement with the Agenda 2030 SDGs.

a. Hydrological Features and Facts

Jordan's water-related challenges have positioned it as the fifth most water-stressed country in the world (USAID, 2018). Jordan suffers from 'severe' water scarcity and lacks 'clean and sanitary water for all' (USAID, 2018). Domestic water demand is amongst the lowest in the world, with the limited resources barely sufficient to meet basic household demand for sanitation and cleaning (USAID, 2018).

The highest levels of rainfall are found in highly populated areas – namely, in the middle and to the north of the country. The northern region has the highest concentration of rainfall, reaching up to 700mm per year *(*MWI, 2017). In the central region, rainfall concentration reaches approximately 300mm per year (MWI, 2017), whilst towards the south, rainfall decreases considerably to less than 100 mm per year (MWI, 2017).

According to the Ministry of Water and Irrigation (MWI), the per capita share of water is less than 100 m^3 in Jordan, which is less than the global water poverty line of 1000 m^3 (MWI, 2019). Annual water demand for all uses is 1.2 billion m^3. However, the annual deficit accounts for approximately 0.5 billion m^3 (MWI, 2019).

Moreover, rainfall precipitation feeds water resources such as the 14 water-harvest dams in Jordan (MWI, 2019). In 2019-2020, the water-harvest dams collected 225 million m^3 of water, with the corresponding figure for 2020-2021 falling to 142 million m^3 (MWI, 2019). However, according to the MWI, these resources could become non-revenue water (NRW), with 60% accounted for by physical losses due to 'offences' and 'attacks' on water resources and the remaining 40% due to leakages resulting from technical maintenance issues (MWI, 2019). Therefore, existing water resources might become inadequate to meet domestic, agricultural, and industrial demand in Jordan.

Furthermore, and most importantly, water resources in Jordan are unequally distributed between domestic use (44.1%), agricultural irrigation (51.9%), and industrial operations (4%; MWI, 2016). This factor might be amplifying the problem of water scarcity.

b. Socio-Economic and Political Configuration

Jordan, situated at the centre of the most volatile region in the world, suffers from water scarcity (USAID, 2018). Furthermore, socio-economic and political factors have the potential to turn these water issues into national crisis and regional conflict, which would affect transboundary water agreements, as well as population size and growth (Hussein, 2018).

Due to regional conflict, Jordan suffers from economic instability, as highlighted in the Economic Freedom Index, where the country scores 64.6, giving its economy a ranking of 69th in the world, below both the global and regional averages. Additionally, Jordan's score and ranking reflect a decline of 1.4 points compared to the previous year's figures, which has affected fiscal health and freedom, property freedom and rights, government integrity and spending, as well as judicial efficiency and integrity (The Heritage Foundation, 2021).

Jordan also suffers from inequality in the sharing of its water, due to transboundary agreements, political conflict, and tension over shared surface and underground water resources, especially with neighbouring countries (Hussein, 2019). Moreover, it has seen a massive influx of refugees and immigrants from neighbouring countries due to the Palestinian (1948), Iraqi (2003), and Syrian (2011) conflicts, which has caused shocks and strained its already limited water resources (Hussein, 2020).

According to the MWI, there were approximately 3.1 million Syrians in Jordan in 2017, of whom 10.4% were in camps and 89.6% housed in the host communities (MWI, 2017). This brought the total population to 9.8 million (MWI, 2017). As a result, the MWI states, water

demand is now exceeding available supply, with exacerbation regarding both surface and underground water (Hussein, 2020).

c. Institutional Configuration

Jordan is a constitutional monarchy ruled by a king, currently the Monarch of the Royal Hashemite Kingdom of Jordan. The king exercises power based on cultural, political, and religious legitimacy (Schlumberger and Bank, 2002) and he has the power to guide both the parliament and national government (Schlumberger and Bank, 2002). Hence, the king exercises both executive and legislative power, which shapes, sanctions, blocks, and resists policies and regulations in Jordan.

Furthermore, Jordan, is well known for its diverse social structure, within which there are challenges to power and dominance from farmers, townsmen, and women, as well as *bedu*. In Jordan, power resides with the king and those close to the Crown, who form the socio-economic and political elite (Hussein, 2016). Consequently, the monarchical system creates a 'cluster' of elites who reciprocate and advance their mutual social and material interests (Hussein, 2018; Shamayleh, 2019).

In Jordan, mineral mining is a major industry that consists of organisations extracting phosphate and potash. The mineral-mining industry comprises two organisations that extract earthbound minerals from the southern region of the kingdom, namely the 'Arab Potash Company' and the 'Jordan Phosphate Mines' (al Rawashdeh et al., 2016). The mineral-mining industry contributes 3.3% to the gross domestic product (GDP), which – when combined with related manufactured fertiliser products – reaches 9% of GDP (Central Bank of Jordan, 2018). Additionally, the mineral-mining industry employs more than 8,764 people from the local communities surrounding the mining sites (Department of Statistic, 2017). Nevertheless, despite their significant economic contributions, extractive organisations are simultaneously drawing on the limited water resources of one of the world's most water-stressed countries (al Rawashdeh et al., 2016; Hussein, 2018).

At the national level, the government includes a multiple ministry authority that protects and complies with the national constitution of the Royal Hashemite Kingdom of Jordan. The government ministries govern compliance with national laws, regulations, and standards – including those concerning water governance and the extractive and mining codes (Jordanian National Government, 2020). Thus, multiple government ministries are involved in addressing

the water-scarcity issue. These include the MWI, the Ministry of the Environment (MoE), the Ministry of Planning and International Cooperation (MoPIC), and the Ministry of Energy and Mineral Resources (MEMR).

In Jordan, international organisations are actors involved in managing and shaping the water sector. International organisations provide the national government with technical support and funding, which shape the country's national policies and strategies (Ministry of Planning & International Cooperation, 2017). However, due to the prolonged water budget deficit, the national government depends on international aid to sustain its water sector (Shamayleh, 2019). In short, the national government lacks the ability and capacity to fund water infrastructure, supply, and demand projects on its own (Shamayleh, 2019).

During the period of 2002 to 2011, international organisations' expenditure in the water sector amounted to 708 million USD (USAID, 2018). This means that the national government may be the primary beneficiary of international aid, receiving 65% of the grants and 35% of the loans (USAID, 2018). As a result, international organisations hold and exercise power that enables them to influence national plans, strategies, and projects in Jordan.

Moreover, the international organisations communicate and collaborate with NGOs that provide guidance and support regarding local issues in Jordan (Ministry of Planning & International Cooperation, 2017). NGOs are actively involved in water-related environmental initiatives, projects, and agendas in Jordan. Thus, similar to the international organisations, NGOs hold and exercise power that enables them also to influence national plans, strategies, and projects in Jordan.

At the local level, the municipal authority is responsible for communicating and implementing the legislation and regulations that govern local communities. Therefore, the municipalities hold both executive and legislative authority, which is delegated by the national government (Jordanian national government, 2020). Furthermore, the municipal authority represents the local community and the interests of local-community members – such as farmers, townsmen, women, and Bedouin tribes. However, some municipal authorities and local communities might struggle to ensure their voices, interests, and issues are heard, especially when these parties are geographically distant from Amman, the capital (Belal et al., 2013).

In Jordan, both official actors (such as the king and the MWI) and unofficial actors (such as extractive organisations and farmers) influence the allocation, distribution, and management of water resources. With respect to Agenda 2030, international organisations are relevant actors

in managing and shaping the water sector. Additionally, by providing the national government with technical support and funding, they influence the shaping of national policies, strategies, and practices in Jordan.

d. Agenda 2030 Sustainable Development Goals (SDGs)

In 2015, the UN member states – including the Royal Hashemite Kingdom of Jordan – officially committed to meeting the Agenda 2030 SDGs. Jordan was one of the first countries in the Arab Region to respond to these challenges: first, actively participating in the post-2015 consultations, thereby contributing significantly to shaping the 2030 Agenda and its SDGs; second, by officially signing and committing to meeting Agenda 2030's 17 SDGs in 2015; and third, by integrating the global SD agenda into its national SD agenda, titled 'Jordan 2025: A National Vision and Strategy' (Ministry of Planning and International Cooperation, 2020).

Similarly, multiple ministries have integrated the global SD agenda into their own SD agendas, reflecting their context-specific circumstances – for example, their official authority and jurisdiction and their fields of influence (Salvia et al., 2019). The MWI has been responsible for the water sector's integration of SDG 6 into its SD agenda, 'Jordan 2025: National Water Strategy'. However, according to the SDG Index (2020), the achievement of SDG 6 in Jordan remains a significant challenge.

Globally, Jordan is ranked the fifth and sixth largest producer of phosphate and potash, respectively (U.S. Department of the Interior, 2019). However, as a result, the country's extractive organisations are drawing on the limited water resources of the world's fifth most water-stressed countries (al Rawashdeh et al., 2016; Hussein, 2018). Therefore, water provision in Jordan is under pressure (USAID, 2018). This study argues that this situation is creating a potential conflict between socio-economic and environmental development, as well as between present and future needs.

Whilst this issue of water scarcity has been widely researched, it has been viewed mainly from engineering, socio-economic, and political perspectives in Jordan (Masharqa, 2013; Hussein, 2018; Shamayleh, 2019). Little attention has been paid to the business corporations and organisations that use the limited water resources. Furthermore, while the water-scarcity issue has caught the attention of international researchers and publications, their focus remains on hegemonic and dominant discourses (Masharqa, 2013; Hussein, 2018; Shamayleh, 2019),

rather than marginalised discourses that highlight the social hegemonic struggles (Ezbakhe, Giné-Garriga, and Pérez-Foguet, 2019).

1.2 Research Questions

The preceding discussion has shed light on the importance of water sustainability, particularly regarding cleaner water and sanitation in Jordan. It has also highlighted the particular importance of water sustainability in relation to the mining industry. Accordingly, the aim of this investigation is to identify the challenges to accessing clean and sanitary water from the perspectives of the extractive organisations and their relevant stakeholders in Jordan. The objectives of the current research are represented in the following research questions:

1. *What might be the challenges for the national government and extractive organisations regarding access to clean and sanitary water in Jordan?*

Jordan's water-related challenges have positioned it amongst the top water-stressed countries in the world (USAID, 2018). The country is suffering severe water scarcity, with a lack of 'clean and sanitary water for all' (USAID, 2018). Whilst making significant economic contributions, extractive organisations are also drawing on the limited water resources of one of the world's most water-stressed countries (al Rawashdeh et al., 2016; Hussein, 2018).

2. *What might be the challenges for relevant stakeholders regarding access to clean and sanitary water in Jordan?*

Water sustainability is a critical issue in water-intensive industries such as the mining industry (Burritt and Christ, 2018; Gunson et al., 2012; Kemp et al., 2010; Northey et al., 2016). In the mining industry, organisations require water resources for the extraction of natural resources. However, the associated operations and practices cause substantial issues in relation to the consumption, contamination, and loss of water (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). This can lead to socio-economic and environmental tension, particularly in water-stressed countries.

Al Rawashdeh et al. (2016) investigated the impact of extraction operation and practices on local communities in Jordan by comparing socio-economic and environmental conditions in the southern region of the country. The study revealed that, although extractive organisations

contribute significantly to the national economy, their activities depleted the environmental conditions, specifically in relation to water (al Rawashdeh et al., 2016). As a result, extractive organisations may be threatening the local community's social wellbeing, environmental health, and economic prosperity in the present and future.

3. *Are the SDG 6 targets being achieved in Jordan? Why or why not?*

Although Jordan's national government has officially committed to meeting Agenda 2030's 17 SDGs, only 30 organisations have registered to communicate their progress, excluding the mineral-mining industry (United Nations Global Compact [UNGC], 2021). As a result, extractive organisations may be hindering the achievement of sustainable socio-economic and environmental development. The sustainability of the extractive operations and practices in the mining industry may also be challenged by the consumption, contamination, and loss of water (Alawneh et al., 2018). Hence, it could be argued that the mining industry's failure to adequately address these issues threatens national progress towards SDG 6.

1.3 Research Contributions

1.3.1 Contribution to Empirical Literature

To contribute to the literature, the study investigates water sustainability in the mining industry, specifically in relation to SDG 6 on cleaner water and sanitation. Several empirical studies have broadly investigated sustainable performance in the mining industry (Essah and Andrews, 2016; Prno and Scott Slocombe, 2012; Tost et al., 2018; Zhang et al., 2015), but few studies have focused solely on environmental performance in the mining industry, specifically targeting water-related practices (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016).

From this perspective, this study considers the impact of extractive organisations' activities on stakeholders, particularly in relation to the cleanliness and sanitation of their water resources. In so doing, the study engages with the externalities of extractive organisations' practices affecting the consumption, contamination, and loss of water.

Consequently, this study provides insights into extractive organisations' (un)sustainable water-related practices and their attempts to mitigate water-related environmental issues through stakeholder engagement. Examples of these mitigating measures include building water-

harvesting dams to reduce dependency on underground water, reusing wastewater for cooling equipment, and recycling wastewater for use in extractive and processing practices.

To date, all studies have investigated either developed or developing countries that possess extensive mineral wealth, such as India, China, and Australia, whilst neglecting smaller countries (Ayelazuno, 2014; Rodrigues and Mendes, 2018). Small emerging economies such as Jordan might be more dependent on extractive resources at the economic level, especially as a source of foreign currency. Therefore, this study explores the potential conflicts between socio-economic and environmental development and between present and future needs. To do this, the study explores extractive organisations' contributions to socio-economic development in Jordan's local communities. It is noted that extractive organisations might detrimentally impact water resources through consumption, contamination, and loss (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). If extractive organisations maintain their unsustainable water practices, this could jeopardise their SLO and their access to limited water resources. Consequently, small and emerging economies might implement higher barriers to the adoption of 'new' sustainable water-related practices.

Moreover, few studies have investigated an institutional context with a monarchical structure that – as in the Royal Hashemite Kingdom of Jordan – shapes, sanctions, blocks, and resists water policies and regulations (al Rawashdeh et al., 2016; Hussein, 2018). Therefore, this study provides a unique contribution by demonstrating how hegemonic power might be held and exercised by corporate organisations in a monarchical context such as Jordan.

Likewise, few scholars have investigated the impact on water provisions of extractive organisations, particularly those operating in water-stressed countries (Mancini and Sala, 2018; Rodrigues and Mendes, 2018; Tost et al., 2018). Therefore, this study endeavours to provide a deeper understanding of the challenges around the provision of cleaner water and sanitation from the perspective of multiple stakeholders, dealing with water scarcity, shortage, stress, and starvation, among other factors**.** In this task, the study brings to the surface the challenges around the provision of sustainable water, which should contribute to a better understanding of the challenges faced elsewhere in relation to SDG 6**.**

1.3.2 Contribution to Policy and Practice

Once the findings have been presented, consideration is given to the policy and practical implications. This study argues that discourse plays a central role in shaping national water policies, which might involve sanctioning or legitimising certain water-related practices in Jordan.

With regards to policy, studies have focused on the hegemonic discourse, which might be constructed and deployed by the elite - powerful stakeholders to sanction, as well as legitimise water-related practices and solutions, particularly addressing water insufficiency (supply issues) in Jordan (Hussein, 2018; Shamayleh, 2019). However, these studies might be overlooking vulnerable - less powerful and powerless stakeholders, which marginalised discourses might address water management (demand issues) in Jordan. Thereby, these vulnerable and marginalised groups 'remain' passive recipients of natural resources, rather than agents of policy-making (Rozema, Bond, Cashmore, and Chilvers, 2012).

Therefore, this study argues that bringing to the surface multi-stakeholder narratives and discourse reveal that water insufficiency might not be the sole cause of water scarcity. Water mismanagement may be another cause, especially that of the mineral-mining industry in Jordan. That is, this study reveals that water insufficiency and water mismanagement may be exacerbating water scarcity in Jordan. This finding could shift the focus of national water policies from water insufficiency (supply solutions) to water mismanagement (demand solutions), particularly the focus of the 'Water Demand Management Policy in the Jordan 2025: National Water Strategy'.

With regards to practice, the study argues that multi-stakeholder voices and perspectives on sustainable water-related practices could support national efforts to attain SDG 6 in Jordan. Few studies have investigated the role of extractive organisations in achieving SDGs in general – or SDG 6 in particular – from a specifically stakeholder perspective (Mancini and Sala, 2018). Thereby, they might have overlooked the nuances of the stakeholders' voices, which could surface a spectrum of sustainable operations and practices. By taking this approach, this study identifies the types of sustainable water-related practices that could mitigate the extractive organisations' externalities with regard to limited water resources. These include building water-harvesting dams to reduce dependency on underground water, reusing wastewater for cooling equipment, and recycling wastewater to be used for extractive and processing practices

in the mining industry. These approaches could be implemented to mitigate the challenges related to SDG 6 and better align with sustainability indicators such as SDGs 6.3, 6.4, 6.5, and 6.6. Furthermore, the findings of this study could support national efforts to attain SDG 6.

1.4 Structure of the Thesis

This thesis consists of nine chapters. Chapter One outlines the background and rationale behind the study. It then introduces the Jordanian context and explains the research aims, objectives, and study questions. The chapter concludes with a discussion of the contribution of the research.

Chapter Two introduces the relevant scholarly literature on SD, SDGs, stakeholder management, accountability, and SA. The chapter then discusses extractive organisations' impact on the SDGs, specifically SDG 6 in relation to cleaner water and sanitation in the mining industry.

Chapter Three introduces the two theoretical lenses used to construct an integrated and multifaceted theoretical framework for this study. These are the Gramsci (1971) notion of cultural hegemony and the Mitchell et al. (1997) stakeholder framework.

Chapter Four introduces the research paradigm, specifically the ontological, epistemological, and theoretical approaches underpinning the investigation. The chapter also describes the primary methods of data collection and analysis. The chapter explains the inductive approach based on explanatory and qualitative analysis, used here to identify the cognitive ideologies, perceptions, and opinions of extractive organisations and their stakeholders.

Chapter Five introduces the contextual details relating to water resources, such as the hydrological facts and the institutional framework in Jordan. The chapter then examines and analyses written documentation regarding the governmental and corporate narratives that account for the social construction of the hegemonic water-scarcity discourse in Jordan. The chapter examines and analyses registered non-participatory observation of the cooperation and struggle to socially construct meaning within discursive fields or domains, specifically among national government ministries, as well as international organisations and NGOs. The influence of organisations' extractive and mining operations on stakeholders' water provisions are then considered, alongside a discussion of water provision for stakeholders – specifically local-community members.

Chapter Six unpacks the hegemonic discourse concerning the national government and extractive organisations in Jordan. Discursive practices that might be advancing their social and material interests are highlighted. The chapter also discusses discursive practices that might provide insights into the fulfilment of SDG 6.

Chapter Seven explores the discourse of the stakeholders who influence water-related practices in the mining industry. In this way, the chapter brings to the surface the discursive practices that might reveal extractive organisations' impact on their stakeholders' water resources. The chapter provides insights into the extent to which SDG 6 is being achieved in Jordan.

Chapter Eight explains the challenges of accessing clean and sanitary water in Jordan. It discusses the roles of the national government and the extractive organisations and the deployment of a hegemonic discourse that could be furthering their social and material interests and thereby hindering the fulfilment of SDG 6.4 (on water use and scarcity), as well as SDG 6.5 (water-resource management). It then explains and discusses stakeholders' ideological consent to a culturally intuitive and persuasive discourse that counters their best interests, thereby legitimising water-related operation and practices, which might be both 'desirable and problematic'.

Chapter Nine reviews the overarching research question and sub-questions (detailed in Chapter One). It then reviews the empirical results and findings with regard to the adapted theoretical framework (see Chapter Three on the theoretical framework). Finally, the chapter highlights the limitations of this study and potential areas for future research.

Chapter Two: Literature Review

Introduction

This chapter draws together relevant empirical literature pertaining to SD, SDGs, stakeholder management, accountability, and SA. The chapter presents a discussion of extractive organisations' impact on SDGs (specifically SDG 6, in relation to cleaner water and sanitation in the mining industry).

2.1 Sustainable Development (SD) and Sustainable Development Goals (SDGs)

This section outlines the evolution of SD, beginning with the Brundtland Commission, which published the Brundtland report in 1987. It then discusses the World Earth Summit (1992) in Rio de Janeiro, which launched 'Agenda 21', the first action plan for SD. The Commission also called for the full participation of non-state actors, such as business organisations, in the efforts towards the realisation of SD. The Brundtland report (1987) and Agenda 21 (1992) went on to serve as the basis for the MDGs and the SDGs.

Conceived in the aftermath of major environmental catastrophes such as drought and famine in Africa (1970), the oil spill by Amoco Cadiz in France (1978), the Bhopal Gas tragedy in India (1984), the San Juanico disaster in Mexico (1984), the Chernobyl nuclear disaster in Ukraine (1986), and the Exxon Valdez Oil spill in the United States (1989), the Brundtland Commission (1987) was the first global attempt to establish coalition and cooperation among countries to tackle sustainability issues. The Brundtland Commission (1987) was also the first attempt to provide a common language and framework for discussion of socio-economic and environmental challenges.

In 1987, the international community, led in a joint effort by the UN, recognised the need to pursue SD. The UN presented the first SD agenda, through the Brundtland Commission, which published a report titled, 'Our Common Future' (1987), focused on patterns of unsustainable consumption and production of limited natural resources.

The Brundtland report (1987) defines sustainability as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. The report thereby proposes two key concepts that define SD: *needs* and *limitations*. The first

concept refers to the needs of the world's deprived, whilst limitations are restrictions on the exploitation of natural resources by organisations to meet present and future needs (Sauer and Seuring, 2017; Tost et al., 2018). The Brundtland report (1987) popularised the term 'SD' and had a tremendous influence on society's perceptions of socio-economic and environmental issues. Sustainability is here portrayed as the driving force towards a common future of social equity, economic growth, and environmental conservation.

At the global level, the Brundtland report (1987) provides a common framework with which to capture the expectations of SD, which include the interests of the Global South and Global North and a broad range of socio-economic and environmental issues. The Brundtland report focuses on global poverty and the growing disparity between high-income and developed countries and low-income and developing countries.

The Brundtland report (1987) fails, however, to provide an irrefutable case for the adoption of SD, a realistic assessment of SD, or an operational agenda for full implementation of SD (England, 1993). The report has been criticised for seeking widespread approval at the expense of sustainable transformative change (England, 1993). Furthermore, the report lacks a prescription outlining the role of business organisations in delivering SD (Carpenter and White, 2004). Instead, the definition and conceptualisation of SD given in the report merely depict the prevailing circumstances – that is, the need for limited natural resources to be retained to meet present and future requirements.

As stated in Chapter One, various criticisms have been made of the Brundtland report (1987). Its definitions have been accused of being broad and vague (Ross, 2009), whilst the report has been described as 'un-operationalisable' (Siew, 2015). With respect to the definitions in the report, Ross (2009) emphasises the consequences of this lack of clarity, arguing that the vagueness and imprecision give rise to various interpretations. According to Ross (2009), when various definitions and interpretations are combined with different values, interests, and issues, SD can become a discursive instrument, justifying and legitimising a myriad of operations and practices and a business-as-usual attitude in wider society.

Furthermore, the Brundtland report lacks consensus on how to operationalise SD. Kemp and Martens (2007) highlight four operational difficulties that might cause differences to arise in the adoption of sustainable practices. First, different sectors might have their own ideas,

perceptions, and understandings of SD, as noted by Ross (2009). Second, the authors highlight issues of negligence around sustainable operational practices, assessment, and measurements across society. Third, sustainability involves long-term, open-ended development; and finally, sustainability requires decision-making and trade-offs on highly contested issues. It is for these reasons that the definitions in the Brundtland report (1987) are difficult for organisations to operationalise (Broman and Robèrt, 2017; Gimenez, Sierra, and Rodon, 2012; Siew, 2015).

For this reason, SD has faced major challenges.[2] A common language and a shared purpose is required to achieve SD (Bebbington and Unerman, 2018; Gusmão Caiado et al., 2018; Salvia et al., 2019); to meet challenging economic targets whilst contributing to environmental conservation and social development (Bebbington and Unerman, 2018; van der Waal and Thijssens, 2020); to provide a comprehensive, multi-dimensional, and dynamic perspective (Allen et al., 2018); and to incorporate assessment and measurement tools that evaluate the inter-connectedness among the tri-dimensional pillars of SD (Allen et al., 2018).

Since the publication of the Brundtland report (1987), SD has achieved relatively broad acceptance in the business sphere. However, the report only briefly mentions the role of business organisations in relation to SD issues (Blindheim and Langhelle, 2010). Nevertheless, there was a conviction among members of the Brundtland Commission of the need to produce a report, 'Agenda 21', that would influence large and non-governmental actors, such as business organisations (Blindheim and Langhelle, 2010; Langhelle et al., 2008). Business organisations played a central role in preparing for the World Earth Summit (1992) in Rio de Janeiro. However, during the Summit, business organisations and industries were heavily criticised for their lack of response to the Brundtland report (1987). As a result, the World Business Council for Sustainable Development (WBCSD) was formed, providing business organisations and industries with a strong voice (Blindheim and Langhelle, 2010).

With the publication of the Agenda 21 'Action Plan', the UN began to highlight the role of business organisations in addressing SD challenges. Agenda 21 states that business organisations and industries play a crucial role in the socio-economic and environmental development of home and host countries. Furthermore, Agenda 21 calls for the full participation of business organisations and industries in the evaluation and implementation of activities related to SD.

[2] SD faces major challenges due to the limitations of the report itself, changes in the status quo, and the creation of new alternatives.

Ultimately, the Brundtland Commission (1987) and Agenda 21 (1992) came to serve as the basis for the MDGs, or the 'Millennium Declaration', which sets eight global goals – encompassing four targets and 10 indicators for achieving SD by 2015 (Saner, Yiu, and Kingombe, 2019). The MDGs focus on the worldwide 'eradication of extreme poverty and hunger', but they cover a narrow range of sustainability issues – such as poverty and hunger, education, gender equality, infant mortality, maternal health, disease, environmental sustainability, and global partnerships. According to de Jong and Vijge (2021), the MDGs overlook the subsets within the system of sustainability, as well as the interactions between these subsystems. For instance, water resources and biodiversity are both focused on land and below water. That is, the interlinkages and synergies between the subsets within the system of sustainability are overlooked (Lozano, 2013).

Furthermore, the MDGs overlook the accounts of vulnerable marginalised groups (de Jong and Vijge, 2021), such as those who are geographically distant from water resources and suffering as a result (Belal et al., 2013). Although the MDGs aim to stimulate universal aspiration, they focus on addressing development issues and challenges through a donor-centric view of developing countries (de Jong and Vijge, 2021). According to de Jong and Vijge (2021), this reinforces the passive role of the developing countries and the aid agenda, rather than promoting an active role and partnership agenda, as seen in the 'Agenda 2030' SDGs.

In 2015, after the MDGs, the UN launched the SDGs to promote progress towards SD, with 17 SDGs, comprising 169 targets and 304 indicators, called 'Agenda 2030'. The global Agenda 2030 represents a multilateral, multifaceted stakeholder approach, bringing together multiple stakeholders to advance and sustain progress towards SD. Agenda 2030 thus represents a more inclusive approach to SD, as evidenced by its 40 references to 'inclusivity' (Arts, 2017).

The 17 SDGs of Agenda 2030 endeavour to ensure, integrate, and meet humanity's socio-economic and environmental needs. More specifically, the SDGs work to achieve targets and assess progress towards SD. They represent societal present and future expectations of SD and emerged to address the operational difficulties. First, the SDGs represent a unified multi-stakeholder agreement on economic, social, and environmental issues; second, they represent a holistic operational sustainable solution that embodies targets, indicators, and practices; third, they depict 15 years of progress towards Agenda 2030; and finally, the SDGs delimit the trade-offs on contested issues by interlinking and synergising the targets. For instance, insufficient attainment of SDG 6.3 (on water quality and wastewater) leads to critically insufficient

progress towards SDG 3.9 (on reducing illnesses and death), 14.1 (on reducing marine pollution), and 15.1 (on terrestrial and freshwater ecosystems), among others. The SDGs embody unified, holistic, short-term, close-ended, and interlinked progress towards SD.

The 17 SDGs are all deemed equally important; thus, they should be addressed and implemented as a whole, according to the UN Agenda 2030 (Boiral et al., 2019). However, organisations communicate and engage with the 17 SDGs according to their own understanding and perspectives (Boiral et al., 2019; van der Waal and Thijssens, 2020).

According to Boiral et al. (2019), the 17 SDGs of Agenda 2030 have become a discursive instrument that organisations use to demonstrate accountability towards their stakeholders and which legitimise operations and practices in the mining industry. In this way, organisations obtain an SLO and access to limited natural resources. Furthermore, Boiral et al. (2019) highlight that the 17 SDGs of Agenda 2030 are focused on stakeholders and socio-economic and environmental issues that may be overlooked by organisations. These issues include poverty and hunger, education, good health, life on land, and life below water. Therefore, if properly integrated, the 17 SDGs of Agenda 2030 could encourage organisations to engage with unconventional stakeholders and issues, such as the spiritual issues of indigenous communities near extractive and mining activities.

The 17 SDGs of Agenda 2030 require a multi-stakeholder approach (Boiral et al., 2019) that seeks to 'encourage and promote effective public, public-private and civil society partnerships' (United Nations, 2015, p.32). If properly integrated, the SDGs could improve organisations' accountability by reducing the materiality gap[3] between organisations and the expectations of their stakeholders (Boiral et al., 2019).

For this reason, Boiral et al. (2019) emphasise the interconnection between stakeholders' local and global goals. According to Boiral et al. (2019), by addressing local issues, organisations could progress towards the achievement of the Agenda 2030 SDGs. However, this would require stakeholder engagement, which entails the implementation of measures and mechanisms to facilitate partnerships and collaboration between organisations and their stakeholders (Boiral et al., 2019). By engaging with their stakeholders, organisations can identify and address their mutual sustainability interests and the issues that might guide their operations and practices, whilst demonstrating their accountability to their stakeholders, which

[3] The materiality gap, according to Boiral et al. (2019), is the difference between the organisation and stakeholders' perspectives, specifically on socio-economic and environmental issues. The materiality gap reflects the managerial capture of socio-economic and environmental issues.

legitimises their operations and practices in the mining industry (Boiral et al., 2019). In this way, the organisation obtains an SLO and access to limited natural resources.

According to Ike et al. (2019), Agenda 2030's 17 SDGs provide a universally accepted understanding of SD, covering a wide spectrum of socio-economic and environmental issues. Furthermore, and most importantly, business organisations are the key to achieving these SDGs. However, organisations face challenges with operationalising and therefore with achieving the SDGs. Ike et al. (2019) found that, as a result, organisations prioritise those SDGs that are related to their core business operations and practices and of major concern to their stakeholders, such as local communities.

According to van der Waal and Thijssens (2020), the Agenda 2030 SDGs require a multi-stakeholder approach, with public, private, and civil society organisations each playing a part in realising and progressing towards SD. Furthermore, the agenda entails a scheme of goals whose purpose is to create value for the common good – such as reducing poverty, eradicating hunger, and protecting biodiversity. The authors state that organisations embracing SD are highly likely to shift their focus towards the Agenda 2030 SDGs because this is considered a 'positive practice' (p.3).

However, van der Waal and Thijssens (2020) found that organisations are motivated to embrace the SDGs for a mixture of legitimacy and institutional reasons. In relation to legitimacy, the organisations' communication of and involvement with Agenda 2030 SDGs is typically in broad terms (intentions, opportunities, future actions), whilst they tend to remain silent on actions taken (measurement and assessment) and the operationalising of the SDGs. In relation to institutional motivations, organisations report on the Agenda 2030 SDGs due to commitments to sustainability-related initiatives, such as the Global Compact and the GRI. In addition, reporting on the SDGs tends to reflect an organisation's size, country setting, and sustainability ranking. Therefore, van der Waal and Thijssens (2020) conclude that organisations use the SDGs as rhetoric, rather than for meaningful transformative action.

Furthermore, a few SDG targets and indicators are only weakly related to core business operations and practices. These include SDG 1 (no poverty), SDG 2 (zero hunger), and SDG 16 (peace, justice, and strong institutions; van der Waal and Thijssens, 2020). A possible explanation for this can be found in the study by Dyllick and Muff (2016), which highlights the prior disconnect between SD and business-corporate sustainability. SD discourse is a macro-level narrative centred around world goals, issues, and challenges (Salvia et al., 2019),

whilst business-corporate sustainability is a micro-level narrative focused on a win-win proposition for operations and practices, such as cleaner production operations and eco-efficient practices (van der Waal and Thijssens, 2020).

In response to this issue, Dyllick and Muff (2016) propose a stakeholder approach that brings together the macro-SD and micro-corporate discourse. The authors developed a sustainability framework with three components: *input, process,* and *output*. For the input, organisations identify different stakeholder concerns (interests, issues). For the process, organisations engage with stakeholders by embedding sustainability throughout their operations and practices. For the output, organisations focus on creating mutually shared values for the common good.[4] Collectively, the input-process-output framework forms a foundation for balanced sustainable operations and practices. In this way, the creation of mutually shared value for the common good becomes the purpose of the organisation's activity and actions.

Similarly, Gusmão Caiado et al. (2018) conclude that organisations should embrace a multi-stakeholder approach for interpreting and operationalising the SDGs. However, they highlight certain constraints and obstacles to the operationalisation of the SDGs. The Agenda 2030 SDGs represent a top-down approach that is designed, dictated, and directed by the powerful elite, especially with regard to practices. The authors thus suggest a bottom-up approach that embraces a problem-solving network of stakeholders. In other words, Gusmão Caiado et al. (2018) argue for highlighting multiple voices and perspectives in the approach to operationalising the SDGs. The authors suggest embracing stakeholder engagement and collaboration, which entails incorporating stakeholders' interests to operationalise the SDGs. In this way, the progression towards achieving the SDGs becomes the purpose of the organisation's activities and actions.

As a reflection of society, the SDGs represent stakeholder expectations for sustainable behaviour, through targets, indicators, and practices. That is, the SDGs permit the measurement, monitoring, and communication of action on sustainability (Singh et al., 2012) and represent compliance with stakeholders' present and future expectations of SD.

However, managers of the organisations play a key role in progressing towards the Agenda 2030 SDGs by engaging with stakeholders and organisations to incorporate their interests

[4] According to Dyllick and Muff (2016), the common good is that which benefits the economy, society, and the environment as a whole.

when operationalising the SDGs. The following section discusses organisational engagement with stakeholders.

2.2 Stakeholder Management – Management of Stakeholders

This section explores the empirical literature on organisations' interactions with a configuration of stakeholder networks to determine the nature of the organisations' relationships or engagement with their stakeholders (Freeman, 1984; Clarkson, 1995; Mitchell et al., 1997); organisations' creation of shared value and avoidance of trade-offs between stakeholders' expectations and interests (Post et al., 2002; Phillips et al., 2003; Greenwood, 2007); and the interplay between organisations' strategic objectives and stakeholders' normative objectives (Harrison and Wicks, 2013; Fujimoto et al., 2019; Berman and Johnson-Cramer, 2019).

The concept of the 'stakeholder' emerged from Freeman (1984) in his seminal work titled, 'Strategic Management – A Stakeholder Approach'. Freeman (1984) defines stakeholders as 'any group or individual who can affect or is affected by the achievement of the organisation's objectives' (1984, p.46). According to Freeman (1984), organisations have various stakeholders, with multiple and multifaceted stakes in their performance, operations, and practices – and, together, these form a 'stakeholder network'. Stakeholders who affect or are affected by the organisation's attainment of its objectives are the key to the survival and success of the organisation. Clarkson (1995), influenced by Freeman's works, defines stakeholders as 'persons or groups that have, or claim, ownership, rights, or interest in a corporation and its activity, past, present, or future' (1995 p.106).

According to Clarkson (1995), an organisation's engagement with its stakeholders might vary depending on its interests. For instance, primary stakeholders take market-driven actions and share similar interests. They are essential for an organisation's survival. If primary stakeholders withdraw their support, the survival of the organisation is at stake. Therefore, these stakeholders – who might be government ministries or the local community, amongst other parties – possess sufficient bargaining power and the ability to influence an organisation.

In contrast, secondary stakeholder actions are non-market-driven, thus these stakeholders have different interests. Secondary stakeholders have the power to influence and disrupt an organisation's operations and practices. They focus on evaluating the performance of the organisation, thereby affecting its long-term growth. Examples include NGOs and the media.

As a result, organisations face the challenge of satisfying these stakeholders' conflicting interests, whilst the satisfaction of one stakeholder might come at the expense of another.

For success and survival, organisations must recognise and engage with a variety of issues. When engaging with stakeholders, organisations create shared value and avoid the need for trade-offs between various parties' expectations. Without such engagement, organisations endanger their long-term profit and survival. That is, the ability of an organisation to generate sustainable profit and ensure survival is determined by its relationships with its stakeholders.

The Freeman (1984) and Clarkson (1995) definition and conceptualisation of stakeholders have been criticised as broad and vague (Parmar et al., 2010). However, it is argued here that the definition actually permits multiple stakeholders to claim a legitimate stake in the organisation's performance, operations, and practices.

Nevertheless, the theoretical perspective advanced by Freeman and Clarkson lacks reference to the stakeholder attributes that justify the dynamic interaction between organisations and their stakeholders. Therefore, Mitchell et al. (1997) extended the conclusions of Freeman (1984), arguing that organisational communication, commitment, and engagement depend on the salience of stakeholders. The salience of stakeholders, in turn, is determined by the possession of one or more of the three stakeholder attributes, which are power, legitimacy, and urgency of claims (Mitchell et al., 1997).

From this perspective, organisations engage with a multiplicity of stakeholders, who exercise different forms of power (coercive, utilitarian, and normative; Dahl, 1957). There is the power to influence the organisation through physical resources of force, violence, and restraint (coercive power). Alternatively, stakeholders might influence an organisation via material or financial resources (utilitarian power), or they may use symbolic resources (normative power).

Organisations respond to those stakeholders who have legitimate claims that influence the legitimacy of their operations and practices (Suchman, 1995). However, the legitimacy of the stakeholder's claims is a matter for the organisation manager's perception (Agle et al., 1999). Organisations might respond to urgent stakeholder claims, particularly those that are *time-sensitive* and *critical* – the former referring to the degree to which a delay by the manager in attending to the stakeholder's claim is deemed unacceptable, while the latter refers to the importance of the claim (Mitchell et al., 1997).

When they combine these attributes, stakeholder claims gain salience and the organisation gives attention to the party's interests. That is, organisations prioritise stakeholders according

to the salience of their claims (Mitchell, Agle, and Wood, 1997). However, if an organisation only commits to and engages with those salient stakeholder claims, this may jeopardise the legitimacy of its operations and practices, its long-term profit maximisation, and its survival (Parmar et al., 2010). For instance, a local community may possess the ability to block – through legal or other means – the organisation's access to limited resources or its SLO or have the ability to tarnish the organisation's image and reputation through a partnership with an NGO (Azapagic, 2004; Corrigan, 2018; Zhang et al., 2015).

Organisations interact with configurations of stakeholder networks, and this determines the nature of the organisations' engagement with their stakeholders. The organisations face the challenge of satisfying a multiplicity of stakeholder interests within their stakeholder network (Post et al., 2002). In this context, the organisations seek to satisfy conflicting interests that arise, whilst the satisfaction of one stakeholder might come at the expense of another (Mutti et al., 2012).

When faced with these challenges, according to Post et al. (2002), organisations either embrace the 'management of stakeholders' approach or the 'stakeholder management' approach. The management of stakeholders is primarily a negative practice (Greenwood, 2007) that uses a subtle manipulative strategy to align stakeholders' socio-economic and environmental interests with the organisation's strategic interests. The organisations thus communicate both commitment to and engagement with stakeholders' issues. However, this method lacks stakeholder engagement and collaboration, which leads to poorly designed and problematic[5] – albeit desirable – strategies, operations, and practices.

In contrast, stakeholder management is primarily a morally positive practice (Greenwood, 2007) that entails changing management philosophy to integrate stakeholders' expectations into the decision-making and strategies. This involves incorporating stakeholder engagement and collaboration, which extends the joint value-creation process to include all stakeholders (Freudenreich, Lüdeke-Freund, and Schaltegger, 2019). However, Post et al. (2002) assume that all stakeholders have the ability to voice their interests within the stakeholder network. That is, the authors assume that all stakeholders enjoy procedural fairness and justice, especially with respect to decision-making around the creation and distribution of value (Phillips, Freeman, and Wicks, 2003).

[5] These are strategies, operations, and practices that are desirable in the short-term in the eyes of stakeholders, while problematic in the long-term for sustainable socio-economic and environment development.

However, Phillips et al. (2003, p.498) raise a question:

> Are all stakeholders equal (all deserving an equal proportion of organizational outputs and equal voice in decision-making) or do some stakeholder groups deserve a greater proportion of the outputs and more consideration in decision-making due to some notion of unequal input and merit?.

They argue that stakeholders should be treated equally, albeit based on their relative contributions to the organisation – in other words, they should be treated meritocratically. The authors clarify this argument with a quote from the Sloan Foundation Colloquy: 'corporations should attempt to distribute the benefits of their activities as equitably as possible among stakeholders, in light of their respective contributions, cost, and risks' (Phillips et al., 2003, p.488). For instance, they might consider the local communities' contributions or sacrifices of their limited natural resources.

According to Phillips et al. (2003, p.487), stakeholders 'have an interest in the fairness of the final outcome of the distributive process, but evidence also suggests that people stakeholders are concerned about the justness of the process of distribution itself'. Thus, the key determinant of fairness and justice procedural distribution is the degree of stakeholder engagement, participation, and involvement. Furthermore, stakeholders are concerned with the fairness and justice of the procedural distribution, which leads to fair and just final outcomes.

From this perspective, stakeholders might be more inclined to engage with organisations that demonstrate fair and just procedural creation and distribution of value. According to Greenwood (2007), stakeholder engagement is morally neutral. That is, the actors' virtue determines the motivation for communication, commitment, and engagement within society. Therefore, the organisation's objective when engaging with its stakeholders might be a morally positive practice, enabling cooperation based on mutual benefits, or it might be a morally negative practice that uses control mechanisms masquerading as responsible and accountable behaviour. As a result, an organisation communicating both commitment and engagement does not automatically imply accountability to its stakeholders (Dawkins, 2015; Greenwood, 2007).

For this reason, as Greenwood (2007) writes, 'many accounts of stakeholder activities focus on the attributes of organisations or the attributes of stakeholders rather than on the attributes of the relationship between organisations and stakeholders' (p.318). Here, Greenwood (2007) highlights the power asymmetry between organisations and their stakeholders, especially the less powerful, voiceless stakeholders. He argues that an organisation's engagement with its stakeholders – moral and strategic – should be free of power imbalances and asymmetry to

permit the stakeholders to share their interests with wider society. In addition, organisations should facilitate inclusion and equal opportunities for participation, especially for socially marginalised groups. By doing so, organisations create shared value and avoid trade-offs between stakeholders' respective expectations; but without this, organisations endanger their long-term profits and survival (Freeman, 1984).

However, the concept of creating shared value raises the question of how value can be created for multiple stakeholders (Freeman, 1984; Donaldson and Preston, 1995). According to Harrison and Wicks, stakeholder engagement is critical for creating value and ensuring the performance and present and future success of the organisation. Value, according to Harrison and Wicks (2013, p.100), is 'anything that has the potential to be of worth to stakeholders', whilst the organisation's performance is 'the total value created by the firm through its activity'. Therefore, for Harrison and Wicks (2013), organisational performance is beyond financial-economic value and broader than narrow contracts with powerful legitimate stakeholders.

However, within the stakeholder network, stakeholder values differ at the individual and societal levels. Moreover, value creation is interconnected: if managerial actions create value for certain stakeholders, those managerial actions then affect other stakeholder values (Harrison and Wicks, 2013). As a result, organisations face the risk of satisfying one stakeholder only at the expense of another. Harrison and Wicks (2013) suggest that to avoid this type of trade-off, organisations should embrace stakeholder engagement that includes and extends economic value to include the creation of social and environmental value for stakeholders.

According to Fujimoto et al. (2019, p.714), stakeholder engagement entails inclusion and participation, which permits 'minority members insider status, belongingness, full contribution, engagement, and participation in the organizational decision-making process, as well as the means to draw out minority members' unique perspectives and to integrate differences within a workplace'. Therefore, Fujimoto et al. (2019) suggest creating a community organisation based on principles of fair inclusion and participation for those from socially marginalised groups. In this way, organisations might achieve normative-ethical engagement that guides instrumental-strategic behaviour. That is, organisations could demonstrate their accountability to their stakeholders, which would legitimise their operations and practices.

From this perspective, Berman and Johnson-Cramer (2019) argue for the interplay between organisations' strategic objectives and stakeholders' normative objectives; that is, organisations' normative-ethical engagement with stakeholders, which entails a fair and just procedure for the creation and distribution of shared value. Thereby, organisations address stakeholders' interests equally, though based on their relative contributions, cost, and risk.

Similarly, McGahan (2020) addresses the boundaries of stakeholders' claimancy rights, in an article titled, 'Where does an organisation's responsibility end?'. According to McGahan (2020), organisations face the challenge of identifying which stakeholders and stakeholder groups do (or do not) have claimancy rights (Klein, Mahoney, Mcgahan, and Pitelis, 2019).

According to Klein et al. (2019), stakeholders willingly assemble to contribute resources and capabilities, which creates shared value with the organisations. Stakeholders willingly assemble to create shared value because they anticipate that the value created by the group will be greater than that created by the individual. Thereby, stakeholders achieve the status of enfranchisement.[6] Furthermore, enfranchised stakeholders obtain claimancy rights[7] to use jointly created shared value.

Organisations might decide to focus on enfranchised stakeholders who willingly provide specialised resources and capabilities that create joint value, thereby ensuring the attainment of their desired objectives and their survival. However, organisations require a mechanism to govern their relationships with stakeholders, which entails a fair and just procedure for the creation and distribution of shared value, namely a governance structure.

According to Klein et al. (2019, p.9), a governance structure is 'the formal and informal rules and procedures that control resource accumulation, development, and allocation; the distribution of the organization's production; and the resolution of the conflicts of interest associated with group behaviour'. Under this definition, the organisation's governance determines the stakeholders' enfranchisement and claimancy rights. If the organisation's governance structure is threatened by the external environment, then their value-creation activities with stakeholders are put at risk. For instance, there may be deterioration in the common-pool resources.[8]

[6] According to Klein et al. (2019), enfranchised stakeholders are actors with the de facto ability to influence decision-making. Furthermore, stakeholders achieve the status of enfranchisement by contributing resources and capabilities that are central to the organisation's value creation.
[7] According to Klein et al. (2019), claimancy rights establish which stakeholder or stakeholder groups capture the value created by the organisation.
[8] According to Klein et al. (2019), common-pool resources are a subset of 'public goods', which are rivalrous in consumption (one person's use prevents another's use). Water is one example.

Therefore, Klein et al. (2019) argue that an organisation's ability to adapt to these external shocks to the institutional environment depend on the stakeholders' enfranchisement and their claimancy rights. However, this might require organisations to negotiate or re-negotiate arrangements with enfranchised stakeholders and stakeholder groups, especially regarding the sharing of common-pool resources that belong to all (Klein et al., 2019).

According to Klein et al. (2019), stakeholders might negotiate or re-negotiate arrangements, either to obtain enfranchisement and claimancy rights or to avoid threats to their joint value creation with the organisation. However, they highlight that agreement regarding the sharing of common-pool resources might deteriorate as the common-pool resources depreciate, thereby weakening the bargaining position of stakeholders and leading to costly re-negotiations. Therefore, 'close-knit' stakeholders might use a complex, layered, and nuanced mechanism of coordination, collaboration, and communication to leverage their claimancy rights and identify a path forward.

By engaging with stakeholders in the governance structure and activities, organisations can enhance their ability to address collective action problems, such as climate change (Klein et al., 2019). In facing such challenges, the organisation might identify operations and practices which, first, address collective problems and issues; second, address enfranchised stakeholders' claimancy rights; and third, avoid threats to desired performance objectives and ensure its survival (Klein et al., 2019). However, as mentioned above, engagement with stakeholders does not necessarily mean accountability to them (Dawkins, 2015; Greenwood, 2007). The following section focuses on organisations' accountability to their stakeholders' interests.

2.3 Stakeholder Accountability

As sustainability issues have global relevance, organisations face consistent challenges to demonstrate their accountability to their stakeholders (Yusof et al., 2015; Kemp et al., 2012). Therefore, this section explores the empirical literature on organisations' accountability to their multiple and multifaceted stakeholders and the communication of this accountability.

Scholars increasingly perceive organisations as socio-economic actors accountable to various stakeholders (McWilliams et al., 2005; McWilliams and Siegel, 2001). Accountability is thus an embedded social system with social-economic and environmental interactions (Adams and McNicholas, 2007; Yusof et al., 2015; Unerman et al., 2007). For instance, local communities

(the less powerful party) hold organisations (the more powerful) accountable for detrimental practices that affect their communities, the natural environment, and the national economy.

According to Gray et al. (1996), accountability imbues the organisation with a duty to provide an account of its decisions and actions, for which the organisation is then held responsible in the eyes of its stakeholders. That is, organisations assume the role of the *accountor*, being accountable for reporting on their performance to the *accountee* (Gray et al., 1996). Accountability thus refers to the provision of information by the organisation to stakeholders to explain or justify its decisions and actions. Accountability is the organisation's downward communication, commitment, and engagement with its stakeholders (Gray, 2010, 2002). To communicate their accountability, organisations use voluntary discourse to disseminate information on their performance, operations, and practices, as well as their impact on the stakeholders' interests (Gray, 2010, 2002).

However, according to Morsing and Schultz (2006), managers dictate who and what are accounted for in voluntary discourse. That is, the salience of stakeholders and socio-economic and environmental issues are at the manager's discretion (Mitchell et al., 1997; Agle et al., 1999). In this way, organisations retain the power to influence their stakeholders' perceptions of their operations and practices and then to strategically manage stakeholders' expectations (Post et al., 2002; Greenwood, 2007).

Organisations narrate and disclose an accountable approach to their stakeholders and can thus attain the status of 'accountable' in their eyes, without making any real sustainable transformative change. Morsing and Schultz (2006) suggest that when organisations engage with their stakeholders, this entails the inclusion, participation, and involvement of the latter: this is two-way, symmetrical communication between organisations and stakeholders that creates shared value (Freeman, 2010, 2017).

Similarly, Greenwood (2007) dispels the myth that, by communicating commitment and engagement, organisations are necessarily demonstrating responsibility and accountability to their stakeholders. According to Belal and Owen (2007), managers might use voluntary discourse to manage and engage with powerful stakeholders, which may jeopardise their long-term profit maximisation and threaten their survival, especially in emerging and developing countries (Belal and Momin, 2009). However, organisations might then overlook the interests of less powerful stakeholders, such as the vulnerable and marginalised.

Within emerging and developing countries, organisations might hold and exercise more power than the national government due to political instability, weak judicial infrastructure, limited enforcement of regulation and legislation, poor governance, and a lack of accountability (Belal et al., 2013). As a result, in voluntary discourse, organisations are able to dictate who and what are accounted for – such as the stakeholders and socio-economic and environmental issues. Organisations might decide to focus on satisfying their powerful stakeholders to legitimise their operations and practices in emerging and developing countries. In doing so, the organisation then marginalises its less powerful stakeholders, especially those whose expectations contradict those of the organisation or its more powerful stakeholders.

Alternatively, according to Belal and Cooper (2011), organisations might refrain from voluntary disclosure due to a lack of resources, knowledge and awareness, and legal requirements, as well as the threat of negative publicity. In this way, organisations might seek to avoid or mitigate legitimacy threats (Belal and Cooper, 2011). Furthermore, an organisation might be sustaining a myriad of operations and practices and a business-as-usual attitude in wider society.

According to Belal et al. (2013. p.85), 'those living in poverty in remote areas are rarely considered to be stakeholders'. That is, geographically distant stakeholders struggle to raise their voices and make their interests known. As a result, these stakeholders may be overlooked by organisations (Belal et al., 2013). If the expectations of these less powerful stakeholders contradict those of the organisation and its powerful stakeholders, the organisation might use its accounts to include or exclude certain stakeholder realities and to construct and maintain power relations between stakeholders and their social reality. In this way, the organisations marginalise vulnerable and geographically distant stakeholders such as indigenous communities in the areas affected by the extractive and mining industries who might have contributed to the creation of shared value (Boiral et al., 2019).

Killian and O'Regan (2016, p.1) argue that an organisation, through its accounts, 'produces a narrative that acquires symbolic power, directing legitimacy and power to the company, whilst restructuring the community's social relationship, …[and] patterns of accountability'. The organisation constructs a narrative that maintains the power asymmetry between the powerful, the less powerful, and the powerless in the stakeholder network. It might also construct narratives that alter stakeholder perceptions of the operations and practices. As a result, the organisation may be attributed the status of *sustainable* and *accountable* and thus be rendered legitimate in the eyes of the stakeholders (Boiral and Heras-Saizarbitoria, 2017).

In their investigation of sustainable reporting, Bini, Bellucci and Giunta (2018) found that the accounts of extractive organisations differed depending on the socio-economic and environmental issues and their stakeholders' value systems. Extractive organisations have a wide range of social contracts influencing their operations and practices in the mining industry. Therefore, they narrate and disclose their accounts, demonstrating their accountability to influential stakeholders' socio-economic and environmental expectations. Furthermore, extractive organisations might be in alignment with their stakeholders' own value systems, including those concerning their socio-economic and environmental values. The stakeholder value system maintains that organisations provide socio-economic benefits that outweigh the environmental costs in the eyes of their powerful stakeholders. In this way, extractive organisations legitimise their practices and operations for these powerful stakeholders (Deegan, 2002; Deegan, Rankin and Tobin, 2002; Milne and Patten, 2002; O'Donovan, 2002).

Likewise, Nwagbara and Belal (2019), in their investigation of corporate social responsibility (CSR) reporting, found that extractive organisations narrate and disclose their accounts to construct a perception of themselves as responsible and accountable in the eyes of their stakeholders. In this way, they manage stakeholders' perceptions and expectations, which legitimises their practices and operations and ensures their survival.

It could be argued that accountability comprises two constructs: *sustainable performance* and *sustainable reporting*. That is, accountability requires organisations to demonstrate sustainable operations and practices and then report, explain, and justify their actions to their stakeholders (Adams and McNicholas, 2007; Yusof et al., 2015; Gray, 2010, 2002; Gray et al., 1996; Kemp et al., 2012; Unerman et al., 2007). However, organisations narrate and disclose their accounts to construct or re-construct stakeholders' perceptions, thereby attaining the status of responsible and accountable without making any real, sustainable, transformative changes (Bini, Bellucci, and Giunta, 2018; Nwagbara and Belal, 2019).

For this reason, Dyllick and Muff (2016, p.1) emphasise the need to differentiate between efficient or inefficient contributions, prioritising the creation of 'mutual shared' value for the common good (Bini et al., 2018; Vintró et al., 2014). Without this, organisations will continue with business-as-usual, which can be detrimental to the social wellbeing, environmental health, and economic prosperity of less powerful stakeholders in the present and future.

The SDGs represent a common language and a shared purpose. They provide an accountable approach to meeting challenging economic targets whilst contributing to environmental

conservation and social development (Bebbington and Unerman, 2018; van der Waal and Thijssens, 2020). Furthermore, an accountable approach requires sustainable reporting, which includes assessments, measures, and indicators. The following section introduces SA for the measurement and monitoring of movement towards (or away from) SD.

2.4 Sustainability Assessment (SA): The Global Reporting Initiative (GRI) Protocol and Sustainable Development Goal (SDG) Compass

SA delineates a complex appraisal approach to measuring sustainable performance towards SD, using economic, environmental, and social indicators (Azapagic, 2004; Singh et al., 2012). This section outlines the empirical literature on internal and external SA and the use of SA for strategic-instrumental communication and ethical-normative communication with stakeholders by means of the GRI and the SDG Compass.

To measure sustainable performance, organisations use SA and related indicators that quantitatively or qualitatively measure movement towards (or away from) SD (Delai and Takahashi, 2011). With these indicators, SA measures the impact of organisational practices on the natural environment, civil society, and the economy. This allows organisations to sustain growth, monitor their progress, and strive for SD (Krajnc and Glavič, 2005).

Since SA assesses organisations' performance towards SD, these assessments reflect the entire sustainability system, as well as the interactions between the subsystems (Krajnc and Glavič, 2005). However, organisations are measuring short-term SA to predict long-term sustainable performance (Azapagic, 2004; Mancini and Sala, 2018; Rahdari and Anvary Rostamy, 2015; Zisopoulos et al., 2017).

As previously mentioned, accountability involves *sustainable performance* and *sustainable reporting*. SA encompasses both internal importance, for measuring sustainable performance, and external importance, for communicating this sustainable performance to stakeholders using a representative measure of performance, such as a sustainability report (Azapagic, 2004).

From an internal perspective, SA provides the opportunity to measure sustainable performance against a benchmark and thus to identify burden-shifting due to practice modification. For instance, the source of water withdrawal affects the total volume of water withdrawal in aqua provisions, such as surface and underground water. Therefore, SA disclosure provides a

comprehensive perspective of organisations' impact on sustainability (Azapagic, 2004; Bini et al., 2018; Fonseca et al., 2014; Onn and Woodley, 2014).

From an external perspective, organisations use SA to communicate sustainable performance and demonstrate engagement with and commitment to their stakeholders (Azapagic, 2004; Bini et al., 2018; Mancini and Sala, 2018; Onn and Woodley, 2014; Singh et al., 2012). However, organisations might decide to communicate only with their powerful stakeholders, which can jeopardise their long-term profit maximisation and threaten their survival, especially in emerging and developing countries (Belal and Momin, 2009).

From this perspective, organisations might use SA for strategic-instrumental communication to manage stakeholders' expectations (Post et al., 2002; Greenwood, 2007). Alternatively, organisations might use SA for ethical-normative communication to involve stakeholders in decisions and actions (Harrison and Wicks, 2013; Fujimoto et al., 2019; Boiral et al., 2019). SA entails an interactive and transactional process that influences understanding and perceptions of accountable behaviour, as well as expectations of operations and practices.

SA involves guidelines, measurements, and indicators for communicating accountability at different scales, including the industrial, national, and international levels (Azapagic, 2004; Mancini and Sala, 2018; Rahdari and Anvary Rostamy, 2015; Zisopoulos et al., 2017). However, organisations conducting SA at different scales might have difficulty with cross-comparisons and thus struggle to monitor SD progress.

To overcome this issue, the United Nations Global Compact (UNGC), the WBCSD, and the GRI developed the SDG Compass (Garcia-Sanchez et al., 2020). The SDG Compass guides an organisation's actions and reporting on socio-economic and environmental issues. The SDG Compass is a strategic tool that integrates sustainable concerns into an organisation's evaluation of its performance, operations, and practices, thereby fostering the creation of sustainable shared value (Garcia-Sanchez et al., 2020).

The SDG Compass maps the 17 SDGs (targets and indicators) against the GRI (general and industry-specific indicators) to reveal the impact of the organisation's performance on the Agenda 2030 SDGs (Garcia-Sanchez et al., 2020) – for instance, measuring the alignment of SDG 6.3 on 'water quality' with GRI G4-MM8 on 'disposal of tailing in water systems'. Please see Table 2.1 below.

Table 2.1 Global Reporting Initiatives (GRI) – Sustainable Development Goal 6 (SDG 6), 'Clean Water Sanitation' (GRI, UN Global Compact, and WBCSD, © 2015)

Sustainable Development Goal (SDG) 6 on Ensuring Availability and Sustainable Management of Water and Sanitation for All		
Business Theme	**SDG Targets**	**Disclosure – GRI Indicators**
Land Remediation	**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping, and minimising the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.	MM1
	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes.	
Spills	**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping, and minimising the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.	G4-EN24
Sustainable Water Withdrawal	**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.	G4-EN8, G4-EN9, G4-EN27
Waste	**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimising the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.	G4-EN23
Water Efficiency	**6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.	G4-EN10
Water Quality	**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimising the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.	G4-EN22, MM3, MM8
Water Cycling and Reuse	**6.3** By 2030, improve water quality by reducing pollution, eliminating dumping, and minimising the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.	G4-EN10
Water-Related Ecosystems and Biodiversity	**6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes.	G4–EN11, G4-EN12, G4-EN13, G4 EN14, G4-EN22, G4-EN24, G4 EN26, MM2, MM3, MM8.

MM*: Mining & Metals Indicators G4-EN*: GRI 4 Indicators- Environmental Category

The GRI, widely recognised as the leading global framework for sustainability reporting, provides sustainability-reporting guidelines that focus on two sets of accountability principles: *content* and *quality*. Regarding the content of the report, there must be consistency between the disclosed information and the organisational context, particularly between organisational activity and stakeholder expectations. This concerns stakeholder inclusiveness, sustainability context, materiality, and completeness (Boiral and Henri, 2017; Global Reporting Initiative, 2014). The second set of principles relates to the quality of the report, including the presentation and transparency of the information disclosed (e.g., comparability, accuracy, timeliness, clarity, reliability, and balance). The GRI guidelines assist in internalising the sustainability vision and mission into the organisation's ethos. However, organisations use the guidelines only to improve the content and quality of their sustainability reports (Boiral and Henri, 2017; Global Reporting Initiative, 2014).

The GRI has also developed industry-specific guidance on reporting practices, reflecting the unique characteristics of the industries, such as the GRI G4 mining and metals sector (GRI, 2014). For instance, in the industry-specific guidelines, extractive organisations are required to report on their project lifecycle – from short-term development through operation lifetime to long-term closure and post-closure (Azapagic, 2004; Mancini and Sala, 2018). Hence, the GRI has become the best-known voluntary framework for sustainability reporting.

A number of theoretical frameworks incorporate sustainability indicators compatible with the general and industry-specific indicators proposed by the GRI. For instance, Azapagic (2004) developed a sustainability indicator framework for the measurement of organisational performance, and this can be used for internal and external sustainability reporting. The framework reflects the entire sustainability system, as well as the interactions between the sub-systems, such as the impact of natural environmental sustainability on the local community's livelihood and organisational economic productivity (Azapagic, 2004).

However, the framework works on the assumption that adhering to the GRI guidelines communicates accountability and thus implies a commitment to and engagement with sustainability issues (Azapagic, 2004). This assumption overlooks that organisation managers dictate who and what are accounted for and reported on in the voluntary discourse (e.g., sustainability and CSR reports; Morsing and Schultz, 2006; Greenwood, 2007). As a result, managers might include or exclude certain stakeholder issues, construct and maintain power

relations within the stakeholder network (Post et al., 2002; Greenwood, 2007), and strategically manage stakeholders' expectations of their operations and practices (Boiral et al., 2019).

For this reason, studies have criticised the rhetoric of sustainability reports as potentially misleading for decision-makers, shareholders, and stakeholders due to the managerial capture of information and lack of stakeholder engagement in reporting (Bini et al., 2018; Onn and Woodley, 2014). In light of these issues, the SDG Compass, a multi-stakeholder assessment, was developed to engage stakeholders in sustainable reporting – for instance, alignment of SDG 6 (target 6.3 on 'water quality') with GRI G4-MM8 (on 'disposal of tailing in water systems') elicits the opinions, experiences, and perspectives of local communities. The SDG Compass provides support and guidance for organisations through multi-stakeholder assessment and indicators to measure progress towards SD – explicitly in relation to SDGs at the macro, meso, and micro levels.

The SDG Compass represents a comprehensive, multi-dimensional, and dynamic SA (Allen et al., 2018). It employs general and industry-specific indicators to measure and evaluate the inter-connectedness of the SDGs, thereby demonstrating the trade-offs between contested issues through interlinking and synergising indicators. For instance, GRI MM8 measures and evaluates progress towards SDG 6.3 (on 'water quality') and SDG 3.9 (on 'good health'), with failure to attain the former clearly preventing successful attainment of the latter. In this way, the SDG Compass permits a multi-stakeholder, systematic analysis of the SDGs (Ike et al., 2019).

However, the SDG Compass aligns the SDG targets and indicators with the GRI's general and industry-specific indicators, without contributing to changing or transforming the operations and practices. Thus, it permits SA that reflects the managerial capture of information, which can strategically manage stakeholders' perceptions and expectations of accountable behaviours (Boiral et al., 2019). In doing so, managers can legitimise their operations and practices in the eyes of their stakeholders, thus ensuring the attainment of their organisational objectives through business-as-usual operations and practices, as well as ensuring their survival.

According to van der Waal and Thijssens (2020), organisations embrace sustainability-related initiatives, assessments, and guidelines for a mixture of institutional and legitimacy reasons. Regarding the former, the authors found that organisations embrace SA due to commitments to sustainability-related institutions, such as the UNGC, the WBCSD, and the GRI, amongst others (Rosati and Faria, 2019). In relation to legitimacy motivations, the authors found that

organisations embrace SA to communicate their accountability to their stakeholders' conceptualisation of SD, explicitly the SDGs (Bebbington and Unerman, 2018). Based on their findings, van der Waal and Thijssens (2020) conclude that organisations use SA as a strategic tool for managing their stakeholders' perceptions and expectations of accountable behaviour, thereby legitimising their operations and practices.

In this connection, organisations communicate their account of their sustainable performance, which might demonstrate both their commitment to and their engagement with stakeholders' contemporary conceptualisations and expectations of SD, specifically the SDGs (Azapagic, 2004; Bini et al., 2018; Fonseca et al., 2014; Onn and Woodley, 2014). However, organisations use SA to strategically manage their stakeholders' perceptions and expectations of their accountable behaviours (Boiral et al., 2019), thereby legitimising their operations and practice, particularly in inherently unsustainable industries. The following section discusses the mining industry's pursuit of Agenda 2030's 17 SDGs.

2.5 Sustainable Development Goals (SDGs) in the Mining Industry

At a global level, organisations and industries are beginning to recognise their critical role in the attainment of SD (van der Waal and Thijssens, 2020). This section explores the empirical literature on extractive organisations' embrace of the Agenda 2030 17 SDGs (specifically, SDG 6 on 'clean water and sanitation').

According to van der Waal and Thijssens (2020), organisations embracing SD seek to communicate their commitment and engagement to the SDGs. According to the UN's Agenda 2030, all 17 SDGs are equally important and thus should be addressed and implemented as a whole. A range of sustainability initiatives, guidelines, and standards provide direction at the organisational level. However, organisations are permitted to interpret and prioritise the 17 SDGs according to their own understandings and perspectives (Ranängen et al., 2018). In this way, they dictate and direct their actions and practices towards meeting the SDGs (Ike et al., 2019).

In the mining industry, the principle extractive organisations are members of the International Council on Mining and Metals (ICCM), which recognises the sustainable challenges within their sphere of operations. In response, these extractive organisations have devised a set of operational sustainable principles, initiatives, and standards, known as the 'Mining, Minerals and Sustainable Development' (MMSD) project. The MMSD project claims to be inclusive, although it was predominantly unilaterally predetermined by the mining industry (Whitmore,

2006). As a result, the project does not emphasise the distinguishing features of extractive operations in the mining industry: rather, the focus is on the finite nature of natural resources (van der Waal and Thijssens, 2020). Extractive organisations are thus left with the challenge of identifying how to manage natural resources in a sustainable manner. At the same time, they must also address their stakeholders' contemporary conceptualisations and expectations of SD, specifically in relation to the SDGs (Monteiro et al., 2019).

The United Nations Development Programme (UNDP) has published sector-specific recommendations for addressing SDGs in the mining industry, with a paper titled, 'Mapping Mining to the Sustainable Development Goals: An Atlas'. The white paper emphasises stakeholders' interests, connecting the 17 SDGs to the impact of extractive operations on stakeholders in the mining industry. The paper indicates that organisations must endeavour to meet the SDGs, either by enhancing their positive impact or mitigating their negative impact. As shown in Figure 2.1 below, organisations can indirectly, moderately, or directly impact the SDGs. For instance, SDG 6 is categorised as a very direct priority because organisations require water resources to sustain their extractive and mining practices. However, according to Figure 2.1, extractive organisations can only mitigate the impact of (un)sustainable operations and practices.

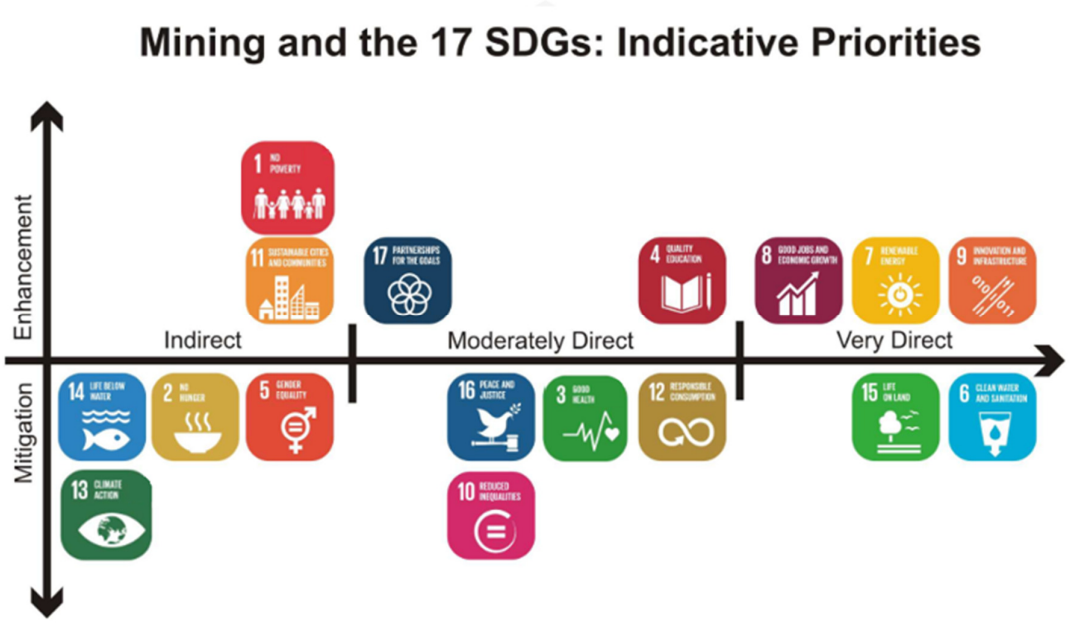

Figure 2.1 Mapping Mining to Sustainable Development Goals: An Atlas (The United Nations Development Programme [UNDP], 2016).

According to van Zanten and van Tulder (2018), organisations embrace the SDGs linked to their core operations and spheres of influence and pursue those that mitigate the negative impacts of their operations and practices (van Zanten and van Tulder, 2018), rather than seeking to ensure a positive impact on present and future society. However, without this focus, organisations jeopardise their SLO (Pereira Eugénio et al., 2013; Ike et al., 2019).

An SLO, as coined by the extractive and mining industry in 1997, constitutes stakeholders' broad and continuous social acceptance of organisations' operations and practices (Provasnek, Sentic, and Schmid, 2017). According to Provasnek, Sentic, and Schmid (2017), an SLO is the socially constructed 'acceptance' granted by stakeholders in return for conformity with a social contract that includes implicit and explicit expectations of behaviour (Prno and Slocombe, 2012). According to Jahn and Brühl (2018), social contracts consist of a two-layer system comprising macro-social contracts and micro-social contracts. For the former, organisations must obey universal hyper norms, values, and expectations with regard to all aspects of their operations. For instance, this includes Agenda 2030's SDG 6, concerned with access to clean and sanitary water for all, and for which organisations must conform to stakeholder-specific expectations, such as those concerning social-cultural water-related practices.

However, according to Provasnek, Sentic, and Schmid (2017) stakeholder engagement and procedural fairness and justice determine whether an organisation might obtain and maintain an SLO in the mining industry. When engaging with their stakeholders, organisations foster procedural fairness and justice (Phillips et al., 2003) and create shared value (Porter and Kramer, 2011). That is, if stakeholders perceive the organisation's creation and distribution of shared value to be fair and just, they will accept and approve the creation and distribution of shared value. In this way, organisations secure an SLO, which provides them with access to limited natural resources.

In their cross-cultural study, Spicer et al. (2004) identified cultural convergence in universal macro contracts and divergence among local micro contracts. That is, the elements of micro-social contracts vary due to differences in community, industry, and country context (Spicer et al., 2004; Jahn and Brühl, 2018). As a result, two micro-social contracts might contradict one another (Spicer et al., 2004; Jahn and Brühl, 2018). This creates the challenge of satisfying micro-social contracts within a community that might ultimately contradict one another (Jahn and Brühl, 2018): in other words, satisfying different stakeholder expectations is a challenge

that may require trade-offs within the stakeholder network. Nevertheless, if organisations are to secure and maintain an SLO, they must respect both macro- and micro-social contracts (Spicer et al., 2004).

By respecting social contracts, organisations maintain their SLO and their access to limited natural resources (Boiral and Heras-Saizarbitoria, 2017). Since organisations are not inherently entitled to these benefits, they must continue to obey both the universal and stakeholder expectations cited in the social contract (Spicer et al., 2004; Jahn and Brühl, 2018). This facilitates the organisations' long-term profit maximisation and ensures their survival (Jahn and Brühl, 2018).

Organisations that behave otherwise are perceived to be failing to meet universal and both implicit and explicit expectations. Organisations have both implicit and explicit contractual relationships with their stakeholders (Jahn and Brühl, 2018). Explicit contracts are formal obligations governed by social (e.g., labour) and natural (e.g., environmental) laws. In contrast, implicit contracts are informal obligations or 'invisible handshakes' between organisations and their stakeholders. They might be economic (e.g., employment opportunities), social (e.g., education), or natural (e.g., environmental preservation of the local community). If organisations fail to abide by these social contracts, then they might jeopardise their SLO and their access to limited natural resources, ultimately threatening their survival (Prno, 2013). Therefore, organisations pursue the SDGs that mitigate the negative impact of their operations and practices (van Zanten and van Tulder, 2018), rather than seeking to have a positive impact on present and future society. However, extractive organisations also have the potential to enhance their positive impact on stakeholders in the mining industry. They can achieve sustainable transformative change and extend value creation to address stakeholder interests, especially with respect to water issues.

Monteiro et al. (2019) investigated the congruence between the SDGs and the actions and practices in the mining industry. The authors conclude that stakeholders play a dual role, being both the bearers and problem-solvers of socio-economic and environmental issues. They suggest that organisations embrace stakeholder engagement and collaboration – for example, between miners of extractive organisations, the national government, and the local community (Monteiro et al., 2019). By doing so, organisations can identify a variety of sustainable practices and operations that address the stakeholders' multifaceted sustainability issues. This would legitimatise their operations and practices in the eyes of their stakeholders, providing

organisations with an SLO, securing their access to the limited natural resources that sustain their operations and practices, and most importantly facilitating their progress towards SD.

In the mining industry, organisations require water resources for their extraction of natural resources. However, these operations and practices cause serious issues in relation to consumption, contamination, and loss of water (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). Therefore, SDG 6 is increasingly significant in the mining industry.

With respect to SDG 6, Monteiro et al. (2019) found that extractive organisations focus on the socio-economic and environmental issues – such as water issues – that could lead to stakeholder tension. The authors suggest that organisations should apply water-management practices in their extraction operations. For instance, wastewater could be reused to reduce dust, whilst cooling extraction equipment and machines could be installed at the mining sites. In this way, organisations would reduce their consumption of limited water resources. Monteiro et al. (2019) thus provide further evidence for the argument that organisations prioritise SDGs that are directly related to their core operations and practices and spheres of influence within their local, industry, and country contexts (Ike et al., 2019).

Based on these studies, Pizzi et al. (2020) argue that scholars in the field of SDG literature should focus on the SDGs' normative-strategic 'potential' to strengthen strategy and practice, as well as performance reporting and measurements. This approach could achieve transformative action and change, which might extend 'value creation' to address organisational, social, and world issues.

The SDGs constitute an international agreement on the attainment of SD, especially in relation to SDG 6 and the mining industry. Extractive organisations have the potential to achieve sustainable transformative change and extend value creation to address stakeholder issues, especially with respect to water. The following section discusses the impact of extractive organisations on the availability of clean water and sanitation.

2.6 Sustainable Development Goal 6: Cleaner Water and Sanitation

The recent World Economic Forum Global Risks report (2020) ranked the water crisis fifth on a global scale for detrimental impact. Water, the source of life, is a finite and irreplaceable resource, fundamental for sustaining individual, societal, and industrial wellbeing. Water functions as a prevailing socio-economic and environmental constraint (Mudd, 2010). This section explores the empirical literature on the criticality of water issues in the mining industry

and the polarisation of sustainable mining, water-resource management, mining legacy, and industry and country-specific approaches.

Sustainability is a critical issue in water-intensive industries such as the mining industry (Burritt and Christ, 2018; Gunson et al., 2012; Kemp et al., 2010; Northey et al., 2016). The mining industry requires water resources for its extraction of natural resources. However, its operations and practices cause substantial water issues in relation to consumption, contamination, and loss (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). This can lead to social tension, particularly in water-stressed countries. Therefore, the literature in this area emphasises the impact on stakeholders (Horowitz, 2006; Laurence, 2011; Rajaram et al., 2005; Whitmore, 2006).

In the mining industry, extractive organisations' use of shared water resources affects the social wellbeing, environmental health, and economic future of humanity (Azapagic, 2004; Mudd, 2010; Northey et al., 2016). Water issues can lead to significant challenges that hinder progress towards SD (Gunson et al., 2010; Laurence, 2011; Mudd, 2007; Whitmore, 2006). Several studies have investigated the sustainable performance of organisations in the mining industry (Essah and Andrews, 2016; Prno and Scott Slocombe, 2012; Tost et al., 2018; Zhang et al., 2015), but few have focused solely on mining-industry environmental performance in relation to water-sustainability issues (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). Therefore, little is known about extractive organisations water issues in water-stressed countries. Thereby, this study investigates the following:

1. *What might be the challenges for national government and extractive organisations regarding access to clean and sanitary water in Jordan?*

Perceptions of SD appear to be polarised in the mining industry. For instance, Rajaram et al. (2005) argue that sustainable mining is essentially an oxymoron, due to the finite nature of resources. However, it is the finite nature of resources that determines the integration of sustainability in the mining industry. According to Rajaram et al. (2005), sustainability comprises infinite value in comparison to the continued availability of finite resources. That is, natural resources will not endure in perpetuity, but mining-industry organisations can implement sustainable operations and practices to benefit their stakeholders (Horowitz, 2006). Thus, mining and sustainability may be oxymoronic, but they are not antithetical.

Like Rajaram et al. (2005), Laurence (2011) argues that extractive organisations' activities comprise infinite value that could address stakeholders' interests; for instance, the extractive operations and practices could be extended to optimise the lifecycle of the mine, resource efficiency, economic benefits, environmental preservation, and community benefits. However, Laurence (2011) focuses on engagement with stakeholders – specifically local communities. By engaging with their stakeholders, extractive organisations might identify sustainable water-related practices that address both present and future water needs. Thereby, extractive organisations create shared value and avoid the need for trade-offs between their stakeholders' interests.

The sustainability literature tends to focus on the micro-level (specifically, on the mining sites), due to the mining operations' large consumption, contamination, and depletion of water (Horowitz, 2006; Laurence, 2011; Rajaram et al., 2005; Whitmore, 2006). For this reason, in studies of water-related practices that ensure the attainment of organisational objectives and survival, the managerial perspective tends to be adopted (Gunson et al., 2012; Mudd, 2010, 2007; Northey et al., 2016). That is, these studies reveal water-related challenges and discuss water-related practices from the managerial perspective. However, little is known about the stakeholders' water issues, and investigation of these could bring to light sustainable water-related practices. Therefore, this study investigates the following:

2. *What might be the challenges for relevant stakeholders regarding access to clean and sanitary water in Jordan?*

According to Gunson et al. (2012), extractive organisations could embrace water-resource management that involves categories and practices that promote accountability to stakeholders (Gunson et al., 2012, 2010; Kemp et al., 2010; Northey et al., 2016). A category is 'an umbrella term to group and sort the different practices and link them to relevant issues' – for instance, reducing, recycling, and reusing of water resources (Sauer and Seuring, 2017, p.237). Practices are the 'customary, habitual or expected procedure or way of doing something', such as treating wastewater for agricultural use (Sauer and Seuring, 2017, p.237).

Gunson et al. (2012) identified three water-management categories: *reduce*, *recycle*, and *reuse*. The authors highlight that these water-management practices are used at mining sites in response to the operations' consumption, contamination, and depletion of water. According to Gunson et al. (2012), the extractive organisations' implementation of sustainable water-related practices depends on whether water resources are output or input (Gunson et al., 2012; Northey

et al., 2016). For instance, phosphate refinement requires the utilisation of a wet process to separate tailing from phosphate; therefore, organisations consider the cost associated with the treatment of wastewater – namely, the remediation costs (Gunson et al., 2012). In contrast, operations that degrade water are associated with non-compliance with the regulations, which leaves organisations liable to fines and penalties (Gunson et al., 2010). For instance, potash refinement requires the utilisation of a dry process to convert fine particles into handled granular material for customers.

However, by engaging with stakeholders, extractive organisations might uncover sustainable water-related practices that reduce the costs associated with the treatment of wastewater, as well as helping the organisations to avoid penalties and fines. Northey et al. (2016) propose integrated water-resource management that relies on stakeholder engagement, collaboration, and participation. By engaging with stakeholders, organisations can uncover sustainable water-related practices that create shared value and avoid the need for trade-offs between stakeholders' interests. In this way, the organisations demonstrate accountability in the eyes of their stakeholders (Deegan et al., 2002; Deegan, 2019). This enables them to secure an SLO (Provasnek, Sentic, and Schmid, 2017) and maintain access to the limited natural resources they need to sustain their operations and practices.

Scholars have tended to focus on the negative impacts of the mining industry (Laurence, 2011; Rajaram et al., 2005; Tarawneh, 2016; Tost et al., 2018). That is, they have been concerned with the mitigation of the negative impacts of (un)sustainable water-related practices, in relation to consumption, contamination, and loss of water (Gunson et al., 2012; Mudd, 2010, 2007; Northey et al., 2016), rather than extractive organisations' potential to positively contribute to water sustainability (Edmans, 2020).

Onn and Woodley (2014) developed a three-tier framework that categorises extractive organisations within the sustainability agenda in relation to perpetual, transferable, and transitional sustainability. The framework reveals that extractive organisations tend to focus on transferable sustainability, which concerns the enhancement of positive impacts by mitigating the negative socio-economic and environmental impacts. For instance, extractive organisations treat wastewater to reduce the risk of illness and disease, which enables women and children to continue their education. Clean and sanitary water enables women to join the workforce, which lifts them out of poverty, which is especially relevant in low-income and water-stressed countries.

Tarawneh (2016) argues that extractive organisations can enhance their positive impact by mitigating their negative impact. In the mining industry, mineral endowments can contribute to socio-economic and environmental legacy (Tarawneh, 2016). According to Tarawneh (2016), mineral endowment – such as the high-grade phosphate and potash extracted at a lower operational costs in Jordan – can be a significant source of wealth, especially in emerging and developing countries. The author investigated the contribution of mineral endowments to a (sustainable) socio-economic and environmental legacy. Tarawneh (2016) explains that a sustainable legacy comprises socio-economic and environmental constructs, informed by stakeholder engagement, collaboration, and participation. By engaging with stakeholders, the extractive organisation might uncover sustainable water-related practices that could address the stakeholders' present and future needs. As such, extractive organisations could deliver a mining water legacy through water-harvesting dams, recycling plants, desalination plants, and so on. In this way, the extractive organisations could address the stakeholders' needs for clean water and sanitation, whilst maintaining their own SLO and access to the limited natural resources.

Tarawneh (2016) also suggests investing the mineral endowment into alternative industries, such as agriculture. In the mineral-mining industry, organisations use large volumes of water to sustain their operations, which generates large volumes of wastewater (Al-Hwaiti et al., 2016; Tarawneh 2016). According to Al-Hwaiti et al. (2016), wastewater – particularly that produced by the mineral-mining industry – can be used to fertilise and irrigate the agricultural crop, due to the low levels of toxic heavy metals element in the rock (Al-Hwaiti et al., 2015; Jiries et al., 2004; Rimawi et al., 2009).

By investing the mineral endowment into alternative industries and repurposing the wastewater, extractive organisations can mitigate their negative impacts. At the same time, they can increase their positive impacts by sustaining the economic productivity of the alternative industries and protecting the livelihood of the local communities and the natural resource environment. The mineral endowment would thus be available for present and future generations and the extractive organisations would be contributing to the attainment of SDG 6.

In light of these water issues, extractive organisations struggle to sustain their socio-economic and environmental development. In addition, organisations challenge sustaining their extractive and production activity in the mining industry due to water consumption, contamination, and loss (Alawneh et al., 2018). Hence, it could be argued that the mining

industry's failure to adequately address these water issues threatens progress towards SD and SDG 6.

The majority of studies have explored and investigated the SDGs collectively (Bebbington and Unerman, 2018; Gusmão Caiado et al., 2018; Ike et al. 2019; Monteiro et al., 2019; Rosati and Faria, 2019; Salvia et al., 2019; van der Waal and Thijssens, 2020). However, some studies have focused on communication and engagement with a specific SDG at the industrial or country level (Bebbington and Unerman, 2018; Monteiro et al., 2019). Little is known about organisations' potential contribution to the fulfilment of SDG 6. Therefore, this study investigates the following:

3. *Are the SDG 6 targets being achieved in Jordan? Why or why not?*

Tost et al. (2018) explored the environmental sustainability efforts of the largest extractive organisations and found that they were failing to meet societal expectations, particularly with respect to water issues. The authors suggest that extractive organisations could contribute more to the attainment of the SDGs and the implementation of sustainable practices by developing an industry-specific approach to SD. This would contextualise SD strategy, operations, and practices according to socio-economic and environmental priorities and challenges, as well as development needs. Through sustainable water-related practices, organisations in the mining industry could mitigate or enhance their impact on water issues, specifically in relation to SDG 6.

To enhance their contribution to SDGs, organisations could adopt a country-specific approach that considers national priorities and challenges, such as water scarcity in Jordan. In this way, they could contribute more to the achievement of SD, as well as supporting national efforts to attain SDG 6. Yakovleva et al. (2017) also suggest a country-specific approach that contextualises SD strategy according to social, economic, and environmental challenges and development needs. The authors discuss extractive organisations' contributions to the attainment of Agenda 2030's 17 SDGs through the development of a country-specific approach. They argue that extractive organisations that embed sustainability in their core operations could deliver mining legacies that demonstrate commitment to and engagement with SD.

According to Yakovleva et al. (2017), a country-specific approach has multiple internal and external benefits, such as more efficient excavation, protection of the SLO, competitive

advantage, reduced operating costs, attainment of government provisions, customer loyalty, reduced risk, and long-term employment for the local community (Yakovleva et al., 2017). However, the authors emphasise that organisations should focus on cross-sector collaboration between public and private, especially in developing countries. By doing so, they can support national efforts towards the attainment of SDG 6.

In light of the above, extractive organisations should focus on water issues to ensure both the attainment of their objectives and their survival. Organisations should focus on integrated water-management practices, as these create shared value and avoid the need for trade-offs between their objectives and their stakeholders' interests, thereby assisting in the pursuit of SDG 6.

To date, several studies have focused on the (un)sustainable water-related practices of extractive organisations and their detrimental impact on the social wellbeing, environmental health, and economic future of humanity (Gunson et al., 2012, 2010; Kemp et al., 2010; Liphadzi and Vermaak, 2015). Such studies have focused on mitigating the negative, rather than enhancing the positive (Gunson et al., 2012; Laurence, 2011; Tarawneh, 2016; Tost et al., 2018). However, extractive organisations have the potential to make positive contributions to water sustainability (Edmans, 2020).

As discussed above, extractive organisations require water for their operations. At the same time, stakeholders require water to sustain their livelihoods, natural environment, and economic productivity. Therefore, the deterioration of water resources detrimentally affects both the extractive organisations and their stakeholders and threatens the progress towards SD and SDG 6.

2.7 Summary

This chapter has introduced and discussed the significance of SD, a term first popularised by the Brundtland Commission in its 1987 report. The Brundtland report's definition and conceptualisation of SD remains relevant to the prevailing circumstances: namely, the need to limit the use of natural resources to meet the present and future requirements of SD. However, the Brundtland report (1987) has been criticised as broad, vague, and un-operationalisable (Ross, 2009; Siew, 2015).

The UN launched the Agenda 2030 SDGs to sustain and advance progress towards SD, with the SDGs representing contemporary stakeholders' conceptualisations and expectations of SD. The 17 SDGs also address the operational challenges. To operationalise the SDGs – that is, to implement them in operations and practices – requires stakeholder engagement, collaboration, and participation. In this way, the organisations can create shared value and avoid the need for trade-offs between their stakeholders' interests.

The Agenda 2030 SDGs represent an accountable approach that uses targets and indicators to measure progress on SD. However, organisations might narrate and disclose an accountable approach towards their stakeholders, thereby attaining the status of accountable in the eyes of their stakeholders without making any real sustainable transformative changes. Therefore, accountability requires both sustainable performance and sustainable reporting: it requires organisations to demonstrate sustainable operations and practices and then report, explain, and justify their actions to their stakeholders.

For this reason, Dyllick and Muff (2016, p.1) point to the need to differentiate between organisations that contribute to their stakeholders through the creation of mutually shared value for the common good and those that do not (Bini et al., 2018; Vintró et al., 2014). Without this, organisations will continue with business-as-usual, which can be detrimental to their stakeholders' social wellbeing, environmental health, and economic prosperity in the present and future; that is, challenging stakeholders' contemporary conceptualisations and expectations of SD, namely Agenda 2030's 17 SDGs.

Corporate organisations can have a detrimental impact on stakeholders in water-intensive industries, particularly on water cleanliness and sanitation. Water is a finite and irreplaceable resource and fundamental for sustaining individual, societal, and environmental wellbeing. Therefore, it functions as a prevailing socio-economic and environmental constraint.

Water sustainability is a critical issue in water-intensive industries such as the mining industry (Burritt and Christ, 2018; Gunson et al., 2012; Kemp et al., 2010; Northey et al., 2016). In the mining industry, organisations require water resources for their extraction of natural resources. However, their operations and practices cause substantial water issues in relation to consumption, contamination, and loss (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). This can lead to social tension, particularly in water-stressed countries. Therefore, the literature in this area emphasises the impact on stakeholders (Horowitz, 2006; Laurence, 2011; Rajaram et al., 2005; Whitmore, 2006). SDG 6 is increasingly significant in the mining industry and it

could be argued that extractive organisations are challenging stakeholders' contemporary expectations of SD, specifically SDG 6.

By engaging with stakeholders, extractive organisations might uncover sustainable water-related practices that create shared value and avoid the need for trade-offs between stakeholders' interests. That is, extractive organisations' engagement with their stakeholders could inform their water-related operations, promoting accountability towards stakeholders. In this way, organisations could demonstrate the accountability needed to legitimate their operations in the eyes of their stakeholders, which would enable them to secure their SLO and their access to the limited natural resources required for their operations.

However, whilst several studies have investigated the sustainable performance of mining-industry organisations (Essah and Andrews, 2016; Prno and Scott Slocombe, 2012; Tost et al., 2018; Zhang et al., 2015), few have focused solely on environmental performance in relation to water sustainability in the mining industry (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). Furthermore, the mining literature tends to focus on sustainability at the micro-level, specifically the mining sites, due to the consumption, contamination, and depletion of water by extractive and mining operations (Horowitz, 2006; Laurence, 2011; Rajaram et al., 2005; Whitmore, 2006). These studies of the water-related practices that ensure the attainment of the organisation's objectives and organisational survival tend to take a managerial perspective (Gunson et al., 2012; Mudd, 2010, 2007; Northey et al., 2016). Therefore, this study asks the following questions:

1. *What might be the challenges for the national government and extractive organisations regarding access to clean and sanitary water in Jordan?*
2. *What might be the challenges for relevant stakeholders regarding access to clean and sanitary water in Jordan?*

Moreover, scholars have largely focused on the negative impact of the mining industry (Laurence, 2011; Rajaram et al. (2005); Tarawneh, 2016; Tost et al., 2018), with studies exploring the mitigation of unsustainable water-related practices' negative impacts, such as the consumption, contamination, and loss of water (Gunson et al., 2012; Mudd, 2010, 2007; Northey et al., 2016), rather than the organisations' potential to contribute to water sustainability (Edmans, 2020).

Finally, the majority of studies have investigated the SDGs collectively (Bebbington and Unerman, 2018; Gusmão Caiado et al., 2018; Ike et al. 2019; Monteiro et al., 2019; Rosati and

Faria, 2019; Salvia et al., 2019; van der Waal and Thijssens, 2020). However, some studies have focused on communication and engagement with a particular SDG (Bebbington and Unerman, 2018; Monteiro et al., 2019). Therefore, this study asks the following:

3. *Are the SDG 6 targets being achieved in Jordan? Why or why not?*

In light of the identified gaps in the literature, this study explores integrated water-management practices from the perspective of extractive organisations and their stakeholders in the mining industry. Water-sustainability-related practices enhance positive impact by mitigating the negative, thereby benefiting both the organisations and their stakeholders and delivering a mining legacy. Hence, this study was designed to assist extractive organisations and their stakeholders in their progress towards SD and their attainment of SDG 6.

Chapter Three: Theoretical Framework

Introduction

This chapter applies two theoretical lenses to construct an integrated theoretical framework. The first of these lenses is the Mitchell et al. (1997) stakeholder framework, rooted in stakeholder theory, which is applied to investigate the deployment of hegemonic discourse to elicit the consent of both highly salient and less salient stakeholders to unsustainable or sustainable water-related practices in the mining industry. Second, the Gramsci (1971) notion of cultural hegemony sheds light on the extractive organisations' exercise of ideological leadership to advance their interests and obtain their stakeholders' ideological consent to unsustainable or sustainable water-related practices in the mining industry. Jointly, these works comprise a theoretical framework that integrates multiple voices at the micro, meso, and macro levels.

3.1 Stakeholder Theory

This section explains the employment of stakeholder theory to reveal the nuance of the discourse of extractive organisations and their relevant stakeholders with regard to clean water and sanitation in the mining industry (Freeman,1984; Donaldson and Preston, 1995; Jones and Wicks, 1999). It also focuses on the managerial perceptions that could favour particular stakeholders over others (Tashman and Raelin, 2013) and thereby overlook the accounts of less powerful and powerless stakeholders who are geographically distant, indigenous, marginalised, and voiceless (Pedrini and Ferri, 2019). This section also introduces the notion of stakeholder engagement, highlighting the need for expansion of the managerial perception to consider both familiar and unfamiliar stakeholders (Reed, 2008; Colvin, Witt, and Lacey, 2016).

According to Freeman (1984), stakeholders have multiple and multifaceted 'stakes' in the performance, operations, and practices of an organisation, and together they comprise a stakeholder network. These stakeholders, who affect or are affected by the organisation's attainment of its objectives, are the key to the survival and success of the organisation. Therefore, organisation managers[9] are expected to go beyond their sole responsibility of profit maximisation for shareholders (Friedman, 1970). Furthermore, since organisations are not inherently entitled to use natural environmental resources, they are expected to satisfy 'any

[9] According to Freeman (1984), managers are the 'social conscience' of their companies and therefore responsible for satisfying powerful, less powerful, and powerless stakeholders. As such, managers are responsible for developing an ethical-normative culture (Magness, 2008).

group or individual who can affect or is affected by the achievement of the organisation's objectives' (1984, p.46). Without this, the organisation's long-term profit maximisation and its survival are endangered.

The Freeman (1984) definition and conceptualisation of stakeholder theory is often criticised as broad and vague (Parmar et al., 2010). However, this study argues that, in fact, they capture a nuanced picture of stakeholders' views and are therefore inclusive of a wide range of issues. To defend this argument, this study draws on the Donaldson and Preston (1995) perspective of stakeholder theory that comprises descriptive, normative, and instrumental theoretical approaches. According to Donaldson and Preston (1995), these approaches are both distinct and mutually inclusive: that is, they are nested within one another. The first (external) shell is descriptive, presenting and explaining the relationships within the external world. The second (middle) shell is instrumental, supporting the descriptive accuracy of the theory. The instrumental shell entails predictive value: if organisations adopt certain practices, they obtain the desired results. Finally, the central (inner) core of stakeholder theory is normative, assigning an intrinsic value to all stakeholders' interests (see Figure 3.1 below).

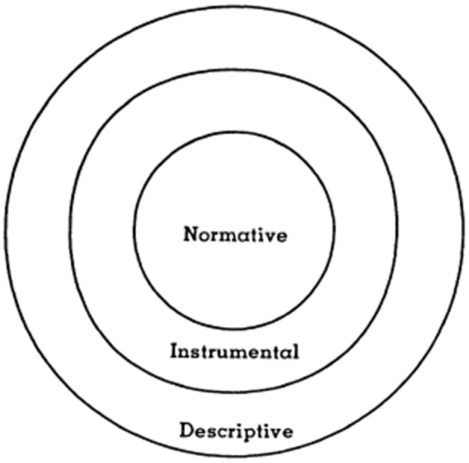

Figure 3.1 Donaldson and Preston (1995) Perspective of Stakeholder Theory

In this regard, no set of stakeholder expectations dominates any other, including those of shareholders and other stakeholders (Jones and Wicks, 1999). From this perspective, the normative and instrumental approaches can operate either dependently or independently of one another.

To elucidate, the normative approach focuses on the ethical guidelines that guide organisation managers' moral, responsible, and accountable behaviour (Dong et al., 2014). The normative-ethical approach focuses on how managers should respond to their 'stakeholders', including

the natural environment itself (Driscoll and Starik, 2004). According to this perspective, organisation managers should address all their stakeholders' conflicting interests (Clarkson, 1995; Freeman, 1984; Gray et al., 1996).

Meanwhile, for Clarkson (1995, p.106), 'stakeholders are persons or groups that have, or claim, ownership, rights, or interest in a corporation and its activity, past, present, or future'. In his definition, Clarkson (1995) highlights the heterogeneity of stakeholders, thus distinguishing between the primary (powerful) and the secondary (less powerful). However, Clarkson's (1995) definition and classification focus on powerful and less powerful stakeholders, disregarding the interests of powerless stakeholders, especially those who are geographically distant, marginalised, and voiceless.

Similarly, Gray et al. (1996) argue that organisations should give equal attention to all stakeholders. They assert that any stakeholder who is influenced by or who influences organisational activity should be included in the Freeman (1984) definition. However, Gray et al. (1996) assume that all stakeholders have the power to voice their issues, when, in fact, powerless stakeholders struggle to make their voices heard within the stakeholder network.

As SD is a stakeholder-oriented concept, this study argues that a normative-ethical core captures the voices of the powerful, the less powerful, and powerless stakeholders within the network. By embracing the normative approach of stakeholder theory, this study highlights the nuances of the stakeholders' voices, whilst being inclusive of all stakeholders' multifaceted issues. Thereby, this study captures the influence of both powerful and less powerful stakeholders on organisations' (un)sustainable water-related practices, as well as the influence of the powerless – such as the geographically distant, marginalised, and voiceless.

However, the instrumental approach focuses on the strategic management perspective and thus the relationship between stakeholder management and the achievement of organisational objectives and goals (Dong et al., 2014). These concern shareholder value maximisation (Friedman, 1970), legitimacy (Suchman, 1995), and competitive advantage (Porter, 1997). The instrumental-strategic approach focuses on how managers act towards critical or salient stakeholders (Mitchell, Agle and Wood, 1997). Thereby, it seeks to explain and justify organisations' unequal addressing of and responses to stakeholder expectations.

From an instrumental-stakeholder perspective, organisations focus on the business case[10] for sustainability, which aligns the expectations of stakeholders with the objectives and goals of the organisations. Thus, organisations focus on salient and profitable stakeholders who might assist in achieving their objectives and goals. According to Mitchell et al. (1997), organisations prioritise and differentiate between stakeholders based on their salient attributes, which then influences the organisations' actions and practices. When stakeholders' expectations differ, the key to managing the discrepancies lies in identifying stakeholders' salience according to the power, legitimacy, and urgency of their claims. In this way, organisations design socio-economic and environmental approaches that, first, allow efficient use of organisational time, capital, and resources, and second, respond positively and favourably to salient and less salient stakeholders with multifaceted interests.

However, Mitchell et al. (1997) assert that the salience of the stakeholder depends on the organisation manager's perception (Agle et al., 1999). According to Mitchell et al. (1997), managers are not merely agents of shareholders and thus responsible for maximising their profit and wealth (Mitnick, 1975); rather, they are also agents of salient and less salient stakeholders (Mitchell, Agle and Wood, 1997). Reflecting on Mitchell (1997), Tashman and Raelin (2013) explain that managers are the central decision-makers and thus the nexus of contracts between the organisations' shareholders and stakeholders (Jahn and Brühl, 2018). Therefore, by implication, managers are tasked with identifying and explaining stakeholders' issues, prioritising them in a manner that satisfies the expectations embedded within the nexus of contracts (Jahn and Brühl, 2018), and optimising the creation of value across the stakeholders' nexus of contracts.

From this perspective, organisation managers are responsible for voicing the interests of both salient and less salient stakeholders. This may include demands for clean water and sanitation. Thus, organisation managers are responsible for satisfying the set of expectations embedded within the nexus of contracts, which entails conducting operations and practices according to their stakeholders' expectations (Jahn and Brühl, 2018). As mentioned previously, the salience of stakeholders depends on the organisation managers' perceptions (Agle et al., 1999): if a manager perceives a stakeholder to be salient, the stakeholder's claims will possess one or more of the three salient attributes (namely, power, legitimacy, and urgency).[11]

[10] The business case for 'operationalising' sustainability entails increasing socio-economic value at the expense of the natural environment.

[11] According to Mitchell et al. (1997), stakeholders' salient attributes are socially constructed, variable, and fluctuating. However, urgency provides a chronological attribute that pins stakeholders' power and legitimacy to a 'particular' point in time.

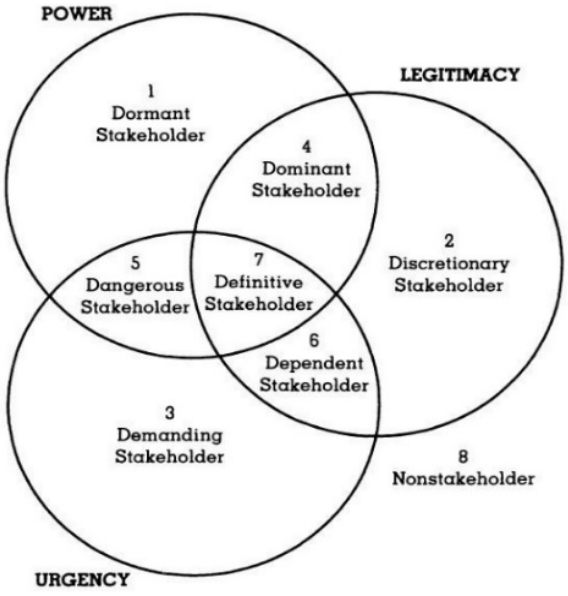

Figure 3.2 Mitchell (1997) Stakeholder Salience Framework

As illustrated in Table 3.1, the Mitchell (1997) stakeholder salience framework results in three broad classifications and eight narrow descriptions of stakeholder attributes (in order of declining priority): definitive, dependent, dangerous, dominant, demanding, discretionary, dormant, and non-stakeholder.[12] In this way, the framework captures the different perspectives of salient and less salient stakeholders that influence the actions and practices of the organisations.

Table 3.1 Mitchell (1997) Stakeholder Salience Framework

Broad Stakeholder Classification	Narrow-Stakeholder Classification	Description of the 'Salient' Stakeholder Attributes		
		Power	Legitimacy	Urgency
Non-stakeholder	Potential	Possessing **none of the attributes.**		
Latent	Dormant	Possesses the attribute of **power**, although unused. Examples are those who have a loaded gun (coercive), who can spend a lot of money (utilitarian), or who can command the attention of the media (normative).		

[12] As a dynamic stakeholder framework, Mitchell et al. (1997) argue that stakeholders acquire different salient attributes and therefore transition from latent, expectant, to definitive in stakeholder status.

	Discretionary	Possesses the attribute of **legitimacy**. Examples are non-profit organisations that have a legitimate relationship with the organisations.
	Demanding	Possesses the attribute of **urgency**. They are the 'mosquitoes buzzing in the ears'.
Expectant	Dominant	Possesses the attributes of **power and legitimacy.**
	Dangerous	Possesses the attributes of **power and urgency**. The stakeholder will be coercive and possibly violent, making the stakeholder 'dangerous' to the firm.
	Dependent	Possesses the attributes of **legitimacy and urgency** but lacks the power to act. These stakeholders have to rely on powerful stakeholders' benevolence and voluntarism to carry out their will.
Stakeholder	Definitive	Combines all **three attributes**, which managers prioritise.

Reflecting on Mitchell (1997), Tashman and Raelin (2013) argue that managerial perceptions could favour particular stakeholders over others due to market friction, such as bounded rationality, information asymmetries, and opportunism, as well as conflicting interests within the stakeholder network. Therefore, managers overlook the expectations of the less powerful and powerless stakeholders, who may have legitimate and urgent claims. Tashman and Raelin (2013) argue that the managerial perception of salience alone might be insufficient to identify, differentiate, and prioritise stakeholder expectations, interests, and issues.

Similarly, Olsen (2017) argues that managerial perceptions could favour particular stakeholders over others due to the influence of the state. Olsen (2017) asserts that Mitchell (1997) depicts the state as one of many salient stakeholders and ignores its character as a unique stakeholder with the power to determine salience. According to Olsen (2017), the state uses a variety of powerful tools – specifically through regulations and policies – that limit or expand managerial perceptions of stakeholders' salience (Gramsci, 1971). Therefore, managers might be influenced by salient stakeholders who condition their transactions and engagement with less salient stakeholders.

Drawing on Mitchell (1997), Tashman and Raelin (2013) and Olsen (2017) suggest the manager and a wide range of stakeholders at the organisational and societal levels might

socially construct stakeholder salience. In this way, managerial perceptions are converged with stakeholder perceptions of salience, which mitigates the impact of market friction and the state on the managerial perception of salience, as well as reducing the tendency to overlook the expectations of less powerful and powerless stakeholders.

Similarly, reviews by Pedrini and Ferri (2019) and Silva, Nuzum and Schaltegger (2019) reveal the lack of explicit consideration given to the voices of the less salient, less powerful, and powerless voices in measurements and assessment of performance, operations, and practice. Without this engagement, the strategic focus of the organisation becomes short-sighted, with a narrow focus on powerful stakeholders' influence on extractive and mining operations and practices, rather than a nuanced view that extends joint value creation to include all parties (Freudenreich, Lüdeke-Freund and Schaltegger, 2019). By engaging with their stakeholders, organisations identify a spectrum of sustainable extractive and mining practices that maintain their legitimacy. As a result, the organisations sustain long-term profit maximisation and ensure their survival (Jahn and Brühl, 2018), whilst stakeholders maintain their socio-economic benefits and protect their limited water resources.

From this perspective, Berman and Johnson-Cramer (2019) argue that organisations should be viewed and understood in the context of their various multifaceted stakeholder relationships, which should, in turn, be understood through an interplay of the normative and instrumental-stakeholder approaches. In this way, studies highlight the ethical-moral operations and practices that address the stakeholders' conflicting interests and support the attainment of the desired performance objectives.

Collectively, the works of Freeman (1984), Clarkson (1995), and Gray et al. (1996) provide a broad view of stakeholders' influence on organisations' communication of, commitment to, and engagement with sustainability. From this theoretical perspective, stakeholders should be attributed an equal status and all their expectations addressed equally. However, this assumes that all stakeholders have the power to voice their expectations, when, in reality, less powerful and powerless stakeholders struggle to do so (Gramsci, 1971; Guha, 1989, 1997; Spivak, 1994; Deegan, 2019).

In contrast, the theoretical perspective of Mitchell et al. (1997) focuses on the salient features and attributes of the stakeholders to explain the organisations' unequal address of their expectations. Organisations respond differently to a multitude of salient and less salient stakeholders due to the power, legitimacy, and urgency of their claims. Mitchell et al. (1997)

sought to capture the various salient and less salient stakeholder voices that influence organisations' operations and practices. For example, organisations may marginalise less powerful stakeholders if their expectations contradict those of the organisation or more powerful stakeholders.

For this reason, multiple authors, such as Clifton and Amran (2011) and Derry (2012), have criticised the Mitchell et al. (1997) stakeholder framework for advocating a narrow view of stakeholders. As mentioned previously, the Mitchell et al. (1997) framework prioritises stakeholders according to the power, legitimacy, and urgency of their claims. Thus, according to Clifton and Amran (2011) and Derry (2012), organisations might overlook the accounts of less powerful and powerless stakeholders who are geographically distant, indigenous, marginalised, and voiceless – for instance, nomadic and indigenous communities, as well as the natural environment itself (Driscoll and Starik, 2004; Boiral et al. 2019). As a result, these stakeholders may lack representation or be misrepresented in mainstream discourse (Derry, 2012).

By engaging with stakeholders, organisations recognise a wider range of stakeholder issues, especially those at the periphery of decision-making. Reed (2008) argues that this is likely to increase the quality and durability of the strategy, practices, and decisions. However, stakeholder participation and engagement are strongly dependent on the *nature* of the process, namely its fairness, justice, and democracy (Reed, 2008). Reed (2008) identifies eight key features of best practice regarding stakeholder engagement and participation that have achieved a broad consensus among scholars. First, stakeholder participation should be underpinned by a philosophy that emphasises empowerment, equality, trust, and learning. Second, stakeholder participation should be considered as early as possible and throughout the process of engagement. Third, relevant stakeholders should be represented systematically. Fourth, there should be clear objectives for participation. Fifth, methods should be selected and tailored according to the decision-making context. Sixth, highly skilled facilitation is needed. Seventh, local and scientific knowledge should be integrated. Finally, participation needs to be institutionalised. Collectively, these key features form the foundation of a fair and just process, ensuring democratic participation and engagement with stakeholders. As a result, stakeholders are fairly and justly represented within a democratic process that empowers and encourages participation and engagement. Without this, organisations risk neglecting the nuances of stakeholder engagement and collaboration that could reveal a range of sustainable operations and practices.

Similarly, Colvin, Witt, and Lacey (2016) identify eight commonly used methods that go beyond the 'usual suspects' and permit engagement with a wider range of stakeholders (Reed et al., 2009). According to Colvin, Witt, and Lacey (2016), organisations tend to rely on a usual range of stakeholders, identified by the 'privileged' managers, and 'unconventional' stakeholders are excluded due to the managers' cognitive and institutional blind spots, especially during stakeholder identification and engagement. Therefore, the authors propose eight commonly used methods that go beyond the usual, divided into *seeking* (or bottom-up) and *creating* (or top-down) approaches. For the former, organisation managers use key information and snowballing and the media, and for the latter, managers use geographic footprint, past experiences, interests, influence, intuition, and stakeholder self-selection. By combining these approaches, organisations can identify both familiar and unfamiliar parties and better address their respective interests within the stakeholder network. Furthermore, this avoids the imposition of the managers' privileged understandings and perceptions of stakeholders; and it avoids interaction with pre-existing and divisive social structures and tensions that might undermine participation and engagement efforts.

Wood, Mitchell, Agle, and Bryan (2021) highlight that the Mitchell (1997) stakeholder framework is a descriptive model that only describes stakeholders whom managers perceive to have powerful, legitimate, and urgent claims. Thus, the stakeholders and their claims are determined according to the managers' subjective perceptions (Wood et al., 2021). However, managers might overlook noncontractual claims, which means that 'harm can be dealt to parties [*stakeholders*] who are in involuntary relationships with a company' (Wood et al., 2021, p.197).

From this perspective, Wood et al. (2021) argue that the Mitchell (1997) stakeholder framework might inadvertently fail to recognise and represent stakeholders who lack salient attributes, such as the geographically distant, vulnerable, marginalised, and voiceless. Therefore, the Mitchell (1997) stakeholder framework has only an implicit normative content. In contrast, Wood et al. (2021) argue for the promotion of fairness – as perceived by the stakeholders – and for the stakeholder relationship as a foundation for the organisation's strategy, operations, and decisions.

By engaging with stakeholders, managers develop their perceptions of stakeholders and reveal the flux in stakeholder attributes of power, legitimacy, and urgency (Wood et al., 2021). Some stakeholders may be neither salient nor recognisable or familiar at a particular point in time, but later align with other dominant and powerful stakeholders (Mitchell, 1997) and acquire

additional salient attributes, thereby changing their configuration of critical attributes (Mitchell, 1997).

According to Jones and Wicks (1999), stakeholder theory has four key principles: stakeholder relationships that affect or are affected by the organisation's operations and practices (Freeman, 1984; Clarkson, 1995); stakeholder expectations, which have an intrinsic value (Gray et al., 1996); the nature of these relationships, which mean that if certain behaviours are adopted then certain outcomes will be obtained for the organisations and their stakeholders (Mitchell et al., 1997); and managerial decision-making (Donaldson and Preston, 1995).

Based on these principles, Jones and Wicks (1999) argue against the exclusive application of either normative or instrumental-stakeholder theory, offering instead a hybrid form that they term 'convergent stakeholder theory'.[13] To satisfy stakeholders' conflicting expectations, organisations with an instrumental perspective should be 'morally grounded' (Jones and Wicks, 1999). Therefore, the authors suggest a convergent approach with a normative core to guide instrumental-strategic behaviour.

A convergent approach to stakeholder theory highlights an alternative narrative of ethical-moral behaviour, guiding organisations' strategic operations and practices and their pursuit of performance objectives, such as profit maximisation. With a normative core, this study intends to capture a wide range of stakeholders' voices and to intrinsically value all stakeholders' interests. Furthermore, via an instrumental periphery, the study considers ethical-moral operations and practices that address all stakeholders' conflicting interests, issues, and support the pursuit of the performance objectives. For these reasons, the study embraces a convergent approach to stakeholder theory, with a normative core to guide instrumental-strategic behaviour.

By adopting the Mitchell et al. (1997) stakeholder framework, this study highlights the graduation of stakeholder salience and therefore the multifaceted and interconnected relationships between organisations and their stakeholders. In this way, the study captures the graduation of stakeholder voices that might influence water-related practice in the mining industry (Gramsci, 1971). The following section introduces the Gramsci (1971) notion of cultural hegemony to explain the deployment of narratives and discourse by extractive organisations and powerful stakeholders to influence less powerful (and powerless)

[13] A convergent stakeholder theory combines normative and instrument approaches to stakeholder theory in a 'non-taxonomic' way. However, Freeman (1999), in his response, argues that normative stakeholder theory and instrumental stakeholder theory are divergent and cannot be converged.

stakeholders' perceptions, understanding, and expectations of water-related practices in the mining industry. In this way, extractive organisations and their powerful stakeholders exercise ideological leadership that cultivates the consent of the less powerful and the powerless in ways that counter their best interests.

3.2 Cultural Hegemony

This section introduces the Gramsci (1971) notion of 'hegemony' (or *dominating with consent*). It then discusses the key concept of a hegemonic network of power. It presents the ideologies (the modalities of power), discourse (instrument of power), and hegemony (product of power) and discusses the movement of power from ideology through discourse to hegemony.

3.2.1 Ideologies

In his *Prison Notebooks*, Gramsci (1971) proposes the notion of hegemony as the exercise of power through ideological leadership to dominate the masses. He explains that the ruling or dominant class exercises ideological leadership to cultivate the ideological consent of the subordinate class in society. By exercising ideological leadership, the ruling class furthers its own social interests, whilst the subordinate class ideologically consents to hegemonic power, which works against its own best interests.

According to Gramsci (1971), ideologies are modalities of power that distort forms of knowledge and understanding to serve their 'master'. In this case, the ruling class constructs and deconstructs the ideologies that reflect its social interests. These ideologies (systematic frameworks of ideas) maintain unequal social relations between the dominant and subordinate classes.

To cement its ideology, the ruling class endeavours to continuously construct and deconstruct the ideological frameworks that achieve ideologic unity in the eyes of the subordinate class. These are those ideologies that reach the status of 'common sense', 'the status quo', and 'natural'. The ruling class thus practises 'ideological framing' to construct culturally persuasive and intuitively appealing ideas that serve its own social and material interests. In this way, the ruling class achieves cultural hegemony and prevents hegemonic social struggles.

Drawing on Gramsci (1971), this study investigates whether – with its narrative of water scarcity as a natural phenomenon caused by prolonged droughts and low levels of precipitation

– the ruling class is exercising ideological leadership to construct culturally persuasive and intuitively appealing ideas that achieve ideologic unity in the eyes of the subordinate class, with the goal of furthering its own social and material interests (Shamayleh et al., 2019).

According to Shamayleh et al. (2019), the monarchy creates a reciprocal system of power with the elite[14] – including powerful tribal leaders, large commercial farmers, and influential townsmen and women. Distorted communication (such as persuasive social-cultural ideologies) enable the powerful actors to exercise ideological leadership, which cultivates the ideological consent of less powerful and powerless actors. By forming alliances and coalitions with these powerful actors, the ruling actors maintain the power of hegemonic discourse, which dictates the 'common sense' water supply-and-demand practices and solutions.

In the mining industry, extractive organisations might have a detrimental impact on stakeholders' resources, specifically the cleanliness and sanitation of their water. In response, stakeholders may demonstrate public resistance through protest movements, but this is not always the case (Furnaro, 2019). A lack of explicit contestation and opposition does not suggest a lack of impact (Ekers and Loftus, 2008). If stakeholders publicly resist and protest, they could – through legal or other means – prevent access to limited water resources (Zhang et al., 2015).

According to Furnaro (2019), studies of the mining industry have tended to focus on public expressions of resistance, protest, and movement. As a result, such studies may be overlooking the veiled hegemonic social structures of power. Furnaro (2019) emphasises that a lack of public expression of resistance should be carefully analysed and evaluated to understand stakeholders' 'consent' to unsustainable or sustainable water-related practices in the mining industry. This could allow scholars to identify inequalities in access to clean and sanitary water, which might be largely caused and legitimised by invisible and hegemonic exercise of power over vulnerable and marginalised groups.

Consequently, this thesis adopts the Gramsci (1971) notion of cultural hegemony to highlight and explain the exercise of ideological leadership by the national government and extractive organisations to cultivate stakeholders' ideological consent in the mining industry. The investigation will, first, explain the extractive organisations' exercise of ideological leadership to advance their own interests and, second, explain the stakeholders' ideological consent and legitimisation of water-related practices in the mining industry.

[14] For further explanation, please refer to Chapter Five, section 5.2.4, 'Civil Society'.

3.2.2 Dominant Discourse: Power and Consent

According to Gramsci (1971), discourse enables 'domination with consent' within the hegemonic network of power. The ruling class might deploy discourse to exercise ideological leadership to advance its own social and material interests, whilst the subordinate class ideologically consents to a hegemonic discourse that runs counter to its own interests. Thus, discourse plays a central role in the hegemonic network of power.

According to Foucault (1978), discourse is a system of knowledge claims, manifested in social relations within the hegemonic network of power. He explains that actors, with their varying resources, interests, and issues, engage in social relations that construct, deconstruct, and circulate powerful discourse within discursive conventions, otherwise known as 'social construction arenas' (Ferns and Amaeshi, 2019). A powerful discourse thereby rallies consent and reaches the status of 'common sense'. During this process, the dominant mainstream discourse might be constructing and maintaining unequal social relations within the hegemonic network of power.

For Foucault (1978, 2000), discourse is a site for the exercise of social power. The ruling class uses discursive language to exercise the ideological leadership that dictates the taken-for-granted expectations in implicit and explicit social contracts (Jahn and Brühl, 2018). Thereby, the ruling class cultivates the ideological consent of the subordinate class.

Furthermore, Foucault (2000) explains that the ruling class draws on discourse as either an instrument or a resource that constructs and maintains unequal social relations (Foucault, 2000). As an instrument, the discourse is deployed and used to gain the consent of the subordinate class. However, discourse is deployed as a resource to increase the magnitude of power and thus the stake within the hegemonic network. Foucault (2000) thus distinguishes between the power 'within' and that 'behind' the discourse.

With regard to consent, Foucault (1978) highlights that discourse manifests through complex and dynamic power relations that flow in multiple directions and on a multiplicity of levels (Foucault, 2000, 1980). A dominant discourse constructs a subject position that rallies and maintains 'consent' to unequal social relations. He explains that consent takes the form of the production, reproduction, and circulation of discourse, which are mechanisms for the exercise of power within the hegemonic network. In this case, the discourse would be attributed the status of hegemony – namely, hegemonic discourse.

To achieve the status of hegemony, discourse relies on language, which embodies and communicates experience, perceptions, and ideas. Language, as a powerful tool embedded in discourse, constructs complex and dynamic power relations, which might yield power to serve the 'master' (Laclau and Mouffe,1985). Furthermore, language plays a crucial role in social construction and cultural legitimation of hegemonic discourse (Böhm and Brei, 2008; Brei and Böhm, 2011). Thereby, language might promote a hegemonic discourse.

Influenced by Gramsci (1971), Laclau and Mouffe (1985) focus on the role of language in the exercise of dominance to gain the consent of the masses. For Laclau and Mouffe (1985), hegemonic dominance with consent is achieved through discursive language, which comprises dynamic social relations rather than a status quo. Furthermore, Laclau and Mouffe (1985) argue that hegemony entails only temporary equilibrium, or temporary hegemonic moments within a complex and shifting discursive social reality.

According to Laclau and Mouffe (1985), discourse is also a site of resistance within the hegemonic network of power and knowledge. They argue that hegemonic discourse faces a continuous struggle to maintain both dominance and consent, otherwise known as a 'power struggle'. During the power struggle, discourse faces other dominant, sanctioned, marginal, oppositional, and alternative narratives. As a result, discourse establishes alliances and coalitions with alternative dominant discourses, which furthers the scope and magnitude of power within the hegemonic network. In this way, the discourse serves to persuade oppositional, marginalised, and parallel groups of the status quo.

However, Laclau and Mouffe (1985) assume that social groups retain an equal ability to bring about social change through discursive language, thus restructuring social order. In contrast, Spivak (1994), in her seminal paper, 'Can the subaltern speak?', argues that some social groups are constrained by constructed structural and social power relations such as class, ethnicity, and gender. As a result, those social groups either are unable to bring about social change or do not possess an equal ability to do so; therefore, they are unable to make hegemonic interventions in society.

Spivak (1994) refers to these social groups who lack power, access, and validity to socio-economic and political institutions as the 'subaltern'. The subaltern are denied power by the ruling class and thus repressed or under-represented in mainstream dominant and hegemonic discourse (Spivak, 1994). Their voices are not captured in mainstream dominant and hegemonic discourse (Alawattage and Wickramasinghe, 2009; Jayasinghe and Thomas, 2009;

Lanka, Khadaroo, and Böhm, 2017), and, as a result, they struggle to raise their voices and highlight their issues. Subalterns are overlooked by organisations, which has a detrimental impact on their social wellbeing, environmental health, and economic future (Ayelazuno, 2014). The extractive organisations overlook them as legitimate stakeholders with legitimate interests (Banerjee, Maher, and Krämer, 2021) and they fail to engage with the subaltern, which would entail cooperation and collaboration (Banerjee, Maher, and Krämer, 2021).

For this reason, scholars have highlighted the unique role of contestation in raising the subaltern voices and drawing attention to their claims (Ekers and Loftus, 2008; Furnaro, 2019; Olsen, 2017). According to these scholars, stakeholders achieve saliency through contestation and opposition to unsustainable practices and operations. As a result, organisations focus on satisfying those stakeholders who possess power. However, the less powerful, who are geographically distant and struggle to make their claims, are marginalised. These vulnerable and less powerful stakeholders might depend on dominant and powerful stakeholders to further their interests (Mitchell et al., 1997). Some scholars have highlighted the unique role of the 'counter account', which permits the subalterns to raise their voices, especially with regard to social wrongs (Alawattage and Wickramasinghe, 2009; Dawkins, 2015; Jayasinghe and Thomas, 2009; Lanka, Khadaroo, and Böhm, 2017).

Gramsci (1971), Foucault (1978), and Laclau and Mouffe (1985) focus on the relationship between ideology, discourse, and hegemony. This study draws on their work, first, to identify whether the water discourse is a resource or an instrument, and second, to identify discourse alliances and coalitions that further the scope and magnitude of the power within the hegemonic network.

This study also draws on the work of Spivak (1994), which focuses on raising the voices of the subaltern against unequal social relations. This study intends to highlight the hegemonic discourse that might be submerging the subaltern's narratives and discourse.

3.2.3 Hegemony and Dominance

This section explains the distinction between hegemony and dominance, which is relevant to the notion of consent. In hegemony, the notion of consent entails an 'ideological' consensus embedded within the sub-consciousness for the long-term. Conversely, dominance is based on 'coerced' consensus, which is embedded within the consciousness in the short-term.

From this perspective, organisations might deploy the hegemonic discourse to exercise ideological leadership in the mining industry and obtain the ideological consent of their stakeholders to cognitively legitimise (un)sustainable water-related practices. In this way, the organisations reduce the physical water risk that would obstruct their extractive and mining operations in the long-term.

To differentiate between hegemony and dominance, this study reflects on the various scholars who have contributed to the field. These include Gramsci (1971), Simons (1982), Spivak (1994), and Guha (1997). According to Gramsci (1971), two key concepts determine the integration of individuals into a social network, namely *hegemony* and *dominance*. However, these concepts differ in terms of the exercise of power; for instance, hegemony uses ideological leadership and obtains passive consent (Gramsci, 1971), allowing the ruling class to exercise hegemonic subordination of the masses. Conversely, dominance uses coercive power to obtain coerced consent (Guha, 1997), and the ruling class exercises dominance to oppress the masses. In both cases, the dominant wield power over the subordinate masses, regardless of the mechanism by which consent is obtained.

In *Prison Notebooks*, Gramsci (1971) deploys the terms 'hegemony' and 'leadership' interchangeably, as remarked by Roger Simons (1982). According to Simons (1982), Gramsci's conceptualisation of hegemony entails the ideological leadership of the ruling class and the obtaining of ideological consent from the working-class.

However, Simons (1982) highlights that Gramsci differentiates between dominance and hegemony. According to Gramsci, hegemony does not imply hard coercion, such as military force. Rather, hegemony establishes dominance through the use of soft coercion to obtain consent (namely, persuasion). In other words, hegemony establishes dominance by gaining consent to ideological leadership (Simon, 2015).

Guha (1997) takes a different perspective on hegemony and dominance, derived from the colonial history of India. According to Guha (1997), these two concepts describe the exercise of power to maintain inequality between the rulers and the ruled, specifically those of different classes, strata, and levels. However, dominance cannot exist without subordination, and vice versa. Therefore, Guha (1997) asserts an interdependent relationship between dominance and subordination. Furthermore, Guha (1997) refers to the contingent relationship between the sub-components of dominance and subordination, historically. He explains that dominance consists of coercion and persuasion, whereas subordination consists of collaboration and resistance.

In the configuration of power, Guha (1997) asserts that hegemony occurs when persuasion outweighs coercion. Conversely, dominance occurs when coercion outweighs persuasion. Importantly, Guha (1997) highlights the historical presence of coercion in hegemony, arguing that hegemony establishes dominance through persuasion and elements of coercion. Thus, Guha (1997) does not treat hegemony and dominance as synonymous.

With regard to subordination, Guha (1997, p.35) refers to the term 'subaltern' as 'a name for the general attribute of subordination in South Asian society whether this is expressed in terms of class, caste, age, gender and office or in any other way'. According to Guha (1997), subordination takes two forms: collaboration and resistance. Regarding the former, hegemony establishes a dominant state through collaboration with the elite; in other words, hegemony establishes dominance by obtaining consent to ideological leadership (Guha, 1997). Regarding the latter, due to resistance by the subaltern, hegemony entails a prolonged 'power struggle' to maintain dominance. If the subaltern groups recognise their oppression and subordination, the ruling class's hegemony will be dissembled and a new hegemonic position will crystallise, or, alternatively, dominance will be established through hard coercion, such as the employment of military force (Guha, 1997).

In the context of sustainability, Böhm and Brei (2008) focus on the hegemony of the development discourse, which establishes dominance and ensures the subordination of the masses. Böhm and Brei (2008) investigated the role of marketing language in producing a hegemonic discourse in the Pampas in the South American region. The pulp and paper industries articulate their socio-economic development opportunities, whilst their detrimental and devastating impacts on local communities and their livelihoods are rendered invisible by marketing language and discursive practices. Böhm and Brei (2008) highlight the crucial role played by discourse in social construction and cultural legitimation of controversial development discourse.

Similarly, Brei and Böhm (2011) focus on the hegemony of the corporate social reasonability discourse, specifically with respect to 'ethical bottled water'. According to Brei and Böhm (2011), organisations use marketing language as a tool to influence their customers through the management of social-cultural perceptions. By so doing, organisations produce more ethical and socially responsible perceptions of their products, rather than delivering real, sustainable, and transformative change.

Likewise, Marston and Perreault (2017) drew on the Gramsci (1971) concept of hegemony to investigate the dominance in Bolivia of small mining and extractive operations, despite their detrimental impact on the nation's socio-economic and environmental development. The authors found that state governments and organisations collaborate to achieve domination by exercising ideological leadership that establishes extractive and mining operations as 'common sense' and therefore essential for the socio-economic development of Bolivia. Marston and Perreault (2017) point to the alliances and coalitions between powerful actors, who use hegemonic power to establish more stable resource regimes.

Banerjee, Maher, and Krämer (2021) also drew on the Gramsci (1971) concept of hegemony to investigate the subaltern's resistance to and engagement with hegemonic power structure. The authors found that resistance entailed continuous negotiation between the hegemonic and counter-hegemonic forces to contests the power, knowledge, and cultural relations within the hegemonic structure and network. Banerjee, Maher, and Krämer (2021) suggest that collective and organised resistance would permit the subalterns to voice their interests through rightful resistance, lawfare, and political society.

In this respect, this study takes into account the power of organisations to influence the adoption of sustainable goals, targets, and practices (voluntary or mandatory), especially those that work against their own interests. National governments and extractive organisations may establish alliances or coalitions to exercise cultural hegemony and advance their interests. This allows them to dictate (un)sustainable water-related practices in the mining industry and elicit the consent of the subalterns (such as local-community members) to legitimise these practices.

3.3 Convergement of Theoretical Lenses

To investigate the use of (un)sustainable water-related practices by extractive organisations, this study applies two theoretical lenses, which together comprise an integrated and multifaceted theoretical framework reflecting the complexity of the water issue. First, the Mitchell et al. (1997) stakeholder framework captures the discourse of extractive organisations and their relevant stakeholders, covering their perceptions, understanding, and challenges regarding cleaner water and sanitation in Jordan (RQ1 and RQ2). Second, the Gramsci (1971) notion of cultural hegemony provides clarity on the exercise of ideological leadership by extractive organisations and their powerful stakeholders to advance their interests and obtain the ideological consent of less powerful and powerless stakeholders to (un)sustainable water-related practices in the mining industry. Jointly, these works provide a theoretical framework that integrates multiple voices at the micro, meso, and macro levels. This study reveals the

impact of the perceptions, narratives, and discourses of extractive organisations and their stakeholders on efforts to fulfil SDG 6 in Jordan (RQ3).

Drawing on stakeholder theory, this study explores the discourse of extractive organisations and their relevant stakeholders, which comprises their perceptions, understanding, and expectations of cleaner water and sanitation. To investigate this discourse, the study employs the Mitchell et al. (1997) stakeholder framework to answer the following research questions:

1. *What might be the challenges for the national government and extractive organisations regarding access to clean and sanitary water in Jordan?*
2. *What might be the challenges for relevant stakeholders regarding access to clean and sanitary water in Jordan?*

In their work, Mitchell et al. (1997) draw upon the Dahl (1957) definition and description of power, which states that, 'A has power over B to the extent that he can get B to do something B would otherwise not do' (Dahl, 1957, p. 202). The Dahl (1957) definition implies that the ruling classes exercise power to establish dominance and ensure the subordination of the masses (Guha, 1997), which, in turn, suggests an oppressive force that shapes the social hierarchy, including the positions of the dominant and subordinate classes.

Influenced by Dahl (1957), Mitchell et al. (1997) identify different forms of power exercised by salient stakeholders: namely, coercive, utilitarian, and normative. Coercive power is the power to influence an organisation through physical resources of force, violence, and restraint. With utilitarian power, stakeholders can influence organisations by restricting their access to material or financial resources. Normative power enables stakeholders to use symbolic resources to influence the organisations.

In the context under study, extractive organisations and their salient stakeholders might exercise different forms of oppressive power to influence less salient stakeholders and thereby address their own interests. This exertion of power might include coerced dominance, hegemonic subordination, or both (Gramsci, 1971). Therefore, the study embraces the Mitchell et al. (1997) conceptualisation of power, as drawn from Dahl (1957), which emphasises the dynamic, multifaceted power relations between organisations and their stakeholders.

Accordingly, Dawkins (2015) highlights the 'power asymmetry' between organisations and their stakeholders and proposes that this power asymmetry might be fixing the hegemonic discourse. Dawkins (2015) argues for a 'counter account' to corporate hegemony, suggesting an alternative framing of stakeholder participation and engagement that recognises the power

asymmetries in discursive arenas and harnesses discord, rather than seeking to reduce or eliminate it. For instance, Dawkins (2015) suggests that collective action is a mechanism that permits stakeholders to voice their interests, which is especially pertinent to less powerful stakeholders, who otherwise lack the pragmatic means to do so.

Adopting the Mitchell et al. (1997) stakeholder framework, this study focuses on the understanding and perceptions of the extractive organisations and the national government regarding SDG 6. Furthermore, the study stresses the understanding and perceptions of both salient and less salient stakeholders regarding extractive organisations' impact on the cleanliness and sanitation of their water resources. Thus, the study emphasises the discourse of extractive organisations (RQ1) and their stakeholders (RQ2) that legitimises water-related practices in the mining industry (Deegan, 2002, 2019; Suchman, 1995)

In their work, Mitchell et al. (1997) also draw upon the Suchman (1995) notion of legitimacy, which entails organisations satisfying those stakeholders who have legitimate claims, as stakeholders' contestation, withdrawal, or opposition can endanger the organisations' operations and practices, long-term profit maximisation, and even survival (Deegan et al., 2002). For this reason, organisations use socio-economic and environmental disclosure to respond to stakeholders (with legitimate claims) who raise their voices and assert their interests. However, some stakeholders – such as those who lack power, are geographically distant, and lack direct and legitimate claims – struggle to assert their interests (Deegan, 2019).

In the mining industry, extractive organisations and their stakeholders abide by a social contract, which comprises the multiple stakeholders' implicit and explicit expectations of water-related practices (Deegan et al., 2002). As a result, organisations face the challenge of satisfying conflicting interests, which can mean satisfying one stakeholder at the expense of another (Mutti et al., 2012). Extractive organisations typically choose to satisfy the expectations of their more powerful stakeholders, which can legitimise unsustainable or sustainable water-related practices in the mining industry. In this way, the extractive organisations earn an SLO and access to limited natural resources. Without an SLO, they would risk endangering their operations and practices, long-term profit maximisation, and even survival.

According to Beske, Haustein, and Lorson (2020), organisations focus on two areas: first, their stakeholders and their expectations, interests, and issues. For this purpose, organisations report detailed information identifying relevant stakeholders, demonstrating both commitment to and

engagement with specific powerful stakeholder interests and ensuring their long-term profit maximisation and survival. Second, organisations are concerned with demonstrating their conformity with stakeholders' implicit and explicit expectations, as identified within the social contract. They also seek to counter negative public opinions that might threaten the legitimacy of their operations and practices in the eyes of their stakeholders. For this purpose, organisations tend to disclose less detailed information that merely demonstrates a commitment to broader societal issues.

Organisations might also use socio-economic and environmental disclosure to influence the (implicit and explicit) expectations of less powerful and powerless stakeholders within the social contract (Deegan et al., 2002; Deegan, 2019). In this way, the organisations, first, attain the 'hegemonic' power to influence and thereby dominate their stakeholder's perceptions of their operation and practices, and second, strategically manage stakeholders' expectations to counter negative public opinions that threaten their operations and practices. Through the diffusion of their discourse, organisations dictate what is 'common sense' and to be taken-for-granted.

From this perspective, it is argued that organisations use voluntary discourse to serve their material or social interests (Gramsci, 1971). Specifically, organisations deploy narratives and discourse to dictate what constitutes common sense in the eyes of their stakeholders. As a result, they are able to dictate stakeholders' implicit and explicit expectations of water-related practices. For this reason, this study considers the role of hegemony through the lens of the Gramsci (1971) notion of cultural hegemony, which reveals extractive organisations' exercise of ideological leadership to cultivate the ideological consent of their stakeholders and the cognitive legitimacy of unsustainable or sustainable practices in the mining industry.

To advance the hegemonic discourse, extractive organisations form alliances and coalitions with salient stakeholders, and this furthers the scope and magnitude of their power within the hegemonic network. The salient stakeholders elicit the consent of less salient stakeholders to legitimise unsustainable or sustainable water-related practices in the mining industry. By doing so, extractive organisations and their salient stakeholders address their issues. Therefore, this study adopts the Gramsci (1971) notion of cultural hegemony to answer the following question:

3. *Are the SDG 6 targets being achieved in Jordan? Why or why not?*

This study draws on the Mitchell et al. (1997) stakeholder framework, which prioritises and differentiates between stakeholders based on three salient attributes of their claims, namely

their power, legitimacy, and urgency. However, the Gramsci (1971) concept of cultural hegemony prioritises and differentiates between stakeholders based only on the power of their claims – namely, subordination and dominance. Jointly, these works provide a theoretical framework that integrates multiple voices at the micro, meso, and macro levels. To elucidate, Mitchell et al. (1997) focus on individual and social discourse, such as female narratives and the narratives of local communities, whilst Gramsci (1971) focuses on the taken-for-granted hegemonic discourse, such as the national discourse, which influences individual and social actions and practices. Figure 3.3 below provides an illustration of these theoretical lenses.

Figure 3.3 Integrated and Multifaceted Theoretical Framework Embracing Two Theoretical Lenses

In this way, this study proposes a theoretical framework with a normative core that guides organisations' strategic operations and practices and supports the pursuit of their instrumental performance objectives. Within its normative core**,** the study captures a wide range of stakeholder voices and their interests, hence enabling an alternative narrative of ethical-moral behaviour that contributes towards gaining, managing, and maintaining legitimacy and even correcting illegitimate actions.

By aggregating multiple perspectives, this study illuminates the hegemonic discourse that legitimises water-related practices in the mining industry, thereby providing evidence that the ruling class may deploy instruments of hegemonic power to construct and maintain unequal social relations, specifically with regard to cleaner water and sanitation.

The Mitchell et al. (1997) stakeholder framework is applied here because it captures the dynamic and multifaceted interactions between organisations and both salient and less salient

stakeholders and differentiates between stakeholders' claims, specifically in terms of their narratives and discourses. As illustrated in Figure 3.4, the Mitchell et al. (1997) framework facilitates the classification and description of the stakeholder discourses that influence organisational performance, such as water-related practices.

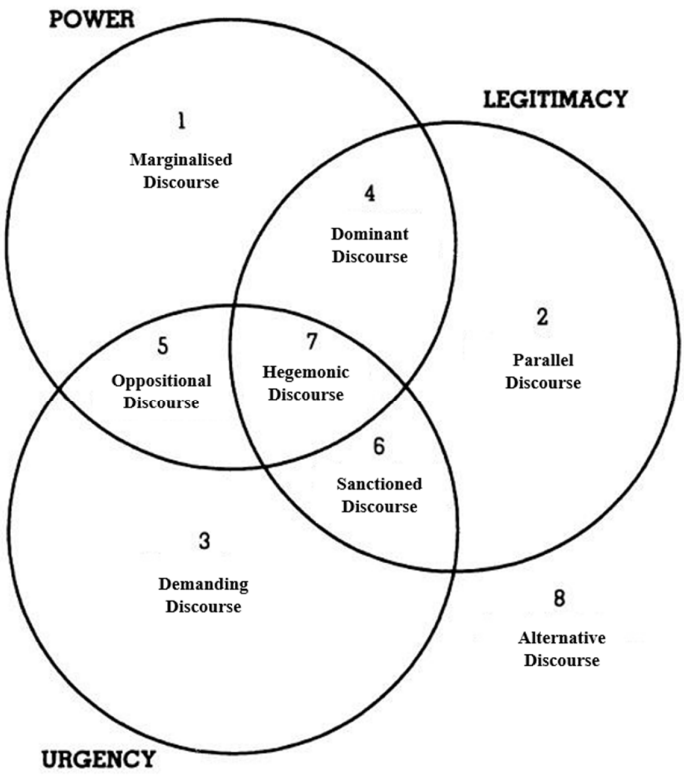

Figure 3.4 Typology of Stakeholder Discourse, adapted from the Mitchell (1997) Stakeholder Framework

According to Table 3.2, stakeholders' discourse might have one or more of the three salient claims. Viewing the stakeholders' claims in combination, this study reveals three broad classifications and eight narrow descriptions of stakeholders (in declining order of priority): definitive, dependent, dangerous, dominant, demanding, discretionary, dormant, and non-stakeholder. Furthermore, the study reveals eight narrow descriptions of stakeholders' discourse (in declining order of priority): hegemonic, sanctioned, oppositional, dominant, demanding, parallel, marginalised, and alternative. Hence, the study captures the various salient and less salient stakeholder discourses that influence organisations' operations and practices.

Table 3.2 Typology of Stakeholder Discourse, adapted from the Mitchell (1997) Stakeholder Framework

Broad Stakeholder Classification	Narrow-Stakeholder Classification	Description of the Stakeholder 'Salient' Claim Within the Discourse			Discourse
		Power	Legitimacy	Urgency	
Non-stakeholder	Potential	Possessing **none of the attributes.**			Alternative
Latent	Dormant	Possesses the attribute of **power**, although unused. Examples are those who have a loaded gun (coercive), who can spend a lot of money (utilitarian), or who can command the attention of the media (normative).			Marginalised
	Discretionary	Possesses the attribute of **legitimacy**. Examples are non-profit organisations that have a legitimate relationship with the organisations.			Parallel
	Demanding	Possesses the attribute of **urgency**. These are the 'mosquitoes buzzing in the ears'.			Demanding
Expectant	Dominant	Possesses the attributes of **power and legitimacy.**			Dominant
	Dangerous	Possesses the attributes of **power and urgency**. They are coercive and possibly violent, making the stakeholder 'dangerous' to the firm.			Oppositional
	Dependent	Possesses the attributes of **legitimacy and urgency** but lacks the power to act. These stakeholders have to rely on the benevolence and voluntarism of powerful stakeholders to carry out their will.			Sanctioned
Stakeholder	Definitive	The combination of all **three attributes**, which managers prioritise.			Hegemonic

To interrogate the hegemonic rhetoric, this study adapts the Fairclough (2001) tri-dimensional framework that demonstrates the inter-dependency of a text, discursive practice, and social

practice. In Figure 3.5 below, the circles represent the salient and less salient stakeholders within the stakeholder network. The size of the circle represents the power held by the stakeholders: the larger the circle, the more powerful the stakeholders' claims. This power can be coercive, utilitarian, or normative, and it influences the organisations' water-related practices.

Furthermore, the lines represent the legitimacy and urgency of the claims. They show the unidirectional movement of the claims, indicating whether they support, oppose, or are indifferent to the hegemonic discourse. In this way, the study captures a wide range of the stakeholder voices that are influencing organisations' water-related practices in the mining industry

Collectively, the circles and lines represent the stakeholder network that operates within a hegemonic network of power. Within this network, stakeholders articulate and distribute salient claims through their discourse and narratives, socially constructing meaning within the discursive fields and domains otherwise known as 'discursive discourse arenas' (Ferns and Amaeshi, 2019). These include international summits, board of directors (BOD) meetings, city council assemblies, and family gatherings.

As shown in Figure 3.5, the discourse arena encompasses three discursive fields or domains: descriptive text, discourse practices, and social-cultural practices. Within the discursive discourse arena, organisations and salient stakeholders exercise ideological leadership to obtain the ideological consent of less salient stakeholders. By doing so, they secure positions of power within the hegemonic network and they 'fix' meaning. However, they then struggle to maintain this dominance because of the dominant oppositional or demanding narratives in the discursive discourse arena.

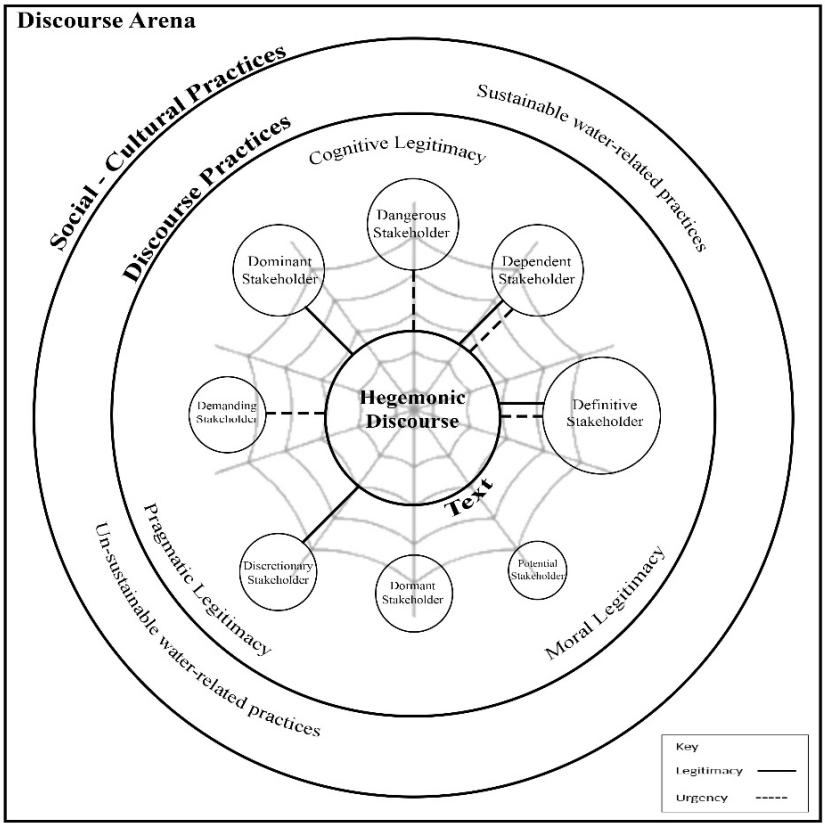

Figure 3.5 From Discourse to Practice Framework, adapted from the Fairclough (2001) Tri-Dimensional Framework

Within the text field, extractive organisations and their salient stakeholders exercise ideological leadership by articulating and distributing the dominant discourse, which encompasses powerful, legitimate, and urgent claims. The extractive organisations and their salient stakeholders endeavour to fix the hegemonic discourse, although they face power struggles from other stakeholders' dominant, sanctioned, marginal, oppositional or alternative narratives. For instance, definitive stakeholders articulate and distribute the dominant discourse, whilst dangerous stakeholders articulate and distribute the oppositional discourse. By exercising ideological leadership, extractive organisations and their salient stakeholders cultivate the less salient stakeholders' ideological consent to either unsustainable or sustainable water-related practices in the mining industry.

Within the field of discourse, organisations 'fix' stakeholders' perceptions, understanding, and expectations of water-related practices and thus their own accountability for cleaner water and sanitation. This then facilitates stakeholders' ideological consent to the dominant discourse, which dictates the status quo for water-related practices in the mining industry. In this way,

stakeholders cognitively legitimise unsustainable or sustainable practices in the mining industry.

Within the social-cultural field, extractive organisations and their salient stakeholders fix the dominant discourse, which constructs the hegemonic discourse. Therefore, the dominant discourse cognitively legitimises the hegemonic discourse and the water-related practices in the mining industry. Consequently, discourse becomes practice, which furthers the interests of the extractive organisations and their salient stakeholders.

3.4 Summary

This chapter presented the Gramsci (1971) notion of cultural hegemony, as well as the Mitchell et al. (1997) stakeholder framework that emerged from stakeholder theory. It then converged these two theoretical lenses to explain the phenomena under study.

In Jordan, extractive organisations use the limited water resources available locally to sustain their operations and ensure their own survival (Adiansyah et al., 2015; Gunson et al., 2012, 2010; Liphadzi and Vermaak, 2015; Mudd, 2010, 2007; Northey et al., 2019, 2016). Meanwhile, stakeholders suffer the detrimental impacts of this, including the consumption, contamination, and loss of their limited water resources (al Rawashdeh et al., 2016). Whilst stakeholders might be expected to demonstrate public resistance, protest, and movement in response to this, in practice, they withdraw from public expressions of resistance and contestation, thereby legitimising these water-related practices.

Drawing on the Mitchell et al. (1997) stakeholder framework, this study captures the following: first, the understanding of extractive organisations and their relevant stakeholders, particularly regarding cleaner water and sanitation; second, the perceptions and understanding of both highly salient and less salient stakeholders regarding extractive organisations' impact on the cleanliness and sanitation of the water resources; and third, the multifaceted and interconnected relationship between extractive organisations and their stakeholders, including relationships with local communities (Freeman, 1984).

According to Mitchell et al. (1997), managerial perceptions determine the salience of stakeholders' claims, specifically in relation to their power, legitimacy, and urgency. In response, organisations allocate capital and resources to satisfying highly salient stakeholders, which might influence less salient stakeholders to legitimise certain water-related practices.

By adopting the Mitchell et al. (1997) stakeholder framework, this study highlights a graduation of stakeholder salience and the multifaceted and interconnected relationships between organisations and their stakeholders. In this way, this study captures the graduation of salient stakeholder voices that might influence water-related practice in the mining industry.

In the mining industry, extractive organisations and their stakeholders abide by a social contract that entails stakeholders' implicit and explicit expectations of water-related practices (Deegan et al., 2002; Jahn and Brühl, 2018; Scott, 1995). When abiding by this social contract, organisations satisfy a broad range of stakeholder expectations, thereby earning themselves an SLO and access to limited natural resources. In this way, extractive organisations sustain their operations and practices in the mining industry.

If organisations fail to abide by the social contract, however, they jeopardise their long-term profit maximisation and threaten their survival (Pereira Eugénio et al., 2013). To counter this threat, organisations deploy narratives and discourse to influence stakeholders' perceptions, understanding, and expectations of water-related practices. The organisations' deployment of their discourse essentially dictates what is 'common sense', the 'status quo', and 'natural' practice in the mining industry. Thereby, extractive organisations are able to cultivate stakeholders' ideological consent to practices that might counter the stakeholders' best interests.

This study draws on the Gramsci (1971) notion of cultural hegemony to shed light on extractive organisations' exercise of ideological leadership to cultivate stakeholders' ideological consent. With this practice, extractive organisations advance their interests, legitimise their operations and practices, earn an SLO, and protect their access limited natural resources. To further their hegemonic power, extractive organisations might form alliances and coalitions with powerful stakeholders to elicit the consent of less powerful stakeholders to legitimise certain water-related practices in the mining industry.

However, in Jordan, the monarchy holds and exercises power and guides the national government (both parliament and ministries). The monarchical structure uses a variety of powerful tools to shape, sanction, block, and resist policies and regulations. According to Olsen (2017), the state has the power to limit or expand the managerial perceptions of stakeholders that condition corporate organisations' transactions and engagement with these stakeholders. However, this study argues that corporate organisations also hold and exercise hegemonic power to advance their interests in the mining industry, whilst 'subalterns' give ideological

consent to the hegemonic power that counters their own best interests. The Gramsci (1971) notion of cultural hegemony captures the hegemonic network of power in a monarchical context such as Jordan.

The choice of theories in this study was guided by an empirically driven, inductive approach that focuses on findings reflecting elements, features, and patterns similar to those in pre-existing theory. In this respect, the study embraces a theory-matching approach that highlights patterns of similarity between the findings and theories in the study (Barratt et al., 2011). By embracing this approach, the study ensures the rigour of its understanding and explanation, as well as externally validating its findings (Zorzini et al., 2015). Moreover, the study avoids the theoretical bias that might skew explanations of results through a theoretical lens (Zorzini et al., 2015).

However, Zorzini et al. (2015) caution against embracing a theory-matching approach, due to its lack of explanatory power. In response to this concern, it is argued here that such an approach can yield rich insights and a better understanding of the descriptive-discursive data and findings, which are extremely relevant in themselves. For example, if extractive organisations were to adopt sustainable water-related practices derived from stakeholder engagement and collaboration in the mining industry, they would be supporting national efforts to attain SDG 6 in Jordan.

Furthermore, Zorzini et al. (2015) cautions about conflicting explanations, as different theoretical lenses have different underpinning assumptions and epistemological and ontological grounds. However, in the context of this study, the employment of the different theoretical lenses prevents conflicting explanations of the phenomena. For example, the Mitchell et al. (1997) stakeholder framework rests on the notion that organisations focus on the stakeholder claims that exhibit attributes of power, legitimacy, and urgency. Accordingly, this theoretical lens focuses on individuals' discourse, as well as their influence on social actions and practices. Meanwhile, the Gramsci (1971) concept of cultural hegemony suggests that social-cultural discourse is used to 'dominate with consent'. That is, the theoretical lens focuses on the social discourse that influences individuals' actions and practices. The study is therefore able to highlight multiple voices at the micro, meso, and macro levels, as well as multifaceted perspectives of the phenomena.

In the following chapters, the study employs these theoretical lenses to address the research questions, utilising the selected methodology and methods (Chapter Four, 'Methodology').

Subsequently, the two theoretical lenses will guide the analyses in the empirical chapters (Chapters Five, Six, and Seven on secondary and primary data analysis).

Chapter Four: Methodology and Methods

Introduction

This chapter describes the methodological approach of this thesis. It begins with the research paradigm, specifically the ontological and epistemological underpinning of the research methodology. The chapter then presents the research design, followed by the case study, and introduces the data-collection and -analysis methods. Finally, the chapter discusses the concepts of reliability, validity, reflexivity, generalisability, and bias in relation to the current research.

This study investigates the challenges of accessing clean and sanitary water, as seen from the perspective of extractive organisations and their relevant stakeholders in Jordan, thereby bringing to light the challenges that might influence efforts towards the fulfilment of SDG 6 in Jordan.

For Jordan, water reflects a complex and multifaceted reality, with sustainability issues related to cleaner water and sanitation touching on multiple stakeholder realities. Therefore, this study examines the cognitive ideologies, perceptions, and opinions of extractive organisations and their relevant stakeholders. For this purpose, it adopts an inductive methodological approach and conducts explanatory and qualitative analysis.

4.1 Research Overview

The research aim and objectives guide the strategy selected to integrate different components of the research in a coherent and logical manner, thereby ensuring the research problem is effectively addressed (de Vaus, 2001). According to Creswell (2009), the research methodology justifies the use of particular research methods. The methodological approach also denotes the philosophical position of the study. Figure 4.1 below illustrates the elements comprising the research design and based on the selected research paradigm.

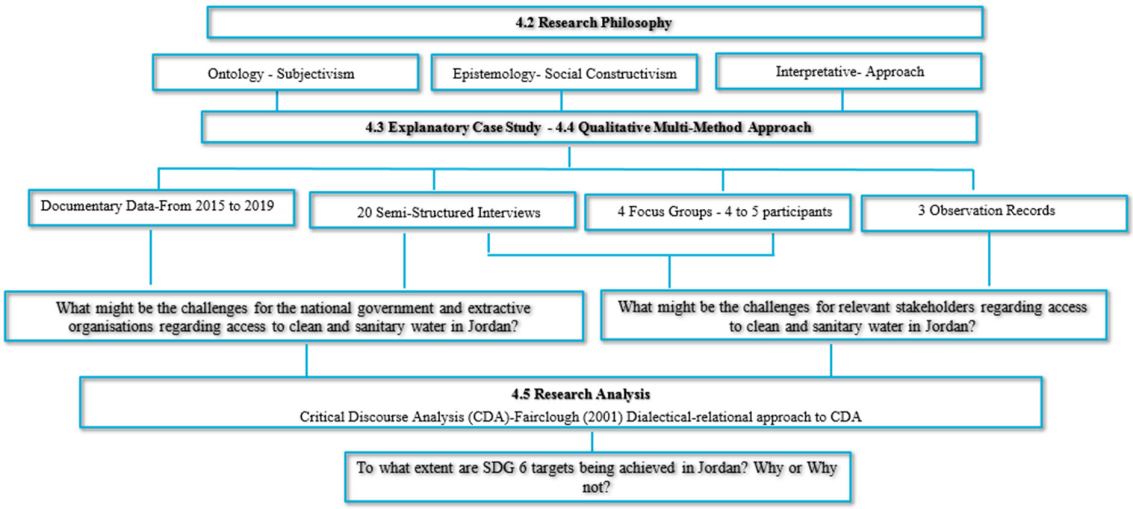

Figure 4.1 Research Paradigm

4.2 Research Philosophy

The research philosophy incorporates ontology and epistemology, and these determined the research methodology (Burrell and Morgan, 1979; Creswell, 2003; Guba and Lincoln, 1982; Moon and Blackman, 2014). From an ontological perspective, the study embraces subjectivism because organisations interact and engage with a multiplicity of stakeholders, who have various understandings and perceptions of sustainable mining, water sustainability, and SDG 6, due to the differences in their cognitive frameworks and social realities.

Subjectivism investigates knowledge through human perceptions of reality, thus grasping the interior rather than exterior reality (Crotty, 1998; Guba et al., 1997; Moon and Blackman, 2014). To capture human perceptions, this study relies on the narration of reality, specifically the articulation of narratives and discourses. For instance, stakeholders might stress specific dimensions of sustainability as particularly important according to their own interests, but those expectations are themselves defined by cognitive frameworks and social power relations. Therefore, when stakeholders recount their experiences, multiple and diverse social realities emerge.

Furthermore, subjectivism embraces nuances of meaning and understanding within a specific research context (Guba et al., 1997) and provides the opportunity to transcend the physical-material reality (Myers, 2009). For instance, operational managers have technical water knowledge and expertise at the industrial level (Azapagic 2004), whilst women have spiritual knowledge and domestic expertise at the local-community level (Kim et al., 2013). However, behind these findings, there might be other hidden social realities – such as inequitable

distribution of water resources – that could be uncovered through an interpretation of stakeholders' narratives and discourses.

Moreover, at each stage, organisations' operations and practices involve increases in stakeholder interactions in terms of scale and complexity, thus producing complex interrelationships between stakeholders – including unforeseen stakeholders (Boiral and Heras-Saizarbitoria, 2017; Jawahar and McLaughlin, 2001). Stakeholders might have convergent or divergent ideas and beliefs regarding water sustainability that are linked to their socio-economic and environmental realities. Therefore, through its embrace of subjectivism, the study highlights contextual interpretations and applications of SDG 6 in Jordan.

Consistent with a subjective ontology, this study embraces a social-constructionist epistemology, which leads to an interpretive approach (Berger and Luckmann, 1966). As the study focuses on a socially constructed representation of reality (specifically from the perspective of extractive organisations and their stakeholders), the researcher embraces the interpretive assumption that social actors' 'access to reality is only through social constructions such as language, consciousness, shared meanings, and instruments' (Myers, 2009; see also: Berger and Luckmann, 1966; Burrell and Morgan, 1979; Ponterotto, 2005).

As the study attempts to understand the interpretation (social construction) of social actors concerning water sustainability, inductive reasoning was deemed an appropriate approach (Jayaram and Avittathur, 2015; Kirchoff et al., 2016; Signori et al., 2015). In particular, the interpretive (social constructionist) approach allowed the investigation of the extractive organisation and multi-stakeholder perspectives, particularly those of challenges regarding access to clean and sanitary water in Jordan. Therefore, this study embraces subjectivism as its ontological position, a social-constructionist epistemology, and an interpretive approach to exploring the phenomena.

The study thus employed qualitative methods, which are most suitable for investigating individual subjects' narratives and discourse to reveal knowledge, experience, opinions, interests, and issues (Moon and Blackman, 2014). These qualitative methods align with social constructionism and an interpretive approach that emphasises 'contextual' validity (Moon and Blackman, 2014). This facilitated the gathering of richer contextual data, which are crucial for promoting knowledge and theory development in a dynamic-complex environment (Bryman and Bell, 2003). Moreover, it could be argued that **one of the main advantages of qualitative research** is that it allows flexibility and adaptation during fieldwork (Bryman and Bell, 2003).

An example in the context of this study was the ability to include unforeseen stakeholders, such as Bedouins, who were identified as relevant stakeholders during data collection.

However, critics have voiced concerns about the credibility and trustworthiness of knowledge acquired through such research (Bryman and Bell, 2003; Guba et al., 1997), including studies that rely on local-community narratives and discourses. Scholars have questioned the appropriateness, reliability, replicability, and validity of such knowledge, particularly when derived from studies that embrace an interpretive (social constructionist) approach (Bryman and Bell, 2003; Guba et al., 1997).

Interpretivism accounts for the construction of multiple realities, but these might be incapable of reflecting the 'truth' within a phenomenon (Merkl-Davies et al., 2011). Evidence suggests that such concerns and criticism can be addressed by embracing a subjective ontology that adopts social-constructionist epistemology, as well as an interpretive approach to the phenomena (Esteves, 2008; Fonseca et al., 2014; Jia et al., 2015; Prno, 2013; Ranängen and Lindman, 2017). Studies have demonstrated that the adopted approach can be adequate and effective when based on the triangulation of qualitative research methods (Golafshani, 2003), such as interviews, focus groups, and observations. Such studies establish an audit trail comprising records, transcripts, and responses. Furthermore, they systematically collect, analyse, and interpret the data. As a result, multiple realities are brought to the surface to construct a single truth regarding the phenomenon. Please refer to section 4.6 for further discussion of this.

To address these concerns, this study combines multiple perceptions on a single, specific subject: water sustainability. By combining multiple perceptions, the study is able to identify and recognise patterns that might reflect credible and trustworthy knowledge about the phenomena. Although the knowledge obtained might not be credible and trustworthy *per se* (for example, local communities might miscalculate the impact of refugees' impact on water resources), the recollection of the narratives and discourses will reveal the construction of collective social realities.

Hence, the study embraces subjectivism as its ontological position, a social-constructionist epistemology, and an interpretive approach to the phenomena. The research philosophy permits the interpretation of the phenomena through inductive methodical approaches that explore subjective meanings and offer an interpretation of multi-stakeholder perspectives.

4.3 Research Approach: A Case Study of Water Sustainability in the Jordanian Mineral-Mining Industry

The research approach reflects the interconnection between ontology and epistemology, as well as the methods of collecting and analysing data (Bryman et al., 2008; Saunders et al., 2008). It is a systematic guideline that provides direction to address the research aims, objectives, and questions (Singleton and Straits, 2005). In this respect, the research approach can be tailored to meet descriptive, exploratory and explanatory objectives (Yin, 2009). Saunders, Lewis, and Thornhill (2008) identify seven research strategies: grounded theory, experiments, surveys, case study, action research, ethnography, and archival research. Multiple methods can be used, depending on the nature, purpose, and philosophy of the research (Brewer and Hunter, 1989).

Multiple scholars have adopted a case study strategy to investigate sustainable practices in the mining industry, especially in relation to socio-economic and environmental practices (al Rawashdeh et al., 2016; Dogaru et al., 2009; Prno, 2013). In this research field, a case study strategy usually involves organisations extracting diverse energy, metallic, construction, and industrial minerals. As organisations extract different minerals, they employ different extractive and mining practices (Azapagic, 2004) and therefore have different impacts on stakeholders' socio-economic and environmental conditions (Azapagic, 2004). Previous studies have adopted case study strategies that focus on different extractive and mining industries (e.g., energy, metallic, construction, minerals) as the units of analysis within a country, region, or city. Hence, these studies have brought to the surface multiple contextual practices employed by extractive organisations in the mining industry.

According to Yin (2009, p.1), two conditions determine the appropriateness of a case study: the type of research questions and the perspective of focus (e.g., historical or contemporary). A case study strategy is suitable for studies that ask explanatory research questions (Yin, 2009). This study explores water sustainability practices in water-stressed, lower-middle income countries, with a focus on the Jordanian mineral-mining industry. In particular, the research questions explore the 'what' and the 'why' surrounding the adoption (or non-adoption) of sustainable water-related practices by engaging with extractive organisations and their stakeholders. The 'what' are the challenges regarding access to clean and sanitary water from the perspective of the extractive organisations and their relevant stakeholders in Jordan. The 'why' are the reasons that extractive organisations and their stakeholders provide to justify these challenges. Therefore, the research questions focus on gaining explanatory insights by

investigating the phenomena. They seek to provide explanations for the practices that shape water-related practices in the mining industry.

Furthermore, this study investigates a historical-contemporary issue, which extends from the Brundtland report (1987) conceptualisation of SD to the publication in 2015 of Agenda 2030, underpinned by the SDGs. However, it also focuses on the contemporary understanding of sustainability, namely the 2030 Agenda SDGs. Therefore, the study employs contemporary data which permit the comparison of contemporary realities. For example, organisations' written documentation is explored, alongside stakeholder interviews and focus groups conducted at the present time. This range of contemporary data permits cross-referencing to confirm the credibility of the realities described.

The study embraces a cross-sectional case study design, which entails investigating phenomena within a specific time horizon (Saunders et al., 2008). In 2015, the UN set 17 SDGs for the achievement of SD. The UN encourages communication of, engagement with, and commitment to the Agenda 2030 SDGs. This study examines written documentation (e.g., reports on CSR and sustainability) published since the launch of the SDGs in 2015. If organisations have implemented SDGs, any changes in their practices will have emerged since 2015, and this study explores the sources of these changes. Organisations permit free access to documentation from 2015 to 2019, thus allowing the implementation of a cross-sectional study.

To understand the development of these phenomena, the study took an explanatory case study design, focusing on the perceptions of extractive organisations and their diverse stakeholders, as these perceptions might have affected efforts towards the fulfilment of SDG 6 in Jordan.

Regarding the case selection, water sustainability is a critical issue in water-intensive industries such as the mining industry (Burritt and Christ, 2018; Gunson et al., 2012; Kemp et al., 2010; Northey et al., 2016). In the mining industry, organisations require water resources to sustain their extractive operations and practices. However, their operations and practices cause substantial issues in relation to the consumption, contamination, and loss of water (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016).

Furthermore, mineral mining is a major industry in Jordan, but there are only two extractive organisations in operation (extracting phosphate and potash). These two companies, which operate in the southern region of the kingdom, are the APC and the JPMC (al Rawashdeh et al., 2016). Therefore, a case study is highly representative of the population. Whilst the case study might seem to be small scale, it is important to emphasise that critical discourse depends

more on the depth of the analysis than the number of texts considered (Nwagbara and Belal, 2019). Therefore, a 'limited number of texts is sufficient in a discursive analysis in which small speech acts are seen to reveal significant information and which is aimed to say a lot about a little' (Joutsenvirta & Vaara, 2009, p.60; cited in: Nwagbara and Belal, 2019, p. n.a.). Finally, the small number of extractive organisations is an advantage because, as a result, a small case study permits a comprehensive and in-depth collection and analysis of the issue, namely water sustainability in the Jordanian mineral-mining industry.

By adopting a case study strategy, the study provides potentially useful insights for other countries facing water scarcity and economic constraints. For example, this study reveals that the national government and the mineral-mining industry might lack the expertise to implement sustainable practices. There might be a distinction between what an international organisation such as the UN perceives as sustainable and what a national government and the mining industry actually achieves in a developing country. Therefore, this case study of the Jordanian experience could be useful on a broader scale to assist other countries in identifying such challenges.

A case study approach enables the aggregation of compelling and robust evidence and facts on the phenomena under study, according to Yin (2009). This case study investigation of water sustainability permits nuanced and in-depth descriptions and interpretations of the similarities and differences in terms of legitimising water-related practices in the Jordanian mineral-mining industry.

4.4 Data Collection Strategy

The nature of the data to be collected influences the data collection method, as data can be derived from primary or secondary sources, or both (Brewer and Hunter, 2006). A multi-method approach combines two or more methods of data collection and analysis, using qualitative and/or quantitative methods (Saunders et al., 2008). For the current study, methodological triangulation was applied, employing secondary and primary sources (Denzin, 1978).

Studies frequently adopt a multi-method approach because of the multiple benefits that this offers (Brewer and Hunter, 2006, 1989). According to Brewer and Hunter (1989), studies embracing a multi-method approach use different methods for different purposes, as well as combining secondary and primary data, because this increases confidence in findings on complex and multifaceted issues. Furthermore, according to Blaikie, 'the common theme in

discussions of triangulation has been the desire to overcome problems of bias and validity. It has been argued that the deficiencies of any one method can be overcome by combining methods and thus capitalizing on their individual strengths' (1991, p.115; cited in: Opperman, 2000, p.143). This study embraces a multi-qualitative method approach that permits an in-depth analysis of the phenomena, leveraging the advantages of each to address the different research questions (see Figure 4.1). Written documentary data (secondary method) was used, alongside focus groups and semi-structured interviews (primary method) to investigate the perceptions of extractive organisations and their stakeholders, as described below in Figure 4.2.

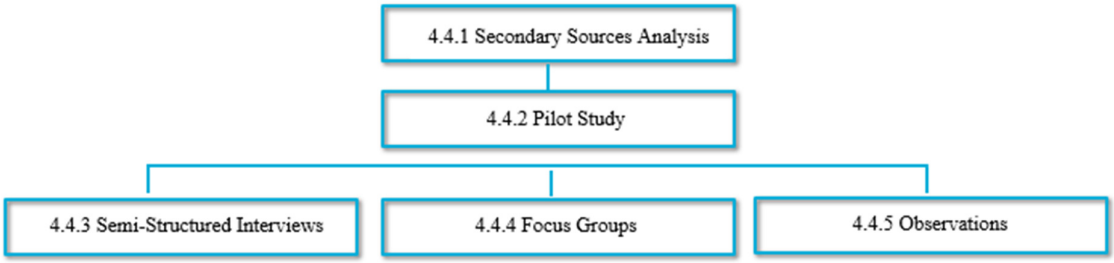

Figure 4.2 Outline of Data Collection Strategy

4.4.1 Secondary Sources: Corporate Voluntary and Non-Voluntary Reports and Governmental Reports

In March 2019, the written documentation were analysed. These documents contained indicators, narratives, and discourse of organisations' performance, such as CSR reports and sustainability reports (voluntary), as well as annual reports (non-voluntary). Written documentation is a key communication tool that organisations use to communicate accounts of their operations and practices to their stakeholders. However, these written documents address different audiences, such as shareholders, national government, international organisations, NGOs, and local communities (van Leeuwen, 2013). Such documentation might reflect the managerial capture of information and the strategical management of stakeholders' perceptions and expectations of accountable behaviours (Boiral et al., 2019).

The purpose and language of written documentations differ depending on the audience, and they might be used as control mechanisms to mask irresponsible and unaccountable behaviour. For instance, Uddin, Siddiqui, and Islam (2018) investigated the political motives and perspectives of corporate disclosure through documentary analysis of voluntary and non-voluntary reporting, in relation to annual reports, CSR reports, and the websites of the banking

companies in Bangladesh. According to Uddin et al. (2018), powerful stakeholders projects and agendas are related to corporate reporting, which points to the influence of politics on corporate reporting. Likewise, Oruh and colleagues (2020) conducted a study of Nigerian employment relations – utilising interviews, focus groups, and shadow reports – found that organisations structure their discourse to facilitate managerialist ideology and shareholder-centric practice. In this way, organisations might legitimise their operations and practices in the eyes of their stakeholders.

The documentation in which an organisation discloses its narrative to stakeholders is called a 'corporate narrative' (Merkl-Davies et al., 2011). In corporate narrative research, written documentation can be viewed as either a 'phenomenon' or a 'means' of study (Merkl-Davies et al., 2011). As a phenomenon, studies focus on reporting facts, such as assessments and indicators (see Boiral and Henri, 2017). However, written documentation can be used as means to study a phenomenon, with 'corporate narrative documents […] used as a source of data to study a range of organisational phenomena' (Merkl-Davies et al., 2011, p1), such as sustainability, accountability, and legitimacy (see van der Waal and Thijssens, 2020). In this study, written documentation is used to identify organisations' understanding of water sustainability. In doing so, the study explores the knowledge mediated through language, such as that concerning organisations' ideologies, perceptions, and opinions. Written documentation revealing corporate narratives thus provides an optimal source of knowledge concerning organisations' understanding of water sustainability.

As the UN launched the 17 SDGs to achieve SD in 2015, this study focuses on written documentation published on the selected organisations' websites from 2015 to 2019. The study exclusively considers GRI indicators for SDG 6, 'Cleaner Water and Sanitation', examining and assessing the degree and form of both narratives and indicators appearing in the written documentation.

This study analysed the written documentation produced by the target population representing the mineral-mining industry in Jordan. This documentation included three CSR reports and 10 annual reports, as listed in Table 4.1 below. CSR and sustainability reports are voluntary, whilst annual reports are non-voluntary.

Table 4.1 Textual Sources – Corporate Reports

From 2015 to 2019: Written Documentation

Mining Industry	Corporate Social Responsibility Report	Annual Reports
Extractive Organisation A	3	5
Extractive Organisation B	0	5

A non-voluntary report presents accounts of the financial status of the organisation to its shareholders (Daub, 2007). The publication of such reports is a mandatory requirement for organisations. A non-voluntary report might reveal organisational ideologies – for instance, sustainable water-related practices might be narrated as a cost-effective solution and used to demonstrate financial accountability, thereby legitimatising operations and practices from the perspective of shareholders (Herlin and Solitander, 2017). However, organisations must increasingly justify their activity to a critical public, thus annual reports might account for economic as well as social and environmental performance. Therefore, non-voluntary reports were found to contain four discourses: *accounting discourse*, presented through financial statements endorsed and certified by public accounts; *discourse of finance* presented as numerical facts and figures; third, *public relations discourse,* depicted by the chair's letter; and fourth, the *legal disclaimers*, presented as repudiation in fine print (Bhatia, 2014).

Voluntary reports account for organisations' socio-economic and environmental performance in qualitative and quantitative terms. Although their provision is not mandatory, a substantial increase in the publication of sustainability reports has been documented, and the motivations for – and outcomes of – reporting have expanded to reflect this topic's growing strategic importance (Higgins, Milne, and van Gramberg, 2015; Higgins and Coffey, 2016). To the researcher's knowledge, research has yet to identify the main discourses typically included in voluntary reports. However, the voluntary reports analysed that contained public relations discourse focused on reassuring stakeholders of the organisation's performance and showing its accordance with their expectations, whilst several other types of discourses were also found in the literature (Essah and Andrews, 2016; Onn & Woodley, 2014; Spence, 2007). There is a lack of agreement on the set of discourses that tend to characterise voluntary reports, but the key motivations for their adoption have been summarised and include social pressures, legitimation, accountability, and market and political outcomes (Higgins and Coffey, 2016). Furthermore, the voluntary reports analysed contained an *accountable discourse*, which is

concerned with communicating sustainable socio-economic and environmental performance (Higgins and Coffey, 2016). In this way, organisations communicate their accounts of their sustainable performance, which provide insights to stakeholders on their performance, operations, and practices (Daub, 2007; Higgins and Coffey, 2016).

Both voluntary and non-voluntary reports are key communication tools that organisations use to communicate their accounts of operation and practices to their stakeholders. This written documentation addresses different audiences, such as shareholders and NGOs (van Leeuwen, 2013). This study identifies the differing natures of the discourse found in voluntary and non-voluntary reports. In this way, it explores the organisations' understanding of water sustainability and their justifications for their water-related practices. Through the analysis of these different texts, the study attempts to unravel the organisations' construction of water sustainability.

Furthermore, the study explored official reports issued by the national government to understand the context, water challenges and issues, as well as SDG 6 cleaner water and sanitation at the national level. These written documents address various audiences, including business corporations and organisations, international organisations, non-governmental organisations, and local communities. The documentation includes national reports and ministry reports, and these were analysed to reveal the dominant ideologies, perceptions, and opinions that could be constructing and deploying particular water narratives and discourses in Jordan (Shamayleh, 2019). See Table 4.2 below for details of the key national governmental reports analysed.

Table 4.2 Textual Sources – National Government Reports

Textual Sources – Governmental Reports	
National Government Level	Jordan 2025: National Vision and Strategy in 2015
Ministerial Level	Jordan 2025: A National Vision and Strategy, Jordan's Way to Sustainable Development, and the Executive Development Plan in 2017. By the Ministry of Planning and International Cooperation
	Jordan 2025: National Water Strategy in 2017 By the Ministry of Water and Irrigation (MWI)

However, the official national government reports alone would be insufficient to explain the construction and deployment of water narratives and discourses or the power struggles and dynamics shaping water-related practices in Jordan (Hussein, 2018). Therefore, other data collection methods were required to yield more comprehensive insights and a better understanding of the phenomena.

Nevertheless, the written documentation provided insights to inform the interview and focus-group questions, as proposed by Bini, Bellucci and Giunta (2018). In the current study, analysis of the written documentation led to the emergence of unanticipated narratives and discourses, which were then embedded in the semi-structured interview and focus-group questions (see Appendix Ⅲ).

To summarise, there are several advantages to using and analysing written documentation; for example, it is an efficient and effective non-reactive unit of analysis, reflecting governmental and managerial capture of information, knowledge, and practices, as mediated through language and the exploration of ideologies, perceptions, and opinions. However, as mentioned previously, written documentation served as an additional source of information on corporate and governmental challenges regarding access to clean water and sanitation in Jordan. The limitations of this method were overcome by its use in conjunction with other methods, such as a pilot study, focus groups, and semi-structured interviews. These methods were used to grasp the meanings, reasons, and practices identified by organisations in relation to the degree of adoption of SDG 6 water-sustainability measures and practices. The pilot study is introduced in the next section, followed by a description of the focus group and semi-structured interview procedures.

4.4.2 Pilot Study

Pilot studies are rarely discussed in relation to qualitative research, as they are often associated with positivist works (Sampson, 2004). However, when investigating a multi-fractured and complex phenomenon, it is recommended to conduct a pilot study to appraise the quality, relevance, and appropriateness of the research questions and methods (Creswell, 2003). A pilot study allows for a preliminary exploration of the research topic, which provides valuable feedback in terms of reducing, rephrasing, and rearranging questions, as well as assessing the

interview duration (Sampson, 2004). A pilot study thus reduces the risk of unanticipated challenges arising during data collection (Doody and Doody, 2015).

In line with good research practice, in July 2019, the researcher conducted two semi-structured pilot interviews and one focus group. The first consideration was to reduce the number of questions, as the scholarly literature and secondary data initially led to the development of 70 questions. The main criteria for exclusion of questions were lack of comprehensibility and specificity.

The second consideration concerned the rephrasing of the questions according to the knowledge and background of the participants, with the goal of ensuring that the questions were aligned with the research purpose and to delete assumptions concerning the importance of certain issues before the participant's own narration. For instance, as mentioned in the literature review, the concept of sustainability has expanded from an initial focus on the natural environment to include social and economic factors (Bansal, 2005; Elkington, 1998; Veleva and Ellenbecker, 2001). Furthermore, there is a lack of consensus on the definition of SD, with many different ideas, perceptions, and understandings having been proposed (Kemp and Martens, 2007).

The researcher framed the interview and focus-group questions according to the Brundtland report (1987) definition of SD. This provided clarification for participants who were unfamiliar with the concept, allowing them to discuss SD, water sustainability, and SDG 6. The definition was presented as follows:

> *What is your opinion on water sustainability, specifically cleaner water and sanitation? Water sustainability means meeting the needs of the present without compromising the ability of future generations to meet their cleaner water and sanitation needs.*

The third consideration was the need to rearrange the structure of the protocol and its duration to improve the flow of the conversation and allow the participants the space to explore the themes. The researcher completed a semi-structured and focus-group guidance manual to moderate questions discussing various themes (e.g., water, water issues, accountability, water sustainability, SDG6). The pilot study revealed that the duration of the interviews depended on the participants' professional positions, social dynamics, and personal characteristics.

To finalise the research protocol, the researcher then consulted the supervisory team, field academics, about the results of the pilot study. The researcher reduced the number of research questions from 70 to 15 and adjusted the duration of the interviews from 40 to 60 minutes and

the focus groups from three to two hours. A final question was added, inviting the participants to disclose any further opinions and thoughts that had not been mentioned during the conversations.

4.4.3 Semi-Structured Interviews

Interviews are a widely used method for collecting rich contextual data in qualitative research. An interview is a dialogical communicative exchange between a researcher and participant, in which the former elicits responses from the latter (Myers, 2009). This section explains the decisions regarding the type of qualitative interview , the sample identification process, the participant selection process, the method of access to participants, the interview guide/protocol, and the interview process.

Semi-structured interviews were conducted to gather insights into the challenges faced by the interviewees regarding access to clean and sanitary water in Jordan and the impact of those challenges on the country's achievement of SDG 6. To ensure a holistic perspective, 20 interviews were conducted with the extractive organisations and their multiple stakeholders. (Refer to Appendix Ⅱ for details.)

There are three types of interviews commonly used in qualitative research: structured, semi-structured, and unstructured (Bryman and Bell, 2003; Yin, 2009). This study involved semi-structured interviews, which are informal unstructured discussions intended to develop an understanding of a subject (Bryman et al., 2008; Gubrium and Holstein, 2001). Semi-structured interviews address the 'what' and 'how' and emphasise an exploration of the 'why' (Gubrium and Holstein, 2001). They enable flexibility through a thorough progression – from question generation, to elaboration, and to justification in the interview; and at the same time, they allow the addition, omission, and rearrangement of questions through a continuous process of reassessment. Hence, in this study, semi-structured interviews facilitated an investigation of the meaning and implications of and the justifications for water sustainability.

The interview guide/protocol was adjusted based on the participants' knowledge and background of and insights into water-related challenges and SDG 6. The selection of the research sample comprised two stages. First, following stakeholder theory, the researcher identified participants based on the extractive organisations' written documentation. Both organisations named the national government, NGOs, local municipalities, and the local community as stakeholders. For inclusion in the focus groups, the researcher identified local-

community members who might be geographically distant and 'voiceless', such as townsmen and women, farmers, and *bedu* (details are provided in section 4.4.4).

Second, with consideration of cultural hegemony, the researcher identified stakeholders to represent public discourse, such as international organisations, university academics, and journalists. These stakeholders might not be recognised by extractive organisations, but they nonetheless have a legitimate claim to public goods, such as water resources. Furthermore, they have the power to influence public discourse. The sample selection was influenced by Hussein (2018), which has the significant difference of omitting extractive organisations and other empirical literature (al Rawashdeh et al., 2016; Shamayleh et al., 2019). As discussed previously, the mining industry attracts public attention due to its exploitation of natural resources and the impact on this on sustainability issues (Rodrigues and Mendes, 2018). Organisations thus disseminate information cautiously to avoid negative consequences (Azapagic, 2004; Rodrigues and Mendes, 2018), such as restricted access to finite resources, the withdrawal of their SLO, or demands to bear externality costs. Therefore, interviews with different stakeholders, inviting them to comment on the opinions and practices of other stakeholders is important for ensuring a full understanding of the water-related issues.

According to Dogaru et al. (2009), the perceptions of internal stakeholders provide a valuable assessment and evaluation of the organisation's communication of, commitment to, and engagement with sustainability in the mining industry. The researcher contacted the extractive organisations through the external funding body, the Princess Sumaya University for Technology (PSUT), which functions as a gatekeeper and closely cooperates with a variety of stakeholders, such as the national government, international organisations, NGOs, extractive organisations, and local municipal authorities in Jordan.

In qualitative research, gatekeepers are intermediaries between the researcher and participant who facilitate and negotiate access to stakeholders and sites (McAreavey and Das, 2013). For instance, Mercer-Mapstone, Rifkin, Louis, and Moffat (2017) requested the assistance of gatekeepers to facilitate and negotiate their access to vulnerable and marginalised stakeholders in the mining industry. For the current study, the researcher used the snowballing technique to facilitate the recruitment of participants (Gubrium and Holstein, 2001).

Having identified the stakeholders cited in the extractive organisations' written documentation, the researcher proceeded to identify the participants with relevant roles in the extractive

organisations and the various institutions with technical, procedural, and financial competence and knowledge of the national and local water issues.

In the mining industry, senior managers communicate with stakeholders to disclose the organisation's perspective of sustainability challenges, specifically the impact of economic activity on society and the environment (De Villiers et al., 2014). Therefore, senior managers are instrumental in balancing their organisation's economic duties with its social and environmental responsibility. Furthermore, senior managers control the path to the execution of sustainable water-related practices in the mining industry. Hence, the researcher conducted interviews with the extractive organisations' senior managers, including the chair and chief sustainability or CSR officer. By interviewing senior managers, the researcher explored the extractive organisations' commitment to and engagement with the issues, as well as their thoughts on sustainable solutions to the bottlenecks in the extractive and mining process.

The researcher also conducted interviews with the operational managers who design strategies and control extractive and mining practices. Operational managers have technical knowledge and expertise that can influence the adoption of sustainable extractive and mining practices (Azapagic 2004); thus, they have the power to shape the extractive and mining practices (Onn and Woodley, 2014). In the interviews with operational managers, the researcher investigated the technical drivers of and barriers to adopting water-related practices that could be influencing the efforts towards the fulfilment of SDG 6 in the mining industry.

The researcher also conducted interviews with employees, including mechanical and environmental engineers involved in the extractive operations. Organisations depend on their employees to implement water-related practices in their extractive operations and thus to operationalise the SDGs (Fonseca et al., 2012). By interviewing employees, the researcher intended to identify and explore sustainable water-related practices that could enhance or mitigate the issues associated with operationalising SDG 6.

The researcher then identified the participants with roles in the national government and local municipal authorities and knowledge of the national and local water issues and SDG 6. In Jordan, natural resources are 'owned' by the state on behalf of their citizens, and the state has a stewardship role in the management of natural resources (Azapagic 2004). Extractive organisations require an extractive licence, which grants governmental approval of their operations. Therefore, participants from the national government were instrumental in

clarifying the water issues at the national level and showing how the national government views the role of extractive organisations in addressing the water-related challenges.

The national government has officially committed to meeting the Agenda 2030 SDGs. Therefore, multiple government ministries are involved with addressing the water-related challenges, as well as communicating compliance and engagement with SDG 6 in Jordan. Hence, the researcher conducted interviews with participants from the MEMR, the MoPIC, the MWI, and the MoE.

Additionally, the researcher conducted interviews with local authority representatives. Local authorities understand local-community beliefs, perceptions, and opinions. However, they exercise limited power to represent the local communities' claims because they lack the official authority and jurisdiction to issue mining licences. Extractive organisations might seek consent from the local authority to obtain an SLO (Zhang et al., 2015). A social licence confirms the local community's approval of the organisations' operations based on the latter's internalisation of local beliefs, perceptions, and opinions – in relation to sustainability, for example (Prno, 2013). Therefore, a local authority could communicate the local community's perspective on extractive organisations' commitment to and engagement with water-related challenges (Azapagic, 2004).

Finally, the researcher identified the stakeholders who produced, constructed, and disseminated public discourse on water-related challenges and SDG 6. This included stakeholders who have legitimate claims, as well as relevant knowledge, experience, and insights regarding the national and local water conditions. Hence, the researcher conducted interviews with representatives of the UN and NGOs in Jordan. The UN communicates the international discourse and operationalises the SDGs, with support and guidance from the national government; thus, it is instrumental in understanding the communication and implementation of Agenda 2030, at both the national and the local levels. At the national level, the researcher interviewed the UNDP representative in Jordan. At the local level, the UN communicates with NGOs that are actively involved in water initiatives, projects, and agendas (Owen and Kemp, 2013), including monitoring SDG 6 indicators and implementing projects and plans regarding SDG 6 in Jordan. Therefore, the researcher conducted interviews with participants from the WANA Institute and the Water and Environment Institute in the Royal Scientific Society.

As the sample was inclusive, the researcher endeavoured to avoid participatory bias by categorising the stakeholders in accordance with top or bottom accountability (see Appendix

Ⅱ). At the top, accountability entails the obligation of the 'accountor', the national government and extractive organisations, to behave responsibly towards stakeholders (Unerman et al., 2007). Meanwhile, at the bottom, accountability entails the 'accountee' – the local authority and local community – to hold the national government and extractive organisations responsible for their strategies, operation, practices, and decisions (Unerman et al., 2007). See Table 4.3 below for a breakdown of the interview participants.

Table 4.3 Semi-Structured Interview Participants

Interview Participants		Designation	Code
Extractive Organisation A	Senior Management	Corporate Social Responsibility (CSR) Manager	EO-A1
	Middle Management	Water Manager	EO-A2
	Operational Employees	Water Resources Engineer	EO-A3
Extractive Organisation B	Senior Management	Board of Directors – Member	EO-B1
	Middle Management	CSR Manager	EO-B2
	Operational Employees	Water Research and Quality Engineer	EO-B3
Ministry of Water and Irrigation (MWI)		Strategic Planning Expert	MWI-1
		Acting Secretary General Assistant for Strategic Planning	MWI-2
		Engineer	MWI-3
Ministry of Environment		Head of Environment and Monitoring Section	MoE
Ministry of Energy and Mineral Resources		Head of the Geology Department	MEMR-1
		Eng. Renewable Energy	MEMR-2
Ministry of Planning and International Cooperation		Head of Sustainable Development Division	MOPIC
Non-Governmental Organisation A		Team Leader and Senior Researcher	NGO- A
Non-Governmental Organisation B		Manager of Water Studies	NGO- B
International Organisations		Head of Environment, Climate Change & DRR Portfolio	IO
Local Authority of Municipality in the South of Jordan		Mayor – People's Representative	LA-B
		Mayor – People's Representative	LA-A
Academics		Professor	AR-1
		Lecturer	AR-2
Journalists		Reporter	JR-1

During the fieldwork, the researcher contacted the participants via email invitations, which included an information and consent sheet. The researcher then scheduled dates and times for the interviews with participants from the extractive organisations, national government, international organisations, and NGOs. To confirm participation, the researcher contacted participants via telephone. During the call, the researcher again asked the participants if they were comfortable participating in an audio-recorded interview. To assure the participants that their anonymity would be protected, the researcher informed the participants of the confidentiality procedure and policy regarding the interviews. The researcher then sent a follow-up email, confirming the dates and times of the interviews.

During the interview, the researcher presented the participants with the information and consent sheet. The researcher then clarified and explained any statements that the participants queried as vague or unclear. In this way, the researcher confirmed the participants' comprehension and agreement to commence the interviews. The researcher also repeated the request for permission to audio-record the interviews.

The researcher conducted face-to-face recorded interviews with stakeholders from the international organisations, national government, NGOs, extractive organisations, and local municipal authorities in Jordan. The researcher used an interview guide/protocol to 'moderate' the discussions and gather insights into the participants' experiences, perceptions, and opinions of cleaner water and sanitation.

The interviews focused on the challenges for the national government and extractive organisations regarding access to clean and sanitary water, and each interview lasted 40 to 60 minutes. The researcher used the interview guide/protocol to facilitate the discussions concerning water accountability and sustainability and SDG6. (Please refer to Appendix Ⅲ.) The interview guide/protocol was adjusted to reflect each participant's respective knowledge, background, and insights into water issues and SDG 6.

The researcher continued conducting the interviews until data saturation had been reached – that is, until the stage at which the interviews were no longer generating new discursive insights (Fusch and Ness,2015). According to Fusch and Ness (2015), smaller case studies reach saturation more rapidly than larger case studies and are more likely to yield rich and in-depth insights.

A state-funded, public broadcasting organisation was the only organisation to decline the invitation to participate in an interview. In addition, owing to the complex, multi-fractured, and

sensitive nature of water issues, a few national government officials exercised their right not to have the interview recorded. In those cases, the researcher took notes by hand. This accommodation might have reduced the quality and quantity of data collected. However, three considerations should be highlighted here: first, this accommodation allowed the researcher to gain the participants' trust and confidence and to convey a sense of professionalism; second, the participants tended to reproduce the information found in the governmental texts, such as referring the researcher to key written documentation; and third, the participants were provided with the interview questions before the interview, and based on observations of their behaviour, it seems that the participants had prepared for the interviews.

As this study concerns a multi-stakeholder perspective on whether extractive organisations are fulfilling SDG 6, semi-structured interviews were conducted with multiple stakeholders to provide a holistic view. By selecting relevant actors – such as national government officials, extractive organisations personnel, and international organisation representatives – the researcher was able to map how different ideas, experiences, and perceptions might influence organisational behaviour, as well as the more general problem of water sustainability and SDG 6.

The semi-structured interviews complemented the secondary data by providing further descriptive information. Moreover, they allowed certain peculiarities of the domestic context to emerge, whilst illustrating the interconnection between the national and international contexts (Gubrium and Holstein, 2001), highlighting the desirable and problematic, expected and unexpected outcomes. The researcher also employed focus groups, which permitted the investigation of social dynamics and the social construction of public discourses. In the following section, the researcher describes how the focus groups enabled an exploration of the challenges of less salient stakeholders in accessing clean water and sanitation in Jordan.

4.4.4 Focus Groups

In qualitative studies, multiple methods are used to gather insights into a variety of phenomena (Gubrium and Holstein, 2001). They also incorporate different questioning approaches. For instance, qualitative methods 'differ in the degree of emphasis on culture, in the choice of arena or boundaries of the study, and in the specific forms of information that are sought' (Rubin and Rubin, 1995). Focus groups are a method commonly used in qualitative research. Morgan and Spanish (1984) position focus groups between observations and interviews as two sides of a spectrum. On the one side, observations collect voluntary or non-voluntary information from participants, whilst interviews comprise directing statements at participants to request information in a social setting. Therefore, focus groups leverage the strength of both qualitative methods. A focus group is a collective discussion that uses a flexible and exploratory approach, emphasising interactions between participants, where the interviewer serves only as the moderator (Qu and Dumay, 2011). Because the interviewer has less involvement, the risk of researcher bias is reduced (Qu and Dumay, 2011). Focus groups usually consist of a discussion with 5-7 participants, during which the participants share their perceptions, experiences, and opinions of the research topic.

Focus groups vary according to three dimensions: the number of participants, whether it is moderated, and whether the composition of the group is homogenous or heterogeneous (Fern, 1982; Kitzinger, 1995; Morgan and Spanish, 1984). This raises the question of whether the number and quality of the ideas generated might also vary (Fern, 1982). In response, multiple scholars have demonstrated that the size of a focus group does not influence the quantity or quality of the knowledge generated (Fern, 1982; Kitzinger, 1995; Morgan and Spanish, 1984). Nevertheless, moderated focus groups have the advantage of structured and directed discussion, thus reducing off-topic digressions by the participants (Morgan and Spanish, 1984). Additionally, if the participants in the focus have sufficient commonalities, this encourages them to discuss topics in more detail and for a longer duration (Kitzinger, 1995).

Focus groups can be a useful step before conducting interviews, as they can provide insights with which to formulate interview questions (Morgan, 1996). Additionally, focus groups can be useful after conducting observations, when comparing and analysing participants' responses (Morgan, 1996).

The process of selecting the focus-group participants comprised two stages. First, following stakeholder theory, the researcher selected townsmen and farmers from the local communities.

This was because written documentation (voluntary and non-voluntary reports) identified these parties as stakeholders who might be legitimising extractive and mining practices to further their own interests (Hussein, 2018). Second, following cultural hegemony, geographically distant and voiceless stakeholders – such as women within local communities – who may not be recognised by extractive organisations as stakeholders were invited, as these individuals have a legitimate claim on public goods such as water resources. Furthermore, these stakeholders might ideologically consent to dominant discourse and narratives at a subconscious level. Moreover, this choice was partially driven by observations during the pilot study and fieldwork (Reed et al, 2009). For instance, Bedouin tribes – or *bedu* – had been overlooked.

Following the selection of the groups, the researcher identified the participants with similar water and water-sustainability interests. In the mining industry, local communities shoulder the detrimental environmental impacts of the extractive organisations, in particular those related to over-consumption, contamination, and loss of water (Azapagic, 2004; Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). Therefore, the researcher used the focus group to explore and clarify the experiences, perceptions, and opinions of local-community members.

In local communities, townsmen have knowledge and experience of and insights into the national and local water issues. Furthermore, farmers have technical, procedural, and financial knowledge related to irrigation of agricultural land, as well as national and local water issues. Therefore, their perspectives elucidated the impact of the extractive organisation at the local level (Hussein, 2016). Moreover, women possess 'water knowledge' due to their primary role in accessing, managing, and sustaining water resources (Kim et al., 2013). From a gender perspective, women in Jordan take responsibility for hygiene, cleanliness, and sanitation at the household level (Kim et al., 2013). Therefore, women have perspectives of the impact of the extractive organisations' actions on the household level. Finally, *bedu* have knowledge of water resources and desert topography (Hussein, 2018), and their perspectives reveal the impact of the extractive organisations on the nomadic lifestyle. By highlighting the local-community perspectives, this study unpacks extractive organisations' impact on local communities, specifically with regard to water cleanliness and sanitation. Table 4.4 below presents the details of the focus-group participants.

Table 4.4 Focus-Group Participants

Focus-Group Participants	Designation	Code
Bedouin Tribes Local Community	Nomadic Citizen	*FC-B1*
	Nomadic Citizen	*FC-B2*
	Nomadic Citizen	*FC-B3*
	Nomadic Citizen	*FC-B4*
Farmers Local Community	Farmer	FC-F1
	Farmer	FC-F2
	Farmer	FC-F3
	Farmer	FC-F4
Townsmen Local Community	Citizen In Trade	FC-T1
	Citizen In Trade	FC-T2
	Citizen Employed by Extractive Organisation	FC-T3
	Citizen Employed by Extractive organisation	FC-T4
Women Local Community	Female Citizen	FC-W1
	Female Citizen	FC- W2
	Female Citizen	FC-W3
	Female Citizen	FC-W4

Aware that local community members might be hesitant to participate, the researcher ensured that the focus groups were composed of participants who would be familiar to one another (Barratt et al., 2011). However, research by a Jordanian women from a Bedouin tribe raised important considerations in relation to gender and culture (Gabriel, 2015; Guillemin and Gillam, 2004). In light of this research, the current researcher focused, first, on the power dynamics between genders within the cultural context of water. Gender entails an awareness of the social construction of 'masculinity' and 'femininity', which influences subjective experiences, perceptions, and opinions (Kim et al., 2013). Taking this into account, the researcher inferred that voiceless, vulnerable, and marginalised stakeholders might be hesitant to participate, particularly in mixed focus groups (Kook, Harel-Shalev, and Yuval, 2019).

Therefore, the researcher, a Jordanian female, moderated the focus groups specifically to accommodate female participants.

Second, the researcher focused on the power dynamics between social-cultural factions, such as city and town dwellers, rural farmers, and Bedouin tribes (Miettunen, 2013). Accordingly, the researcher inferred that geographically distant stakeholders may also be hesitant to participate, especially in diverse focus groups. Therefore, the researcher, from a Bedouin tribe, moderated the focus groups, particularly in relation to *bedu* participants. Hence, the research encouraged participation and engagement, as well as freedom and flexibility of disclosure, especially with respect to sensitive and complex topics.

The researcher contacted the participants through the municipal authorities and NGOs (gatekeepers), who cooperated and collaborated closely with a variety of local-community members, including farmers and townsmen and women. The researcher also used her personal connections and family network to arrange focus groups with members of Bedouin tribes, or *bedu*.

The researcher contacted the potential focus-group participants via telephone. During the calls, the researcher asked the participants if they agreed to participate in an audio-recorded focus group. To assure the participants that their anonymity would be protected, the researcher informed them of the confidentiality procedure and policy regarding the interview. Afterwards, the researcher confirmed the dates, times, and location of the focus group.

The focus groups were conducted at multiple locations, which encouraged the attendance and engagement of participants (Sowter, 2016). These locations included the farmers union, the local municipality, and a *dewan*.[15] This enabled the researcher to draw insights from the participants' sense of location and place, which might have shaped their perspectives, experiences, and opinions of the extractive organisations' impact on their water resources (Sowter, 2016).

During the focus group, the researcher presented the participants with the information and consent sheet. The researcher then clarified any statements that the participants found vague or unclear. In this way, the researcher confirmed the participants' comprehension and agreement to proceed with the focus group. Finally, the researcher requested permission to audio-record the focus group.

[15] In the Middle East, a *dewan* is a reception area for hosting tribal guests (Hussein, 2016).

The researcher conducted, moderated, and recorded face-to-face focus groups with farmers, townsmen and women, and *bedu*. (Please refer to Appendix Ⅱ for further details of the participants.) The researcher conducted and moderated four focus groups, each lasting approximately 2-3 hours. During the discussions, the researcher encouraged the participants to speak in-depth and at length.

In particular, the researcher focused on highlighting issues related to water accountability, sustainability, cleanliness, and sanitation. The researcher used the focus-group guide/protocol to assist and facilitate the discussion on these key topics. Please refer to Appendix Ⅲ. The interview guide/protocol was adjusted according to the participants' knowledge, background, and insights.

The adoption of the focus-group method enabled the study to explore the challenges for less salient stakeholders in accessing clean water and sanitation at the local-community level. In addition, it highlighted the voices of the vulnerable and marginalised in the local communities surrounding the mineral-mining industry, and it revealed the power dynamics surrounding the water-related challenges in Jordan. However, as previously mentioned, focus groups alone would be insufficient to explore the challenges associated with access to clean water and sanitation. Therefore, the researcher also used observations to permit 'cross-referencing' by comparing and analysing the participants' responses in the focus groups and semi-structured interviews.

4.4.5 Observations

Observations capture in situ data through observations, recording, and analysis of the phenomena under study (Musante and DeWalt, 2010). Observations capture a detailed 'subjective interpretative' description (Zohrabi, 2013). According to Bryman and Bell (2003), the use of diverse methods assists in addressing prospective and retrospective issues in a case study. The current study employed non-participatory observations with the intention of capturing the influence of the national government and extractive organisation on stakeholders' water provisions, specifically in relation to cleanliness and sanitation. The observations also permitted cross-referencing through comparisons and analysis of the participants' responses.

For this purpose, non-participatory observations were made; this is a non-intrusive method that enables a third-party to investigate a phenomenon in a naturalised setting (Musante and

DeWalt, 2010). The researcher recorded the non-participatory observations using audio recordings and handwritten notes.

After the interviews and focus groups, the researcher recorded the participants' accounts and reflections, which provided detailed descriptions of the following: the national government's discursive struggle or cooperation with the ministries, international organisations, and NGOs; the extractive organisations' water-related practices; and the stakeholders' water provisions, specifically water cleanliness and sanitation. These observations added further depth to the qualitative information gathered from the focus groups and semi-structured interviews (Kemp et al., 2012). The following section discusses the ethical considerations with respect to conducting the semi-structured interviews, focus groups, and observations.

4.4.6 Ethical Considerations

In June 2019, the researcher obtained ethical approval to conduct the fieldwork in Jordan. The study adhered to the University of Sheffield's code of conduct (see Appendix I), which required consideration of the ethical implications regarding access, anonymity, confidentiality, informed consent, and safeguarding of data (Mertens and Ginsberg, 2009). An ethical approval form was submitted for the primary data collection, but the organisations' written documentation is publicly available online and therefore ethical approval was not required to access it.

With regard to confidentiality, the researcher shared information with the participants regarding their confidentiality and that of their personal information, providing them with information and consent sheets prior to the semi-structured interviews and focus groups. The researcher also clarified any points that the participants found unclear.

To protect the participants' anonymity, the researcher anonymised any potentially identifiable information in the transcripts of the interviews and focus groups. Given the complex, multi-fractured, and sensitive nature of water issues, the researcher assigned random codes to conceal the identities of the participants and the extractive organisations. However, considering the small size of the case study, the researcher cautioned the participants against revealing potentially identifiable details.

The researcher omitted from the transcripts the participants' personal data, including their names, positions and titles, and contact information. The researcher also omitted from the transcript any identifying information about the extractive organisations. By using pseudonyms for the participants and their organisations, the researcher was able to ensure the anonymity of

the interviewees in the transcripts, the thesis, and any future publications.

4.5 Data Analysis Strategy

4.5.1 Triangulation

Triangulation is a methodological approach that enables the investigation of phenomena using multiple data, methods, theories, or investigators (Denzin, 1978). Triangulation increases accuracy and validity and thus confidence in the final results (Moran-Ellis et al., 2006). Triangulation combines research methods to provide new findings and knowledge (Barratt et al., 2011), such as various discourses and narratives, which reflects the multi-fractured, complex nature of the study (Mertens and Hesse-Biber, 2012).

By combining different methods, the study captures the challenges of the extractive organisations and their relevant stakeholders regarding cleaner water and sanitation, as well as the impact of those challenges on the fulfilment of SDG 6 in Jordan. The study employed documentary sources, focus groups, semi-structured interviews, and observations in its triangulation process (Bryman and Bell, 2003; Saunders et al., 2008).

The researcher restrains from arguing for the superiority of one particular method over another, but rather asserts the potential advantages of combining well-chosen methods. For instance, whilst semi-structured interviews capture the challenges facing national government and extractive organisations and salient stakeholders, focus groups capture the less salient stakeholders' issues. Meanwhile, non-voluntary observations capture the researcher's perspective of those issues.

In a study that embraces triangulation, the methods inform one another. Hence, triangulation facilitates the identification of different dimensions of the phenomenon – such as the similarities and differences between stakeholders in their social narratives, discourses, and practices (Bryman and Bell, 2003; Saunders et al., 2008).

Triangulation assumes that if the integrated methods produce similar results, then the study has used accurate research measures (Barratt et al., 2011). If the results are contradictory, further explanation is required to highlight possible gaps and research questions. Since the study employed a multi-method approach to investigate the extractive organisations and their stakeholders' perceptions, the triangulation revealed various dimensions of sustainability. For instance, the analysis of the written documentation demonstrated organisations' engagement

with the rhetoric around SDGs in a formal context, whilst the focus-group discussions revealed that the stakeholders' views of sustainable practice may not accord with the SDG measurements or the views of other stakeholders. In this way, the focus groups revealed the impact of secondary stakeholders' understanding of extractive practices on water sustainability, highlighting 'downwards accountability' for the cleanliness and sanitation of water. Meanwhile, the semi-structured interviews revealed primary stakeholders' understanding of water-sustainable practices in the form of 'upwards accountability' cognitive ideologies, perceptions, and opinions.

Similarly, Essah and Andrews (2016) used the triangulation of multiple methods to ensure the rigour of their data collection and analysis when highlighting discrepancies between extractive organisations' understanding of sustainable practice and local communities' encounters with such practices. Triangulation enhanced the robustness of their analysis of the water-sustainability discourse, particularly in relation to cleaner water and sanitation narratives.

For this reason, the current study embraced triangulation to understand the multi-fractured and complex nature of the water cleanliness and sanitation issue. Additionally, the study employed critical discourse analysis (CDA) to analyse the documentary data (secondary method) and the focus group and semi-structured interview data (primary method). A description of CDA now follows.

4.5.2 Critical Discourse Analysis (CDA)

To investigate sustainability and SDG 6 in the mining industry, the study focused on extractive organisations' perceptions, opinions, and experiences of measures to achieve cleaner water and sanitation. As a first step, the study investigated organisations' disclosure of accountability intended to express to the public their commitment to and engagement with sustainability (Bini et al., 2018). For this purpose, the study embraced CDA, a linguistic systematic analysis that generates descriptive, linguistic data to reveal the interconnection between language and society (Wodak and Meyer, 2009). The study inductively derived ideologies from the qualitative data emerging from the phenomena under study. For instance, the study used CDA to identify the kinds of references disclosed in official written documentation (e.g., sustainability, CSR, and annual reports) about sustainability and SDG 6 measures from the perspective of the extractive organisations. As a result, the study reveals how extractive organisations construe and construct water sustainability practices.

From this perspective, CDA assists by revealing any societal or institutional pressures pushing the organisation to publish sustainability and SDG 6-related information in its official

documents, thus illuminating power dynamics concerning the adoption of SDGs. In this way, CDA helped to investigate extractive organisations' socially constructed linguistic instruments of power and control (hegemony) in the Jordanian mining industry. CDA reveals the discursive practices that use power and control instruments to construe and construct social reality. Thereby, CDA enables the de-construction of the hegemonic discourse that sensitises the public to water issues, as well as re-constructing power and control dynamics (Fairclough, 2001; Hussein, 2018).

As a second step, CDA was used to analyse the interview and focus-group transcripts (described in sections 4.4.2 and 4.4.3). In doing so, the study highlighted the 'identified', 'mainstream', and 'neglected' water-related practices.

From a theoretical approach, stakeholder theory investigates multi-stakeholder socially constructed realities (Bouzon et al., 2018; Donaldson et al., 1995; Freeman, 1984). CDA, through its linguistic systematic analysis of language, identifies the water-related challenges of extractive organisations and their stakeholders that might be hindering the fulfilment of SDG 6. Furthermore, through the analysis of narratives and discourse, CDA reveals the salience of stakeholders' attributes embedded within their claims (Mitchell et al., 1997) and which might be influencing the adoption of sustainable or unsustainable water-related practices in the mining industry.

Language, as a powerful tool embedded in narratives and discourse, constructs complex and dynamic power relations that can yield hegemonic power. Therefore, CDA is able to reveal the construct and maintenance of power relations and thus the dominance between organisations and their stakeholders. Furthermore, CDA reveals the exercise of ideology leadership to cultivate the ideological consent of the subaltern (Gramsci, 1971).

CDA aims to unravel the interdependence between power and meaning, thus revealing socially constructed practices and the taken-for-granted social realities (Fairclough, 2001; van Dijk, 1998; Wodak and Meyer, 2009). An important model that helps to merge theoretical lenses and CDA is the Fairclough (2001) tri-dimensional model, illustrated in Figure 4.3. According to Fairclough (2001), CDA can be encapsulated within a tri-dimensional model that entails the systematic analysis of the text, discursive practice, and social practice. The textual dimension focuses on discourse linguistic realisation, discursive practices concern the social production and consumption of discourse, whilst social practice comprises the organisational and institutional circumstances that influence the discourse. Thus, the Fairclough (2001) tri-

dimensional model depicts the inter-dependence of the three elements to demonstrate the dialectical interaction between the discourse and the social world.

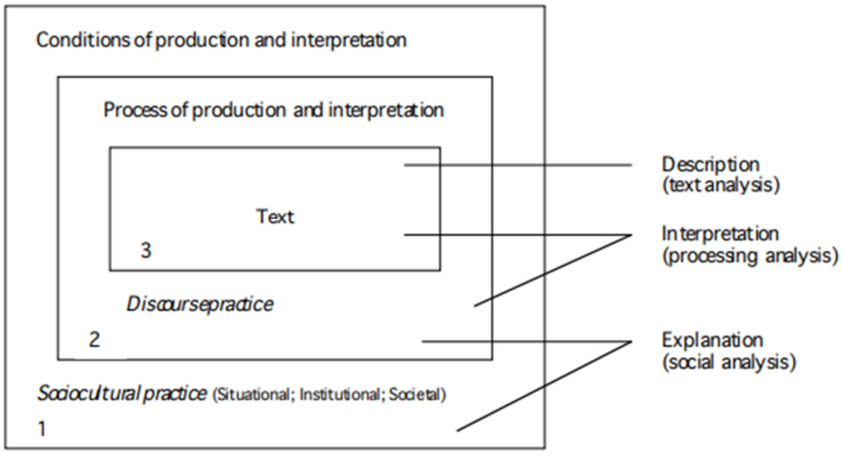

Figure 4.3 Fairclough (2001) Tri-Dimensional Discourse Model

The sustainability issues under study touch upon multi-stakeholder realities, such as those of the local communities, the extractive industry, NGOs, and others. To analyse the textual data, the Fairclough (2001) dialectical-relational approach to CDA was applied. Using this approach, analyses of organisations' documentation and the transcripts of the focus groups and semi-structured interviews were conducted. The procedure for this dialectical-relational approach entails the following: a focus on the social wrong, the identification of obstacles to the social practice, an exploration of the social order network of practices 'needs' of the problem, and the identification of a possible solution to the problem. This procedure was considered appropriate for this study of the important water issues in Jordan (Al Rawashdeh, 2015; Al Rawashdeh et al., 2016; al Rawashdeh and Maxwell, 2014; Hussein, 2018). Thus, it was used to derive the narratives emerging from the accounts of extractive organisations and their stakeholders regarding sustainability and SDG 6, presented in written documentation and shared in focus groups and semi-structured interviews. This approach revealed different stances for critical analysis and comparison. The study was thus able to gain an understanding of the extractive organisation and its stakeholders and produce a map of the 'what' and 'why' regarding the importance of sustainability and SDGs for each actor. Finally, the study investigated how the various bottlenecks in the process could be tackled.

4.5.2.1 Fairclough (2001) Tri-Dimensional Discourse Model

From Fairclough's perspective, discursive events are 'instances of language use, analysed as text, discursive events and social practices' (Fairclough, 1993). In other words, discursive events constitute the relationship between discourse (text) and its social context (social practice). This study applied Fairclough's CDA approach of relating micro levels of language on discursive events to the wider macro-level of social practices.

Discursive events dominate the focus of Fairclough's CDA approach, as evidenced in his publications such as Language and Power (1989), Discourse and Social Change (1992) and Critical Discourse Analysis (1995). In light of this focus, Fairclough developed a three-dimensional model that comprises text, discursive practices, and social practices.

a. Language

Fairclough (2001) argues that language (text) determines society (discursive and social practices), whilst social reality determines language (text). In line with this proposition, the researcher analysed the written documentation and conducted the focus groups and semi-structured interviews in Arabic, the native language of the participants.

CDA derives cognitive knowledge from the use of language, thus the study involved written documentation and focus groups and interviews in the participants' native language. The critical analysis of these texts revealed the linguistic and sociological narratives that facilitated the emergence of the local conception of sustainability.

The use of Arabic – as a familiar and comfortable language – facilitated communication with the participants and thus helped to gather thorough and insightful knowledge (Bryman et al., 2008; Zotzmann and O'Regan, 2016).

b. Text Analysis

Text analysis involves the systematic linguistic analysis of a text in relation to the research objectives of a study (Barker and Galasiński, 2001). Since the current study investigated the understanding of extractive organisations and their stakeholders of issues related to clean water and sanitation in relation to the mining industry, its focus was on the water-sustainability discourse of extractive organisations and their stakeholders.

To investigate the water-sustainability discourse, the study used 'communicative events', comprising instances of language use, including written documentation and focus groups and semi-structured interviews. The study focuses on two constituents of CDA: *cohesion*, which refers to the components of the textual surface, and *coherence*, which concerns the meaning of the text (Fairclough, 2001). CDA encompasses socially constructed, linguistic instruments of power and dominance (hegemony; Blommaert and Bulcaen, 2000) that help to derive cognitive knowledge (Fairclough, 2001).

The text analysis in this study examined key elements of *cohesion*, including the vocabulary, grammar, and structure of the text (Fairclough, 1992), all of which brought to the surface the function, discourses, and narratives within the text. The other key considerations in a text analysis are 'multifunctional' and concerned with different discursive behaviours, such as the ideational, interpersonal, and textual (Barker and Galasiński, 2001). For instance, language discursive behaviour was manifest in the written documentation (textual), focus groups (interpersonal), and semi-structured interviews (ideational). Language discursively brings to the surface cognitive ideologies, experiences, perceptions, and opinions (Barker and Galasiński, 2001).

The text analysis in this study focused on the linguistic features used by the extractive organisations and their stakeholders and which 'construct' discursive practices, such as water-sustainability discourse.

c. Discursive Practices

As Fairclough (1992) observes, discursive practices entail the generation of the text in a social context, including the production, interpretation, and consumption of the text. Therefore, the study focused on text production, the agents producing the text, distribution, interpretation, and the audience reading the text. For instance, the chair's letter presented annual accounts to stakeholders on the organisation's socio-economic and environmental performance. Organisations also communicate their accounts of sustainable practices to their stakeholders in sustainability reports, with a chair's letter demonstrating accountability in order to gain an SLO, which then legitimises the mining industry practices (Herlin and Solitander, 2017).

The analysis in this study focuses on key elements of discursive practice, which highlight the cognitive ideologies of individuals and institutions. An ideology is a systematic intellectual framework of ideas that encompasses normative beliefs and values (Fairclough, 1989). As an

intellectual framework, an ideology is manifested through language (Fairclough, 2001). Hence, this study focuses on key elements of discursive practice such as the genres, interests, and actions of agents, extractive organisations, and their stakeholders (van Leeuwen, 2013). For instance, interests reveal promoted motives driving the adoption of extractive practices in the text. Therefore, the study examines how discursive practices construct water-sustainability practices, thereby revealing the link between ideology and language.

d. Social Practices

Using CDA, Fairclough (1992) shows that language constructs social practices in a social context. Therefore, language analysis entails the inclusion of the social structure (including history, society, culture, economic, and political aspects), which highlights how the social context influences language to construct social practices. In other words, the construction of social practices entails a reciprocal relationship between language and social context.

Hussein (2018) investigated the construction of the discourse of water scarcity in Jordan and concludes that the water issue encompasses a single dominant discourse with two narratives: water insufficiency and water mismanagement. This dominant discourse thus emphasises external-social and environmental causes – such as nature, refugees, and neighbouring countries. However, Hussein (2018) fails to address the 'accountability' of those organisations escalating the water issue, including mining industry organisations. The dominant discourse might be influenced by Jordan's economic dependence on extractive resources, especially as a source of foreign currency (Tarawneh, 2016). Therefore, the social context could be influencing the adoption of sustainable practices in the mining industry.

Furthermore, the networking of social practices constitutes a social order, or 'order of discourse' (Fairclough, 1992). The order of discourse entails a social structuring of different discourses, narratives, and genres in a social context (Fairclough, 2001), including dominant, hegemonic, sanctioned, marginal, oppositional, and alternative discourse.

Dominance enables the 'mainstreaming' of discourse (Fairclough, 1992; Laclau and Mouffe, 1985). This legitimises discourse as common sense, which sustains the relations of domination (Fairclough, 1992). Dominant discourses influence communicative events, which construct social practices (Herlin and Solitander, 2017). For example, dominance-sanctioned governmental discourse might influence which social practices are disclosed in communicative events such as sustainability and CSR reports.

A hegemonic discourse uses language to cultivate ideological 'consent' at the subconscious level and thereby dominate the masses (Mouffe, 2014; Spence, 2007). For hegemonic discourse to dominate, hegemonic groups need to demonstrate proficient persuasion skills in the construction of the discourse, whilst abstaining from coercive authoritarian dominance (Gramsci, 1971; Mouffe, 2014; Spence, 2007). Thus, hegemonic discourse dominates via obtaining 'consent' to the status quo, the 'common sense' practice, and the 'normal' issues. For these reasons, this study used CDA to reveal the hegemonic discourses evident in written documentation, semi-structured interviews, and focus groups.

4.5.2.2 Methodological 'Soundness'

Studies using CDA can encounter difficulties with identifying and explaining methodological 'soundness', due to the lack of a step-by-step guide (Blommaert and Bulcaen, 2000). Therefore, there are challenges in demonstrating thorough and systematic text analysis, or methodological 'rigour' (Singleton and Straits, 2005). Additionally, it can be difficult to demonstrate methodological 'reflexivity' to delegitimise the status quo, thereby rendering reality as malleable rather than immutable (Johnson and Duberley, 2003). However, studies embracing CDA question and challenge the status quo to enable change in a social context (Fairclough, 2001).

In essence, the discursive approach maintains a subjective ontological position, thus lacking methodological 'toolkits' or standard quality criteria for text analysis (Jørgensen and Phillips, 2002). However, studies require a methodological typology to demonstrate the legitimacy and quality of text analysis (Johnson et al., 2006).

As this study embraces CDA, text analysis was used to inductively derive cognitive ideologies, perceptions, and opinions through close readings of the text, against the background of the discourse-analytical approach, specifically the Fairclough (2001) dialectical-relational model (Wodak and Meyer, 2009). However, a methodological typology must encompass a quality criterion, which underlies the qualitative-text analysis approach (Merkl-Davies et al., 2011). Using such a typology, a study can demonstrate the legitimacy and quality of text analysis in 'interpretive-narrative' research, specifically in CDA.

According to Merkl-Davies et al. (2011), if studies lack a methodological typology that encompasses a quality criterion, their text analyses will lack legitimacy and quality in terms of their content and discourse analysis. Consequently, the authors suggest four broad criteria to

capture methodological 'soundness' in text analysis, namely authenticity, coherence, fruitfulness, and transformation.

From a social constructivist perspective, the researcher chooses the methodological approach and data collection methods to interpretively analyse the discourse. Therefore, *authenticity* entails the notion of constructivism and the subjective disclosure of the participants' experiences, perceptions, and opinions of cleaner water and sanitation (Merkl-Davies et al., 2011). Furthermore, authenticity entails the manifestation of 'voice' – for example, of the extractive organisations and their stakeholders.

However, ***c****oherence* relates to the 'soundness' of the text analysis and requires a systematic approach to identifying and interpreting patterns of discursive practices for systematic linguistic analysis of the corporate narrative. Therefore, the study embraces the van Leeuwen (2013) linguistic systematic analysis, which entails highlighting of key elements of text analysis, such as genres, motives, actions of agents, and audience.

Meanwhile, *fruitfulness* refers to the ability to obtain explanations from text analyses. The discursive approach should expand the understanding of the phenomena, thereby contributing to the knowledge (Merkl-Davies et al., 2011).

Moreover, discursive approaches should demonstrate either internal or external transformation. Since CDA challenges the status quo by revealing taken-for-granted social practices, the discursive approach demonstrates a fruitful external transformation of society, addressing injustice, racism, and inequality. Therefore, Fairclough (2003) argues that CDA entails 'social transformation' as embedded in the Fairclough (2001) tri-dimensional discourse model. The Fairclough (2001) dialectical-relational approach to text analysis entails identifying possible solutions to problems such as taken-for-granted social practices.

As this is an interpretive text analysis study, the Merkl-Davies et al. (2011) criteria for methodological 'soundness' was suitable for critically analysing the discourse found in the subjective written documentation, focus groups, and semi-structured interviews. These criteria emphasise methodological 'flexibility' in text analysis, especially in achieving data saturation in CDA. Therefore, this study abstained from implementing a rigid qualitative approach such as word count frequency.

In a positivistic sense, a qualitative approach detracts from the reliability and validity of the findings (Bryman and Bell, 2003; Guba et al., 1997). However, the Merkl-Davies et al. (2011) quality criteria capture methodological 'soundness' in text analyses, as demonstrated in the

studies of Atkins et al. (2018) and Carels et al. (2013). As such, the interpretive approach facilitated responses to the subjective research questions in this study.

In light of this discussion, the study embraces the Fairclough (2001) dialectical-relational approach and applies the van Leeuwen (2013) linguistic systematic analysis, whilst also adhering to the Merkl-Davies et al. (2011) quality criteria that capture methodological 'soundness' in text analyses. This approach enabled the study to subjectively capture the socially constructed discourse of extractive organisations and their stakeholders.

4.5.3 Data Saturation

In terms of data saturation, qualitative studies might lack sufficient 'quantitative' instruments for measuring significance level, confidence interval, and consistency level (Bryman and Bell, 2003). Therefore, scholars must make 'quality' judgements regarding the significance of the data collected during the fieldwork and their confidence in them. That is, the scholar must determine whether 'new' narratives and discourses have emerged from the fieldwork – in this case, the semi-structured interviews and focus groups.

In this study, data saturation was determined to have been reached after the narrative and discourses had converged significantly, specifically after the 12th semi-structured interview and third focus group. However, the supervisory team highlighted the possibility of new narratives and discourses emerging within the case study. Therefore, the study re-contacted the gatekeepers, as well as personal connections and family networks, to expand the scope of the fieldwork.

However, the study did not yield any new narratives or discourses, which may have been because of the dominance of the sub-narrative and discourses. It was thus determined that 20 semi-structured interviews and four focus groups could feasibly address the sub-research questions.

4.5.4 Data Analysis

Prior to the data analysis, the researcher fed the written documentation and the transcripts of the semi-structured interviews and focus groups into the NVivo qualitative management software. This tool facilitates the building of a corpus of text and discursive practice to reveal unanticipated sub-narratives and discourse. Using NVivo, the researcher explored the data collected and analysed, using word count, text query, and text trees. This revealed 'in vivo'

data for coding in the first cycle of analysis. This involved the creation of nodes to establish categories for sub-narratives and discourses.

In the first cycle, a thematic analysis was conducted for both the interview and focus-group questions. The researcher then reflected on the theoretical framework constructs from the Mitchell et al. (1997) stakeholder salience framework and established 70 nodes, which matched the themes of the interview and focus group questions as well as the theoretical framework constructs. For example, the water sustainability node in NVivo encompasses the questions and answers for a particular stakeholder, specifically on water sustainability.

In the second cycle, the researcher further explored the transcripts of the interviews and focus groups to generate new nodes that did not fit into the pre-coded nodes in NVivo. This led to the establishment of eight nodes encompassing new sub-narratives and discourses. The cluster tool was then used, which categorised a total of 40 nodes.

In the third cycle, the researcher analysed and evaluated utilised the word 'tree map' to identify patterns and relationships between nodes. The researcher then subjected the sub-narrative and discourse nodes to a critical evaluation, deploying the scholarly literature and theoretical framework constructs. This reduced the numbers of nodes to four first-order nodes, eight second-order nodes, and 14 sub-nodes.

The researcher conducted an in-depth analysis of the data and nodes in the case study and identified case-specific patterns and relationships between the data and nodes. In addition, the researcher conducted a cross-sectional analysis across the case study to reveal the patterns and relationships between stakeholder cases. On this basis, the researcher classified the nodes into four main categories, which informed the presentation of the analysis and discussion chapters, namely 'SDG 6.3: Water Quality and Wastewater', 'SDG 6.4: Water Use and Scarcity', 'SDG 6.5: Water Resource Management', and 'SDG 6.6: Ecosystem'. Please see Figure 4.4 below.

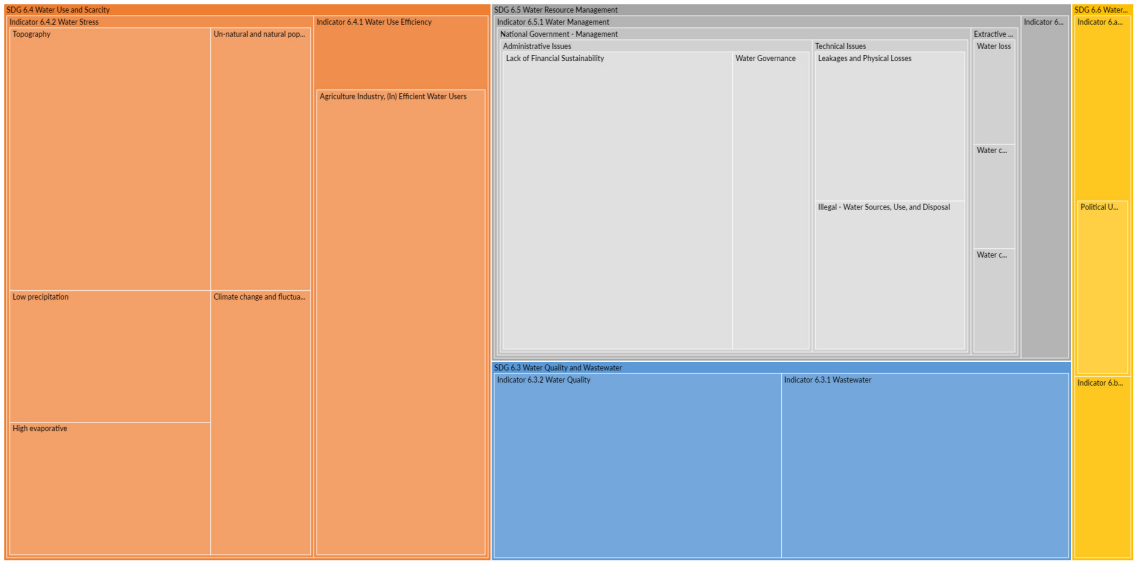

Figure 4.4 Cluster Tool – Data Concentration in Nvivo

4.6 Reliability, Validity, Reflexivity, Generalisation, and Bias

All research methods have drawbacks concerning reliability, validity, bias, and/or generalisation (Saunders et al., 2008). Research rigour involves discussions of reliability and validity (Davies and Dodd, 2002). Curry, Nembhard, and Bradley (2009, p.1444) suggest that research rigour incorporates 'systematic collection, organisation, and interpretation of data in accordance with rigorous and widely accepted techniques for research strategy, sampling, data collection, and analysis'.

Reliability refers to the replicability of procedures and results (Golafshani, 2003). In essence, reliability depicts 'consistency' between epistemological and methodological logic, so that the descriptive data yielded portrays ontological similarities and differences in richness and ambience (Leung, 2015).

Validity refers to the appropriateness of the methods, procedures, and data. When assessing validity, the challenge begins with the alignment of the research ontology and epistemology (Leung, 2015). As inductive reasoning with an interpretive approach was adopted for this study, the CDA combined with methodological triangulation enabled the gathering of subjective knowledge. Content validity refers to the adequacy and effectiveness of research measures, ensuring that the research measures reflect the 'truth' within a phenomenon (Golafshani, 2003). For this purpose, the findings of this study were reviewed with a supervisory team and scholarly experts who possess knowledge and experience in the research

field. These individuals came from the University of Sheffield and the PSUT, the funding body (Zohrabi, 2013).

Internal validity refers to the congruence of research findings with reality (Golafshani, 2003). This was assessed in the current work by inviting the participants to review the transcripts to confirm and validate the research findings (Zohrabi, 2013). Some participants requested adjustments to the transcripts of the interviews and focus groups. To support these adjustments, they delivered secondary data (written documentation) such as corporate reports, government reports, and academic publications. Accordingly, the requested amendments were then made by omitting or paraphrasing the text. This enabled the study to demonstrate the integrity of the transcripts derived from the semi-structured interviews and focus groups.

On the other hand, external validity is concerned with the 'applicability' of the research findings to alternative settings. This is also referred to as 'generalisation' (Golafshani, 2003). Usually, qualitative research focuses on a specific phenomenon in a particular context; therefore, generalisation of qualitative research findings would be an unusual attribute (Zohrabi, 2013). Regarding the current study, there was no intention to generalise the findings to contexts and situations other than those under analysis, although some narratives and understandings might reoccur in other situations.

With regard to reflexivity, the researcher acknowledges that their nationality, gender, and background underpin their understanding of the stakeholders' perspectives, as well as the study context. Therefore, the researcher deployed constant and conscious reflexivity, which required questioning and reflecting on 'individual' opinions, assumptions, perceptions, and experiences (Gabriel, 2015). The researcher also created a reflexive audio recording following each of the interviews and focus groups.

To elucidate, the researcher is a Jordanian woman from a Bedouin tribe. In the context of this study, the researcher, as a Jordanian, was perceived by the participants to hold taken-for-granted knowledge regarding their reality, specifically on water cleanliness and sanitation in Jordan. Furthermore, the researcher, as a woman, had limited access to the male groups of participants. However, the researcher's Bedouin background facilitated access to a private and hidden way of life. Therefore, by accounting for the positionality of the researcher, the study was able to present a reliable, valid, and ethical perspective (Gabriel, 2015; Guillemin and Gillam, 2004). Furthermore, the researcher acknowledged the risk of bias in interpretive and social constructivist research and endeavoured to constructively mitigate this risk.

Qualitative research bias is commonly discussed in terms of influences that distort research findings (Morse et al., 2002). This is a source of academic debate due to its incompatible philosophical underpinning with subjective research (Galdas, 2017). However, it was mitigated in the current study using participant validation, field expert engagement, pilot testing, and comparisons of the participants' individual accounts (Noble and Smith, 2015).

4.7 Research Limitations

Given the nature of the topic, the researcher acknowledged that challenges and limitations would emerge. The first of these relates to the credibility and trustworthiness of the knowledge (Bryman and Bell, 2003; Guba et al., 1997), for example, the local-community narratives and discourses. Furthermore, there is debate around the appropriateness, reliability, replicability, and validity of the knowledge produced by studies that embrace an interpretive (social constructionist) approach (Bryman and Bell, 2003; Guba et al., 1997). Second, the researcher could have expanded the stakeholder sample to include other unforeseen stakeholders, such as religious leaders, parliamentary representatives, and refugees. Third, power relations and dynamics have several dimensions beyond the socio-economic and environmental, including the technological, political, cultural, and religious. However, these power relations and dynamics are not static; rather, they are ever-changing. Fourth, the research had to rely on memory and handwritten notes for those participants who exercised their right to object to audio recordings of their interviews. An audio recording could have compensated for the natural limitations of the researcher's memory and allowed for a richer and deeper understanding and analysis of the discursive practices. Fifth, the researcher encountered time pressures that limited both the collection of data and the stakeholder sample. Therefore, the researcher focused only on stakeholder challenges regarding access to clean and sanitary water resources.

4.8 Summary

In summary, this study investigated the challenges associated with accessing clean and sanitary water, as seen from the perspective of extractive organisations and their relevant stakeholders in Jordan. In doing so, it brought to light the issues that might be affecting Jordan's fulfilment of SDG 6. The study embraced subjectivism as its ontological position, as well as a social-constructionist epistemology and an interpretive approach. This research philosophy permitted the interpretation of the phenomena through inductive methodical approaches that enquire into subjective meanings and the interpretation of multi-stakeholder perspectives.

The study also adopted an explanatory case study design, focused on the perceptions and understanding of extractive organisations and their diverse stakeholders, as these perceptions could be affecting the achievement of SDG 6 in Jordan. Regarding the case study selection, only two extractive organisations are operating in the mineral-mining industry in Jordan. Thus, this case study is representative of the population. Whilst it might appear small, CDA depends more on the *depth* of the analysis than the *quantity* of the texts or discursive practices considered (Nwagbara and Belal, 2019). Furthermore, an explanatory case study permitted in-depth descriptions and interpretations, thus revealing nuances in understanding of water sustainability and the legitimisation of related practices. The researcher embraced triangulation to highlight different discourses and narratives, thus reflecting the multi-fractured, complex nature of the water issue. By combining different methods, the study was able to capture the challenges regarding cleaner water and sanitation and their impact on Jordan's pursuit of SDG 6. This methodological triangulation involved the use of secondary sources, focus groups, and semi-structured interviews, as well as observations (Bryman and Bell, 2003; Saunders et al., 2008).

The researcher employed secondary sources and semi-structured interviews to investigate the challenges of national government and extractive organisations regarding cleaner water and sanitation, thus answering the first sub-research question (section 1.2). The researcher also employed semi-structured interviews to investigate the salient stakeholders' perceptions of water issues at the national and local levels (specifically, stakeholders from international organisations, NGOs, and local authorities). The researcher also conducted focus groups to investigate the challenges of less salient stakeholders, specifically local-community members. The researcher conducted semi-structured interviews and focus groups collectively to answer the second sub-research question (section 1.2).

By bringing to light the challenges for extractive organisations and their relevant stakeholders, the researcher sought to identify the water-related challenges that might be influencing Jordan's pursuit of SDG 6. This responded to the third sub-research question (section 1.2).

The researcher conducted a CDA to inductively derive narratives and discourses from the qualitative data that emerged from the qualitative investigations – specifically, from the written documentation, focus groups, and semi-structured interviews. The CDA explored the perceptions, opinions, and experiences of the extractive organisations and their stakeholders regarding clean water and sanitation, and the observations then added more in-depth and detailed descriptions of this qualitative information.

In light of this methodological approach, the study embraced the Fairclough (2001) tri-dimensional model, applying the van Leeuwen (2013) linguistic systematic analysis, which adheres to Merkl-Davies et al. (2011) quality criteria that capture methodological 'soundness' in text analyses. This enabled the researcher to subjectively capture the socially constructed discourse of extractive organisations and their stakeholders.

Reliability, validity, reflexivity, generalisation, and bias were also discussed in relation to the study, alongside ethical implications regarding access, anonymity, confidentiality, informed consent, and safeguarding data. Finally, the researcher reflected on the limitations of the study.

Chapter Five: Contextual Background and Secondary Data Analysis

Introduction

This chapter presents contextual details regarding water resources in Jordan, including hydrological features and facts, as well as the institutional framework. It also examines and analyses written documentation revealing the governmental and corporate narratives and thereby the social construction of the hegemonic water scarcity discourse in Jordan. The chapter then examines the registered non-participatory observation of cooperation and struggles to socially construct meaning within discursive fields, specifically among national government ministries, international organisations, and NGOs. The chapter then considers the influence of extractive and mining operations on stakeholders' water provisions, and the water provisions of local community member stakeholders are examined.

5.1 Background Information

Globally, the water situation in Jordan is frequently described as one of water scarcity, shortage, stress, and starvation. However, these terms lack specificity regarding the particular Jordanian context.

To better explain water scarcity, this chapter provides contextual details regarding water resources in Jordan. First, it discusses Jordan's hydrological features, including rainfall precipitation, water resources, and water users. These serve as sub-narratives to construct dominant narratives and the hegemonic discourse in order to construct the social water-related practices at the micro, meso, and macro levels. Second, the study presents the institutional framework of the water-scarcity issue to highlight multiple voices at the micro, meso, and macro levels that might be constructing the hegemonic discourse of water scarcity.

5.1.1 Hydrological Features and Facts

In Jordan, the largest amounts of rainfall is found near highly populated areas, namely in the middle and north of the country. The northern region has the highest concentration of rainfall, up to a maximum of 700mm per year (MWI, 2017), while in the central region, rainfall concentration reaches approximately 300mm per year (MWI, 2017). Towards the south, the rainfall precipitation decreases considerably to less than 100 mm per year (MWI, 2017).

Therefore, renewable water resources amount to less than 100m^3 per person per year, which is below the global line of 500 m^3 per person that determines absolute water scarcity (MWI, 2017).

Rainfall feeds the 14 surface water resources and 12 underground water basins in Jordan. The safety yield for renewable underground water is 275 million cubic metres (MCM). However, the 12 main underground water basins are being depleted beyond their recharge volume (MWI, 2017): in other words, the water resources' depletion rate due to water overdraft is higher than the recharge rate.

As Jordan is a water-stressed country, water harvesting is a priority. Therefore, the national government has sanctioned the construction of dams for water harvesting. There are 11 dams, with a total storage capacity of 270 MCM, located in the north and middle of the country, as well as three dams with a total storage capacity of 30 MCM located in the south. Jordan thus has 14 dams in total, with a total storage capacity of 350 MCM (MWI, 2017).

Most water sources (59%) are underground, with 27% surface water and 14% treated wastewater. Water resources are primarily distributed between domestic use (52%) and agricultural irrigation (45%), with 3% for industrial operations (MWI, 2017).

The southern region of Jordan suffers from an insufficiency of water resources due to the high evaporation and low precipitation, which also explains the small number of water-harvesting dams in the south. Furthermore, the water overdraft for the limited underground water resources means the depletion rate is exceeding the recharge rate. Conversely, the northern region has the highest precipitation rate. However, due to its population size, it has a higher demand for water resources. Therefore, the water overdraft of the limited underground water resources is also causing the depletion rate to exceed the recharge rate in this region.

5.2 Institutional Framework

This section presents the institutional framework for the hegemonic discourse regarding water scarcity in Jordan. It identifies the relevant stakeholders from the public and private sector and civil society who are associated with the construction of the hegemonic discourse. That is, these stakeholders may influence narratives and discourse at the micro, meso, and macro levels. Table 5.1 below outlines the typology of these multiple voices.

Table 5.1 Typology of Stakeholder Voices

Stakeholders Voices	Institutional Framework	Actors / Stakeholders
Supra	International Community	International Organisations
Macro	Public Sector Institutions: National Government	Ministry of Planning and International Cooperation, Ministry of Energy and Mineral Resources, Minister of Water and Irrigation, and Ministry of Environment.
Meso – Tire 1	Private Sector Institutions: Mining Industry	Extractive Organisations.
Meso – Tire 2	Civil Society Institutions	Non-Governmental Organisations, Journalists and University Academics.
Micro	Civil Society: Local Government & Community Members	Local Municipality. Farmers, *Bedu*, Townsmen and Women.

5.2.1 Supra Discourse

International Community: International Organisations

In Jordan, international organisations communicate the international discourse and operationalise the SDGs, with guidance and support from the national government (Ministry of Planning & International Cooperation, 2017). To operationalise the Agenda 2030 SDGs, the international organisations provide the national government with support and funding, such as loans, grants, technical expertise, and assistance (Ministry of Planning & International Cooperation, 2017). As a result, the international organisations hold and exercise the power to influence national plans and strategies, such as the 'Jordan 2025: National Vision and Strategy'.

Furthermore, the international organisations communicate the international discourse to NGOs, which provide guidance and support regarding local issues in Jordan (Ministry of Planning & International Cooperation, 2017). Thereby, the international organisations influence the cognitive understanding of the national government and NGOs regarding Agenda 2030 and SDG 6. Figure 5.1 below outlines the flow of discourse.

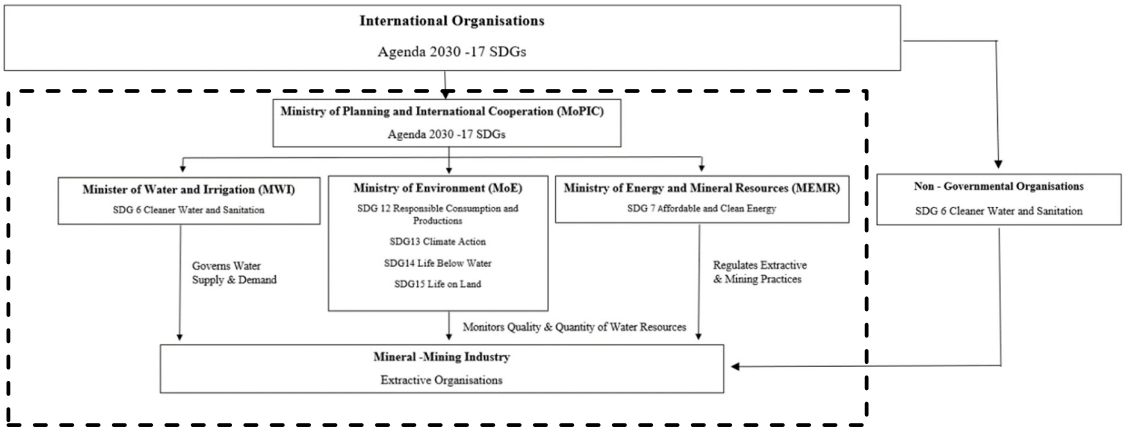

Figure 5.1 Flow of Discourse

5.2.2 Macro Discourse

Public Sector Institutions: National Government Ministries

In Jordan, the king is the monarch of the Royal Hashemite Kingdom. He exercises power, based on cultural, political, and religious legitimacy (Schlumberger and Bank, 2002). Therefore, he has the power to guide both the parliament and national government (Schlumbergera and Bank, 2002), which shape, sanction, block, and resist policies and regulations in Jordan.

At the national level, the government consists of multiple ministerial authorities, which protect and comply with the national constitution of the Royal Hashemite Kingdom of Jordan. The government ministries govern compliance with national laws, regulations, and standards, such as water governance and the extractive and mining codes (Jordanian national government, 2020). To govern, government ministries use language to construct discursive practices and inform social practices. Therefore, multiple government ministries are involved with addressing the water-scarcity issue, as well as communicating both compliance and engagement with SDG 6. These include the MEMR, the MoPIC, the MWI, and the MoE. Please refer to figure 5.2 below, which overlaps with figure 5.1. However, figure 5.2 only outlines and focuses on the flow of discourse through the national government.

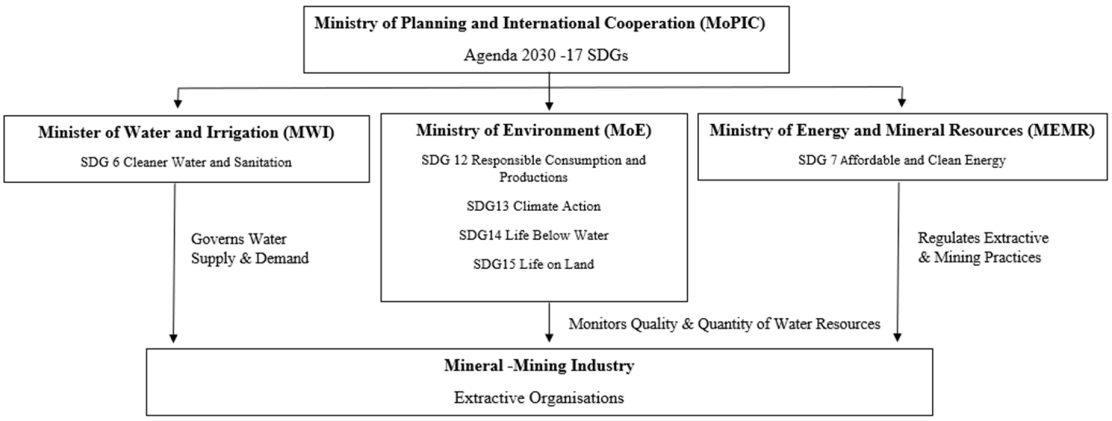

Figure *5*.2 Flow of Discourse through the National Government

In Jordan, the MoPIC is the *liaison* between international organisations and government ministries (Ministry of Planning and International Cooperation, 2020). It is responsible for communicating the international agendas to other government ministries, such as the MWI, the MoE, and the MEMR. Thus, the MoPIC plays an important role in communicating, committing to, and engaging with the Agenda 2030 SDGs (Ministry of Planning & International Cooperation, 2017).

Since 2015, the MoPIC has been communicating the international discourse and leading the implementation of the SDGs, with support from the UN country team in Jordan (Ministry of Planning & International Cooperation, 2017). The MoPIC has worked with other government ministries to manage and coordinate the implementation of Agenda 2030, thereby influencing the cognitive understanding of these other ministries.

The MWI is the official ministry responsible for regulating, monitoring, and managing the water sector (Ministry of Water and Irrigation, 2020). It communicates commitment to and engagement with SDG 6 (Ministry of Planning & International Cooperation, 2017). The MWI has the official jurisdiction to make decisions and take action regarding water status and SDG 6 in Jordan.

The MWI also outlines and constructs water plans, strategies, policies, and goals. The ministry is responsible for issuing permits and licences, as well as the procurement of financial capital for water projects. The MWI encompasses two agencies relevant to this study, namely the Water Authority of Jordan (WAJ) and the Jordan Valley Authority (JVA). The WAJ is responsible for the conservation, development, and allocation of water resources for the whole country (Ministry of Water and Irrigation, 2020), whilst the JVA is responsible for the

conservation, development, and allocation of water resources in the Jordan Valley (Ministry of Water and Irrigation, 2020).

In this respect, the extractive organisations operate under the jurisdiction of the MWI; in particular, the ministry governs the organisations' use of limited water resources in the mining industry. Therefore, the MWI has utilitarian power to influence extractive organisation water-related practices in Jordan.

The MoE is the official ministry responsible for protecting and monitoring the natural environment and thus conserving natural resources (Ministry of Environment, 2020). The MoE is responsible for formulating effective environmental plans, strategies, and policies. It communicates a commitment to and engagement with SDGs 12, 13, 14, and 15 (Ministry of Planning & International Cooperation, 2017). The MoE lacks jurisdiction over the extractive organisations in Jordan. However, it only monitors and communicates the condition of water resources in Jordan: in other words, the MoE has a limited sphere of action with respect to the use of water resources in the mineral-mining industry.

The MEMR is the main regulator and instigator of extractive and mining activity in Jordan (Ministry of Energy and Mineral Resources, 2020). Therefore, it communicates a commitment to and engagement with only SDG 7 (Ministry of Planning & International Cooperation, 2017). The ministry provides extraction licences to organisations in the mining industry. To obtain a licence, the organisation must adhere to the environmental protection law No.1 (2003), which requires the submission of an environmental impact assessment (EIA).

The EIA aims to identify the socio-economic and environmental impact of a project at all phases. It mandates that organisations outline their operations and practices for limiting their adverse impact on the natural environment, such as the water resources (Ministry of Environment, 2003). Therefore, the MEMR has coercive power to influence organisations' extractive and mining practices in Jordan.

As indicated above, multiple national government ministries are involved in addressing the water-scarcity issue, as well as communicating, committing to, and engaging with SDG 6 in Jordan. Therefore, the national government has different voices, each highlighting a different understanding of Agenda 2030. This investigation highlighted that some ministries have stronger voices than others and this might influence, first, understanding of Agenda 2030 (particularly SDG 6), and second, understanding of sustainable water-related practices in the

mining industry. In the following section, the study introduces the mineral-mining industry in Jordan.

5.2.3 Meso Discourse – Tier 1

Private Sector Institutions: Extractive Organisations in the Mining Industry

Mineral mining is a major industry in Jordan. There are just two organisations that extract earthbound minerals from the southern region of the kingdom, namely the APC and the JPMC (Al Rawashdeh et al., 2016). The principal activity of these organisations is the production of phosphate or potash, which are the main constituents of N-P-K fertilisers. The mineral mining industry contributes 3.3% to the country's GDP, and – when combined with related manufactured fertiliser products – this contribution reaches 9% (Central Bank of Jordan, 2018). The mineral mining industry employs more than 8,764 people from the surrounding local communities (Department of Statistic, 2017).

However, these extractive organisations use either dry or wet processes, which consume, contaminate, and waste the limited water resources. The JPMC[16] is located in the central-southern side of Jordan and uses limited underground water from water wells and basins (JPMC, 2018). The organisation uses a wet process to separate phosphate from waste rock, which causes wastewater (JPMC, 2018) and contaminates the water provisions. However, phosphate wastewater can be used to fertilise and irrigate agriculture, due to the inferior levels of toxic heavy metal elements in phosphate rock (El-Hasan, Abdelhadi and Abdelhadi, 2017). Figure 5.3 below provides a depiction of the phosphate mining process.

[16] In the mining industry, organisations extract ore from the mine site through either open-pit or underground mines. The extracted ore is processed to produce a saleable concentrated product through crunchers and grinding mills. The raw mineral is then mixed with water in a mixing tank and thickening tank, which is the 'wet process'. Raw mineral lacking economic value – such as waste rock and tailing – is extracted. The material lacking economic value is stored in tailing storage facilities. However, the raw mineral passes through a pressured water tank for filtration (Mudd, 2007, 2010). Finally, the raw mineral is transferred to refineries for purification and preparation to be stored in warehouses.

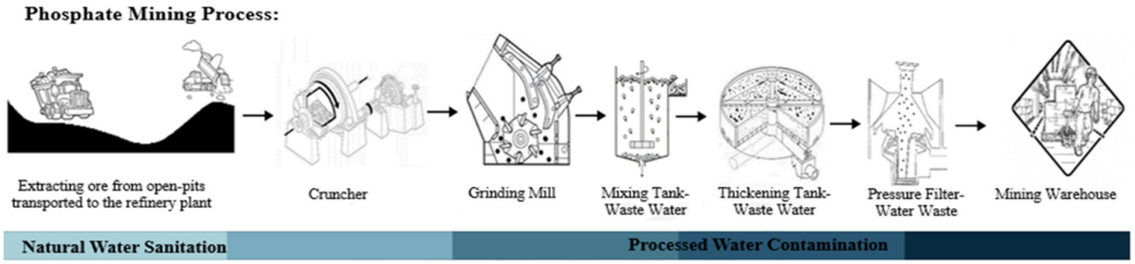

Figure 5.3 Phosphate Mining Process in Jordan

The APC[17] is located to the south of the Dead Sea and uses surface water from harvesting dams and underground water wells (APC, 2018). The organisation uses the dry process, which entails evaporating water to extract potash (APC, 2018); and as a result, limited water resources are wasted through evaporation. The water levels in the Dead Sea are plummeting by one metre each year (Ministry of Waste and Irrigation, 2018). However, the organisation harvests the evaporated water to nourish and grow agricultural crops. Figure 5.4 below provides a depiction of the potash mining process.

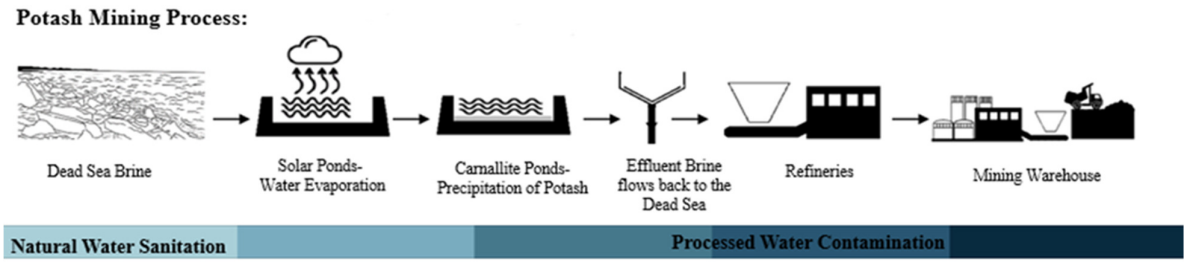

Figure 5.4 Potash Mining Process in Jordan

The MoE (2016) has reported that Jordan's water provisions are suffering under the pressure exerted by the mining industry's extractive, processing, and trading activities. Furthermore, al Rawashdeh et al. (2016) investigated the impact of extraction and mining on local communities by comparing socio-economic and environmental conditions in the southern region of Jordan and revealed that extractive and mining activity was responsible for lower-than-average environmental conditions, with a particular impact on water resources (Al Rawashdeh et al., 2016).

[17] In the Potash mining process, Dead Sea brine is pumped into solar ponds for water evaporation. The raw mineral is then mixed with water in carnallite ponds; and due to the through gravity of the raw mineral, the brine precipitates in the pond. The precipitation is transferred to pressured water tanks for filtration and the effluent brine flows back to the Dead Sea. The effluent brine contaminates the saltwater lake or Dead Sea. Finally, the raw mineral is transferred to refineries for purification and preparation to be stored in warehouses.

Water sustainability is a critical issue, especially in water-intensive industries. Hence, the study infers that mineral extractive organisations might be utilising limited water resources in Jordan. Furthermore, the extractive organisations might lack a comprehensive water-management strategy based on water-related practices that might improve the efficiency of their extractive and mining practices. As a result, the organisations might be hindering national efforts towards the attainment of SDG 6.

Following the SDG Compass aligned with the GRI guidelines, the activities of extractive organisations have a direct impact on efforts to meet four SDG 6 targets: SDG 6.3 (on water quality and wastewater), SDG 6.4 (water use and scarcity), SDG 6.5 (water-resource management), and SDG 6.6 (water-related ecosystems and biodiversity). Therefore, although all SDG 6 targets are equally important, this study focuses on revealing the extractive organisations' direct impact on these four.

The extractive organisations are expected to communicate through their corporate discourse and narrative their commitment to and engagement with SD and SDG 6. However, the organisations do not appear to be implementing water-management practices, which raises questions. This study argues that, due to their contributions to socio-economic growth and development at the national and local levels, extractive organisations have the power to advance their own interests in the country. For instance, they have access to the limited natural resources they need to sustain their mining practices. The following section introduces the civil society institutions in Jordan.

5.2.4 Meso Discourse – Tier 2

Civil Society – Institutions

In this study, civil society comprises numerous different institutions, thus, voices that provide topical information regarding water scarcity as well as SDG 6, such as NGOs, journalists, and university academics.

In Jordan, international organisations communicate the international discourse to NGOs, which provide guidance and support regarding local issues (Ministry of Planning & International Cooperation, 2017). Therefore, NGOs are actively involved in water environmental initiatives, projects, and agendas, especially in monitoring SDG 6 indicators and implementing projects and plans regarding SDG 6. The NGOs only monitor and audit the extractive organisations' depletion of water resources and thus have a limited sphere of action in this field.

However, academics and journalists provide topical information on the water states, water sustainability, and extractive organisations in Jordan. They also promote the multifaceted voices of stakeholders, such as those of the government, extractive organisations, and local communities. In this way, they communicate the sanctioned mainstream discourse, whilst also highlighting those marginalised, alternative narratives that oppose water scarcity.

5.2.5 Micro Discourse

Civil Society – Local Government & Community Members

At the local level in Jordan, the municipal authority is responsible for communicating and implementing the legislation and regulation that govern local communities. Therefore, the municipalities hold both executive and legislative authority, which is delegated by the national government (Jordanian national government, 2020). The municipal authority also represents the local community – such as farmers, townsmen and women, and Bedouin tribes – and gives a voice to their concerns regarding water issues. For this reason, the municipal authority has the power to influence the organisations' practices, specifically through its use of coercive power via the 'local-community card'.

Jordan is well known for its diverse social structure, which challenges power and dominance. It comprises, amongst others, farmers, townsmen and women, and *bedu*. In Jordan, power resides with the king, as well as those close to the Crown, such as the socio-economic and political elite (Hussein, 2016). Since the establishment of the kingdom, the Bedouin tribes have been loyal, forming the backbone of the monarchy. Through their loyalty to the monarch, the Bedouin tribes secure access to economic-political resources and territory. Furthermore, the Bedouin tribes are able to hold governmental and military positions in Jordan. Therefore, for historical reasons, the Bedouin tribes have the power to influence the shape of politics, as well as constitutional laws, legislation, and parliamentary policies (Hussein, 2016).

The sheikh of a tribe commands the respect and loyalty of elite members and maintains vast amounts of land and livestock. Therefore, the sheikh is permitted access to the king, as well as other socio-economic and political elites within the discursive arena, such as the royal court (Hussein, 2016). In this way, the sheikh obtains the power to influence the dominant discourse, which constructs the hegemonic discourse.

As such, the study argues that not all *bedu* have equal power and dominance in Jordan. Some *bedu* voices might be marginalised due to their geographic distance from the capital, Amman.

Moreover, these *bedu* are a social group who follow a nomadic or semi-nomadic lifestyle in the desert and therefore rely on raising livestock for their livelihood, which requires relocating closer to water resources in the Badia region.

Therefore, this study captures only the perspectives and experiences of those nomadic to semi-nomadic Bedouins residing in proximity to the two extractive organisations. These participants' perspectives and experiences might differ due to the different attributes of their respective areas. Furthermore, the Bedouins' perspectives and experiences cannot be generalised, due to the diversity of the Bedouin tribes in Jordan.

Similarly, farmers exercise the power to influence the dominant discourse, which constructs the hegemonic discourse. Large-scale farmers have representatives in parliament who lobby to influence policymakers (Hussein, 2016). In this way, these farmers obtain access to limited water resources and agricultural land (Hussein, 2016). However, small-scale farmers can be marginalised due to their lack of economic-political power. Therefore, in Jordan, small-scale farmers need to join labour unions to have their voices heard and their interests taken seriously.

In municipalities, townsmen and women are concerned with protecting their access to limited water resources, as well as the hygiene, cleanliness, sanitation of the water. However, the voices of some townsmen and women might be marginalised due to their geographic distance from the capital and other large cities (Masharqa, 2012). This study highlighted the marginalised subaltern narratives and discourse in Jordan to reveal any sustainable water-related practices that could mitigate the extractive organisations' impact on limited water resources. This was intended to support national efforts towards the attainment in Jordan of SDG 6, specifically targets 6.3, 6.5, 6.4, and 6.6.

5.3 Secondary Sources Analysis – Governmental & Corporate Narratives

As previously explained, this study used written documentation as a secondary source of governmental and corporate narratives, with a focus on scripts and indicators concerning SDG 6 (see Chapter Four, 'Methodology'). These governmental and corporate narratives include ideologies of water sustainability and cognitive understandings of SDG 6.

For Fairclough (2001), text is the key element of discourse: text construction, interpretation, and consumption develop discursive practices in a social context. In this way, text shapes discourse, which constructs social water-related practices.

To unpack the water-scarcity discourse, the study considered text the main element of the discourse, using this to explore the national government and extractive organisation sub-narratives in relation to cleaner water and sanitation. At the macro level, the study identified three key texts that revealed the national governmental narrative and its cognitive understanding of SDG 6. At the meso level, the study identified 13 key texts, concerning seven corporate narratives on responsibility, commitment, compliance, transparent, strategic, accountable and knowledgeable narratives.

The following section examines the governmental and corporate narratives in the written documentation that contribute to the social construction of the hegemonic discourse and water-related practices in Jordan.

5.3.1 National Governmental Narrative

In its reports, the national government emphasises the water scarcity in Jordan. It explains that water scarcity is amplified by the natural environment and socio-economic and political factors. In this way, the national government externalises the causes of water scarcity in Jordan and absolves itself of responsibility. However, it does highlight that the MWI is responsible and accountable for mitigating the issue.

With respect to the Agenda 2030 SDGs, international organisations communicate the international discourse and operationalise the SDGs, with guidance and support from the national government (Ministry of Planning & International Cooperation, 2017). In this way, the international organisations influence the national government's cognitive understanding of Agenda 2030, including SDG 6.

At the national level, the government positions Agenda 2030 and the SDGs within the national context – for example, with its 'Jordan 2025: National Vision and Strategy'. In this way, the international SD discourse influences national plans and strategies. Table 5.2 below presents a list of the key governmental reports.

Table 5.2 Texts – Government Reports

Texts – Government Reports	
National Government Level	Jordan 2025: National Vision and Strategy in 2015.
Ministerial Level	Jordan 2025: A National Vision and Strategy, Jordan's way to Sustainable Development, and the Executive Development Plan in 2017. Issued by the Ministry of Planning and International Cooperation
	Jordan 2025: National Water Strategy in 2017. Issued by the Ministry of Water and Irrigation (MWI)

The MoPIC communicates its understanding of Agenda 2030 in a key text, titled, 'Jordan 2025: A National Vision and Strategy, Jordan's Way to Sustainable Development' and the Executive Development Plan (EDP). In the text, the MoPIC communicates its commitment to and engagement with the 17 SDGs. However, it highlights that although all 17 SDGs are deemed equally important, the level of engagement with each may vary due to the different ministries' spheres of influence in Jordan. As shown in the quotation below, the national government has constructed links between the governmental ministries and Agenda 2030:

> *A mapping was conducted between late 2016 and early 2017, comparing goals, targets and indicators from the 2030 Agenda with the national development framework. This was done with the inclusive participation of a wide range of ministries and government institutions, in cooperation with the UN country team in Jordan. The mapping demonstrated that all goals and most targets are important for Jordan, albeit to varying degrees.*

In this way, the MoPIC, through text and discursive practices, informs the discursive and social practices of other ministries. For instance, influenced by the text, the MWI constructed its own understanding of Agenda 2030 in a key text, titled, 'The Jordan 2025: National Water Strategy'. In this text, the MWI communicates its commitment to and engagement with SDG 6:

> *Will adopt as a national water sector objective, (SDG 6) 'Sustainable management of water and sanitation for all Jordanians'.*
>
> *…will coordinate and lead the implementation of the water-related SDGs, targets and indicators in Jordan…*

It may be that, although the Agenda 2030 SDGs are all deemed equally important, the ministries prioritise those SDGs related to their own core spheres of influence. Therefore, the MWI focuses on communicating its commitment to and engagement with SDG 6.

To demonstrate this commitment, the MWI has ensured that national priorities are aligned with its policies and practices, as well as the global SDGs in the water sector (Ministry of Water and Irrigation, 2016). The MWI also intends to align the international water targets and indicators with those in Jordan:

> *…will align and refine the SDG targets and indicators in the context of the National Water Strategy.*

Overall, the national government might be interpreting the global SD agenda into a national SD agenda. Therefore, the MWI, influenced by the international and national discourse, contextualises SDG 6 using context-specific circumstances, priorities, and issues and has thus constructed a standalone SDG 6 discourse. Consequently, it may deploy the hegemonic discourse and SDG 6 narrative to advance its own social and material interests (e.g., financial sustainability) and demonstrate progress towards SD in the eyes of international actors. Additionally, those social and material incentives might drive the national government's commitment to and engagement with SDG 6.

5.3.2 Extractive Organisations' Narratives

As discussed earlier, extractive organisations can deploy hegemonic discourse in their corporate narratives to elicit the consent of both salient and less salient stakeholders, with the goal of legitimising their water-related practices in the mining industry (see Chapter Three, 'Theoretical Framework'). Furthermore, through their corporate narrative, extractive organisations may construct sub-narratives that counter threats to their legitimacy. Accordingly, this study identified responsibility, commitment, compliance, transparency, strategic, accountable, and knowledgeable as sub-narratives (Appendix Ⅳ).

5.3.2.1 Extractive Organisation A – Potash

'Extractive Organisation A' (EO-A) deploys hegemonic discourse on water scarcity in the narrative in its corporate reports. To maintain the power of the hegemonic discourse, the organisation deploys the dominant water-insufficiency discourse, which entails three sub-narratives: the natural environment narrative; the socio-economic narrative; and the political narrative. In this way, the organisation externalises the causes of water inefficiency and water scarcity. Consequently, EO-A communicates responsibility, commitment, compliance,

transparency, strategic, accountable, and knowledgeable as narratives (Appendix Ⅳ), thereby legitimising its operations and practices in the eyes of its stakeholders.

In its chair's letter, EO-A highlights the water scarcity in Jordan and the detrimental impact of insufficient water resources, particularly on national and religious water bodies, as well as the organisation's operations and practice. The organisation has collaborated with the national government by financing multiple water-supply solutions, such as water-harvesting dams. In this way, EO-A may be driving supply solutions – rather than demand solutions – to reduce the consumption, contamination, and loss of water resources.

With these water agreements, EO-A obtains the right to use the limited water resources at a fixed rate, which provides no incentive for reducing consumption, contamination, and loss. The organisation uses inclusive words such as 'our', 'us' and 'we' throughout the text, which personalises the water issues and water-related solutions and practices. Furthermore, it highlights that financing the construction of water-harvesting dams addresses three objectives: first, supplying drinking water to local communities in the southern regions of Jordan; second, supplying clean and treated water for irrigation of agriculture; and third, supplementing the organisation's own water needs.

Thus, EO-A cultivates the ideological consent of its stakeholders by constructing a win-win strategic narrative. It mitigates hegemonic struggles and legitimacy threats from stakeholders and maintains an SLO, thereby ensuring its access to water resources and sustaining its extractive and mining operations.

Additionally, EO-A communicates its compliance with international standards in relation to the protection and sustaining of the natural environment, as well as minimising of its impacts, citing a commitment to the International Fertilizer Association and ISO- 14001 environmental management. In this way, EO-A constructs an accountable and transparent narrative that legitimises its operations and practices.

With regard to SD, EO-A employs three other narratives of commitment, compliance, and knowledge. In its text, EO-A communicates its commitment to and compliance with the Brundtland report (1987) definition of SD. In this way, it demonstrates knowledge of SD that goes beyond its legal compliance requirements. Furthermore, the Brundtland report (1987) international discourse informs the organisation's cognitive understanding of SD and possibly also its discursive and social practices, which allows the organisation to convey the legitimacy of its practices.

However, EO-A does not mention the SDGs or their targets and indicators. Therefore, whilst the organisation communicates its commitment to SD, it fails to explicitly communicate on or engage with SDG 6. A possible explanation for this might be the lack of governmental lead on Agenda 2030's 17 SDGs. EO-A might be waiting for guidance from the government, as well as certainty on government standards, regulations, and policies. However, the national government may be preoccupied with communicating national progress on the Agenda 2030 SDGs. Alternatively, the Agenda 2030 SDGs discourse might constitute a hegemonic threat to business-as-usual.

5.3.2.2 Extractive Organisation B – Phosphate

Similarly, 'Extractive Organisation B' (EO-B) deploys the hegemonic discourse on water scarcity in its narrative. To maintain the power of its hegemonic discourse, the organisation also deploys the dominant water-insufficiency discourse, which entails three sub-narratives: the natural environment narrative; the socio-economic narrative; and the political narrative. In this way, EO-B externalises the causes of water inefficiency and water scarcity. Consequently, the organisation communicates three narratives on responsibility, commitment, and strategic (Appendix Ⅳ) to legitimise its operations and practices in the eyes of its stakeholders.

In the chair's letter, EO-B highlights water-management solutions and practices; but it narrates these as strategically good in a business sense, as well as being socially and environmentally responsible. In this way, it constructs a win-win discourse that expands its extractive operations without harming the local community or the natural environment.

In its text, EO-B also highlights the physical water risk, thus communicating its eagerness to sustain natural resources, especially surface and underground water. It mentions the adoption of water-management solutions and practices for both the supply and demand sides, including water-harvesting and reusing and recycling industrial water. In this way, the organisation demonstrates its understanding of environmental resources as an economic priority and a social and environmental responsibility.

EO-B may be embracing supply and demand water management solutions and practices for two reasons: first, it relies on limited underground water, such as that from water wells and basins; and second, it wishes to demonstrate accountability that will cultivate the ideological consent of its stakeholders and legitimise its practices.

EO-B does not mention the Agenda 2030 SDGs. Therefore, it lacks commitment to and engagement with SDG 6. A possible explanation might be that it perceives Agenda 2030 as aspirational, optional, and a long-term agenda. Another explanation might be the lack of governmental lead on the Agenda 2030 SDGs, especially at the industrial level. Hence, the organisation might be waiting for guidance from the government, as well as certainty on government standards, regulations and policies. Furthermore, the Agenda 2030 SDGs discourse might constitute a hegemonic threat to business-as-usual.

5.4 Observation

In this study, as previously discussed, non-participatory observations captured the influence of government plans and policy – as well as the extractive organisations' operations and practices – on stakeholders' water provisions, specifically in terms of cleanliness and sanitation. Non-participatory observations were taken to compare and analyse the responses of participants in the focus groups and semi-structured interviews (see Chapter Four, 'Methodology').

The study registered three observation records. The first addresses cooperation and struggles to socially construct meaning within discursive fields and domains, specifically among national government ministries, international organisations, and NGOs. The second observation record deals with the influence of organisations' extractive and mining operations on stakeholders' water provisions. The third observation record concerns the conditions of stakeholders' water provisions, specifically those of local-community members.

Regarding the first observation record (see Appendix V), in the national forum, the study found that the international organisations communicate the international discourse and operationalise SDG 6 with guidance and support from the national government. Furthermore, the international organisations communicate the international discourse to NGOs, which provide guidance and support regarding local issues in Jordan.

Moreover, the investigation identified the national government ministries focused on the water issue – namely, the MWI and the MoE. The MWI produces the dominant and hegemonic discourse, due to its authority and jurisdiction over the water sector. However, the MoE assists in constructing the dominant and hegemonic discourse. The forum revealed that the MWI struggles to attain ideological consent to the dominant and hegemonic discourse, particularly from the union farmers.

The observation record reveals that some ministries have stronger voices than others. This shapes the water discourse in Jordan and influences the understanding and implementation of SDG 6. On this basis, it appears that the MWI has a strong voice that contextualises SDG 6 according to context-specific circumstances, priorities, and issues.

The second observation record captures the influence of extractive organisations' operations and practices on stakeholders' water provisions (see Appendix VI). Multiple observations were recorded regarding the organisations' wet and dry processes. These included details of the organisations' water consumption from water-harvesting dams and underground water basins. Furthermore, they detailed the disposal of industrial water and the loss of limited water resources.

The observations revealed that the extractive organisations lack a comprehensive water-management strategy focusing on demand solutions and -practices that reduce the consumption, contamination, and loss of water resources. Furthermore, the organisations appear to be providing socio-economic benefits at the expense of long-term environmental harm – for example, through a rise in wastewater, high soil-salinity, and depreciation of water levels in national and regional water bodies.

Finally, the third observation record registered subjective perceptions of the stakeholders' water provision (see Appendix VII). There were observations regarding water insufficiency due to the semi-arid to arid topography, climate change fluctuations, and both natural and unnatural population growth. Furthermore, there were observations regarding water mismanagement and administrative and technical issues, such as unaccountable water due to illegal practices, as well as damage to the water and sewage network. No observations were recorded regarding water mislocation. Moreover, subjective perceptions of the extractive organisations' withdrawal of limited water resources in the local area – as reflected in receding water levels, for example – were also noted. Thus, the registered subjective observations suggest that extractive organisations might be adversely impacting water resources at the local level.

5.5 Summary

This chapter presented the contextual details regarding water resources, specifically the hydrological features and institutional framework in Jordan. In this way, it brought to the surface multiple voices at the micro, meso, and macro levels that could be constructing the dominant and hegemonic discourse in Jordan.

This chapter highlighted the hydrological facts and features responsible for the insufficiency of water resources in Jordan, such as low rainfall precipitation and water overdraft. It appears that low precipitation is the cause of a lack of water resources in the southern region, while the limited underground resources are causing the depletion rate to exceed the recharge rate. The low levels of precipitation also explain the small number of water-harvesting dams in the south. Industrial operations and practices use 3% of the limited water resources in Jordan.

With regard to the institutional framework, the analysis found that international organisations communicate the international discourse to the national government and the NGOs in Jordan (Ministry of Planning & International Cooperation, 2017). In this way, they are able to influence the cognitive understanding of national government and NGOs regarding Agenda 2030.

Furthermore, the study found that a number of government ministries are involved in addressing the water-scarcity issue in Jordan (i.e., the MEMR, MoPIC, MWI, and MoE), and these parties are expected to communicate, commit to, and engage with SDG 6.

Moreover, the study found that the two extractive organisations might be amplifying the water issue in Jordan. However, since these organisations contribute to socio-economic development at the national and local levels, they have the power to shape the dominant and hegemonic discourse. In addition, a variety of stakeholders – such as NGOs, academics, and journalists – might be influencing interpretation of SDG 6.

The second section of this chapter focuses on governmental and corporate narratives in the written documentation concerning water issues and SDG 6. The investigation revealed several narratives that construct and legitimise water-related practice; for example, EO-A discloses seven narratives in its written documentation, specifically concerning responsibility, commitment, compliance, transparent, strategic, accountable, and knowledge. In this way, EO-A portrays itself as a sustainable organisation that goes beyond commitment, compliance, and responsibility. However, EO-B discloses three narratives, namely responsibility, commitment,

and strategic. The observations of EO-B thus suggest a sustainable organisation that provides goods and services (economic responsibility), as well as returns to the national and local communities (social and environmental responsibility).

The third section registered three observation records, capturing the national government's power alliances and struggles within a discursive field, the influence of extractive organisations' operations and practices on stakeholders' water provisions, and subjective perceptions of stakeholders' water provision.

From the observations, the investigation found that the national government's ministries might be shaping the water discourse through cooperation and struggle, specifically regarding SDG 6. Furthermore, the extractive organisations lack a comprehensive water-management strategy focusing on demand solutions and -practices that reduce the consumption, contamination, and loss of water. Moreover, the registered subjective observations suggest that the extractive organisations might be adversely impacting water resources at the local level.

This study has focused solely on systematic linguistic analysis of the texts. By drawing on CDA, the investigation identified some of the challenges – such as water scarcity (RQ1) – for the national government and extractive organisations regarding cleaner water and sanitation. Non-participatory observations were used, as a non-intrusive method of obtaining a third-party perspective on stakeholder challenges regarding cleaner water and sanitation, such as poor water quality and wastewater (RQ2). To identify the discrepancies between text and social practice, an analysis of the discursive practices of the national government, extractive organisations, and relevant stakeholders in the mining industry are presented in Chapters Six and Seven.

Chapter Six: The National Government and Extractive Organisations Discourse

Introduction

The previous chapter presented the governmental and corporate narratives in the relevant written documentation. In this way, it revealed the hegemonic discourse on water scarcity in Jordan and the governmental and corporate cognitive interpretations of SDG 6.

The textual analysis found that the national government and extractive organisations externalise the causes of water scarcity, citing the natural environment and socio-economic and political issues. The SDGs are interpreted into national actions and strategies by the national government based on context-specific circumstances, priorities, and issues. Moreover, the extractive organisations fail to explicitly communicate their commitment to and engagement with Agenda 2030's SDG 6.

This chapter unpacks the hegemonic discourse of the national government and extractive organisations in Jordan to reveal the discursive practices that might be advancing their social and material interests. Furthermore, the study brings to the surface the discursive practices that might provide insights into the fulfilment of SDG 6. Hence, this chapter focuses on the discursive practices of the national government and the extractive organisations (Fairclough, 2001).

6.1 SDG 6.4 'Water Use and Scarcity'

In the semi-structured interviews, the participants emphasised water scarcity as a dominant discourse. They also disclosed two sub-narratives that explain the reasons for water scarcity: inefficient water use and water stress. These sub-narratives provide insights into the fulfilment of SDG 6, in particular in relation to SDG 6.4 ('Water Use and Scarcity').

6.1.1 Fulfilment of Indicator 6.4.1 'Water-Use Efficiency'

The majority of the participants from the national government[18] highlighted the inefficient use of water resources in relation to economic returns, growth, and development, specifically by

[18] It is important to mention that, due to the multiplicity of stakeholders, the participants reported distinctly different perspectives – in accordance with, first, their sector, and second their position in the management hierarchy. Therefore, there are differences between the participants' respective understandings and justifications of water strategy, practices, and decisions.

the agricultural industry. The participants from the MEMR were the exception, as they did not touch upon the inefficient consumption of limited water resources.

One participant from the MoPIC said,

> Another challenge facing us … is the agriculture industry using a large amount of water resources, whilst contributing 3-4% to the national gross domestic product.

Similarly, a participant from the MWI explained,

> 'They' consume 50% of the water budget in Jordan. 'They' use both surface and underground water resources, as well as treated wastewater! … We are treating approximately 160 MCM … Any more would require a financial investment (MWI-1).

However, the same participant observed that,

> The agricultural industry supports many surrounding local communities…especially with employment in the rural areas (MWI-1).

Likewise, a participant from the MoE elaborated as follows:

> *According to the statistics for the year 2017, the water use was divided as follows:*
> • *The agricultural sector consumed 52%, whilst the previous year was 60%*
> • *Drinking water was 45%, due to the increase in the population*
> • *Industry was 3%*

Collectively, these statements suggest that the national government might be facing a challenge in providing safe and clean water, especially due to scarcity of water resources. However, the government continues to provide limited water resources to the agriculture industry, despite its inefficient consumption. In this way, the national government sustains rural socio-economic growth and the development of the local communities. Alternatively, the national government might be attempting to hide the extractive organisations' inefficient use of the water, thereby narrating and framing farmers as inefficient users of water resources.

Organisations in the mining industry[19] recognise their requirement for large quantities of water to sustain their extractive operation and practices. Furthermore, they recognise that water issues

[19] It is important to mention that, due to the multiplicity of stakeholders, the participants reported distinctly different perspectives – in accordance with, first, their sector, and second their position in the management hierarchy. Therefore, there are differences between the participants' respective understandings and justifications of water strategy, practices, and decisions. Furthermore, it is necessary to understand the extractive organisations' water sources, because these influence their water strategies, operations, practices, and decisions. For instance, Organisation A uses underground water basins and water-harvesting dams, while Organisation B only sources from underground wells and basins, as reported by the participants.

pose a legitimacy threat. Therefore, the participants highlighted the need for water-related operations and practices.

A participant from the executive level of EO-A stated that they sustained their extractive and mining operations by using underground water basins and water-harvesting dams. Furthermore, the participant emphasised the sharing of water resources with the local community:

> *We are funding the construction of the **** dam, in agreement with the Jordan Valley Authority (JVA), which will assist with satisfying the water demands of the local community, as well as 'our' needs (EO-A1).*

However, participants at both the managerial and operational levels explained that, in return, the national government would provide access to the country's limited water resources, based on a predetermined water utility agreement. Furthermore, the organisation is obligated by the water utility agreement to withdraw and use the water resources. In this way, the national government authority reduces the physical water risk that could obstruct the extractive operations and practices. As stated here:

> *'We' agreed with **** to assist in building the **** dam … in return for water supplied at a preferred price. And we are 'obligated' to withdraw* [no less than 3 MCM of water per annum] *at 1.25 JD per cubic metre (EO-A2).*

Collectively, these statements suggest that the extractive organisation has established alliances or coalitions with powerful stakeholders, namely the national government, with the goal of furthering its own interests. Furthermore, the government does not appear to be pressurising the organisations or providing incentives to reduce consumption, contamination, and loss of water resources. Rather, the government might actually be encouraging the use of limited water resources to expand the economic activity of the mining industry.

According to participants at the managerial and operational levels, the organisation adheres to a safety limit to reduce physical, financial, reputational, and regulatory risk:

> *We are consumers of water but as a national duty we try to pump a safe limit of groundwater wells … which is only what we need. We conserve water for future generations (EO-A2).*

Interestingly, participants at the managerial and operational levels highlighted this:

> *Before the establishment of the **** company, the area was destitute, suffering from unemployment, ignorance, disease, and extreme poverty. It is an agricultural area … the 'food basket' of Jordan. However, it was not exploited well. After the establishment of the company, the social circumstances improved and many of the local community are employed in the company (EO-A3).*

According to these statements, the organisation is efficiently using water resources to reduce the physical water risk that would obstruct their operations in the long-term. Furthermore, the organisation is efficiently using water resources to provide socio-economic benefits that outweigh the environmental costs to stakeholders in the local community. In this way, the organisation is abiding by a micro-social contract that includes stakeholders implicit and explicit expectations of water-related solutions and practices.

Similarly, the executive-level participant from EO-B stated that the organisation has an agreement with the national government that permits continuous access to the water resource. The participant explained,

> *We have no problem receiving or delivering water. We have an agreement with the national government (EO-B1).*

According to this statement, the organisation has strong alliances or coalitions with powerful stakeholders, such as the national government, which further their interests. This permits the organisation access to limited natural resources, which sustains its extractive and mining operations in Jordan.

However, a participant at the managerial level mentioned that the organisation reuses the excavation site for sand water dams. The sand dams are used to collect rainfall, thus supplying fresh water to local communities:

> *After we finish excavating a site … the exaction site is converted to a sand dam. A portion of the water, the company uses for the washing or purification process. And the rest, the local-community members pump for the irrigation of their crops (EO-B2).*

Furthermore, according to a participant at the managerial level, the organisation 'reuses the wastewater to reduce dust surrounding the mine site … that might cause health issues' (EO-B2). According to these statements, the organisation is efficiently using water resources to provide socio-economic benefits that outweigh the environmental costs to stakeholders such as the local community. As a result, the stakeholders come to view as legitimate the water-related practices that sustain the organisation's operations and practices.

However, interestingly, the operational-level participants **we**re conscious of the impact of industrial operations and practices on water resources. These participants highlighted the impact of inefficient use of water resources at the local level. For instance, one participant said, 'We hope the water-resources increase in the area due to operational expansion in the industry' (EO-B3).

This participant thus recognised water as a critical resource that could pose a threat to the extractive operations and practices in the local community and thus to their livelihoods, as well as bringing social-economic benefits such as education, health insurance, employment opportunities, and infrastructure development.

Furthermore, this statement suggests that inefficient use could have brought about water insufficiency at the local level. Moreover, the organisation might not be providing an alternative, sustainable supply of freshwater for the local community. If this is the case, the organisation may be neglecting to abide by its micro-social contracts, which could cause a legitimacy threat to their operations and practices.

Overall, these statements suggest that the national government is hiding the inefficient use of water resources by water-intensive industries if they contribute significantly to the national economy and to socio-economic growth and development in rural areas. Furthermore, the extractive organisations might be efficiently using water resources to provide socio-economic benefits that outweigh the environmental costs to stakeholders, including the local communities. As a result, the stakeholders come to view as legitimate the water-related practices that sustain the extractive organisations operations and practices. However, as a result, the national government and extractive organisations might be hindering the fulfilment of SDG 6.4, on water use and scarcity.

6.1.2 Fulfilment of Indicator 6.4.2 'Water Stress'

The majority of the participants from the national government[20] identified water as scarce in Jordan, whilst emphasising topography as the primary reason for this. Furthermore, they highlighted social, economic, political, and environmental conditions that might be amplifying the problem.

A participant from the MoPIC said,

> *As you know, Jordan is an arid country due to the topography … In Jordan, water insufficiency is a significant issue … At present, we need to 'secure' sufficient surface and underground water resources to meet rising demand.*

[20] It is important to mention that, due to the multiplicity of stakeholders, the participants reported distinctly different perspectives – in accordance with, first, their sector, and second their position in the management hierarchy. Therefore, there are differences between the participants' respective understandings and justifications of water strategy, practices, and decisions.

Similarly, a participant from the MWI stated that, *'"We" are one of the "poorest" countries with regard to water resources in the world' (MWI-1).* However, when asked why, the participant replied,

> *We have a set of challenges, such as the arid to semi-arid topography of the country, climate change fluctuation, as well as natural and unnatural population growth … These challenges have caused a deterioration in water resources, as well as a gap between supply and demand! (MWI-1).*

To provide further impetus to the argument, the participant highlighted the impact on the natural environment. The participant explained,

> *Yes, every country has different topographical characteristics, which we have been trying to tell the outside world. One time, 'they' asked if 'we' retain water resources for the ecosystem… the natural environment?! We do not have enough water to drink! (MWI-1).*

Furthermore, according to the participant,

> *The political unrest has affected the water-resource state. In Jordan, 'we' have about 650,000 'registered' Syrian refugees. However, in reality, we have 1,400,000 Syrian refugees. We are dealing with human beings, whether refugees or non-refugees. At the end of the day, 'they' are water consumers. We are talking about 1,400,000 individuals suddenly entering the water system – therefore, a challenge (MWI-1).*

For those reasons, according to the participant from the MoE,

> *Jordan is the second poorest country in terms of water resources.… A person's water per capita accounts for 87 cubic meters in comparison with neighbouring countries, whose water per capita share accounts for 500 cubic meters annually, minimum.*

Collectively, these statements suggest that the national government is framing the natural topographic conditions as the root cause of water scarcity and the external conditions as amplifying the water issue. In this way, the national government is absolving itself of responsibility.

The participants from the mining industry[21] also emphasised topography as the primary reason for water scarcity in Jordan. Furthermore, the participants – from different organisational levels – highlighted the social, economic, political, and environmental conditions that might be amplifying the problem.

A participant from the executive level of EO-A stated,

[21] An important point to mention is that due to the multiplicity of stakeholders, participants would report distinctly different perspectives in accordance with their position in the management hierarchy. Therefore, the participants' understanding, and justification will differ regarding water strategy, practices, and decisions. Furthermore, it is necessary to understand the extractive organisations' water sources, because 'they' influence their water strategy, operation, practices, and decisions. For instance, Organisation A uses underground water basins, as well as water-harvesting dams, while Organisation B only sources from underground wells and basins, as reported by participants.

> *We suffer from insufficient water resources, due to the arid topography. For this reason, we are the second 'poorest' country in the world with respect to water resources (EO-A1).*

Similarly, a participant at the managerial level said,

> *Jordan suffers from water scarcity. As a result, Jordan is the second poorest country in water resources (EO-A2).*

Collectively, these statements suggest that participants at the executive and managerial levels acknowledge water scarcity at the national level. When asked about the causes of the problem, these participants highlighted the political conflict, as well as the impact of natural and unnatural population growth on water resources, particularly the wave of immigrants and refugees. For instance, unnatural population growth was caused by the Palestinian (1948), Iraqi (2003), and Syrian (2011) conflicts. One participant at the managerial level in EO-A explained,

> *In 1940, the average consumption per capita was 1,040 cubic metres. Currently, the average water consumption does not exceed 120 cubic metres. And, 'some years' did not exceed 90 cubic metres, due to the scarcity of rain, as well as the rise of migration and refugees (EO-A2).*

A participant from the executive level of EO-B stated,

> *In the future, 'this' [water scarcity] will become a challenge. At the national level, water will be a critical challenge, as well as a terrifying issue (EO-B1).*

Likewise, a participant at the managerial level said,

> *At present, we are suffering water scarcity at the national level – it is a strategic issue (EO-B2).*

Collectively, these statements suggest that participants at the executive and managerial levels acknowledge water scarcity at the national level.

The participants at the managerial and executive levels attributed the decline in water resources to rising demand:

> *The existing water quantities are insufficient, especially with the population growth. The domestic consumption of water has increased in households, because of our 'brothers' – the immigrants and refugees. And manufacturing has increased; therefore, 'we'* [Jordan] *have been exploiting scarce water resources, such as underground water basins. In other words, the population is rising – the water demand is rising – and the risk is rising (EO-B2).*

However, at the operational level, the participants pointed to the impact of topography, as well as climate change fluctuations. For example, one participant said,

> *fluctuation in water supply, due to low precipitation and high evaporation, causes a physical water threat, especially during droughts … So, we have to rely on other sources of water (EO-A3).*

Likewise, another participant at the operational level said,

> *due to fluctuating rainfall, which causes flash flooding … unfortunately, we had to stop washing **** in the area (EO-B3).*

According to these statements, participants at the operational level recognised water as a critical resource that might pose a threat to extractive operation and practices located near the local community and thus to their livelihoods, as well as providing social-economic benefits such as education, health insurance, employment opportunities, and infrastructure development.

One participant at the operational level implied that the water resources at the local level were insufficient. The participant said,

> *In this area, the topography is arid, with low rainfall and a high evaporation rate … For this reason, 'this' area suffers from water insufficiency. However, before, this was not the case (EO-B3).*

This statement suggests that inefficient use might have brought about water insufficiency at the local level.

Overall, the statements suggest the national government and the extractive organisations are externalising the causes of water scarcity by framing the natural topographic conditions as the root cause of water scarcity and pointing to the natural environment and socio-economic and political conditions as amplifying the problem. In this way, they absolve themselves of responsibility. Furthermore, by narrating water scarcity as a natural phenomenon, they might hinder the fulfilment of SDG 6.4 on water use and scarcity.

6.2 SDG 6.5 'Water Resource Management'

The participants also disclosed a second dominant discourse concerning water-resource management. During the semi-structured interviews, the participants discussed the management of water resources by the national government and extractive organisations.

With respect to the national government, the participants highlighted technical issues, such as leakages and physical losses, as well as illegal practices. With regard to administrative issues, they also cited inefficient water governance and a lack of financial resources. Collectively, these administrative and technical issues could be responsible for the water issues due to unaccountable water, intermittent water supply, and cross water contamination.

The mining industry participants discussed their management of water resources, which highlighted both desirable and problematic and expected and unexpected outcomes. These sub-narratives might provide insights into the fulfilment of SDG 6, particularly SDG 6.5 (concerning water-resource management).

6.2.1 Fulfilment of Indicator 6.5.1 'Water Management'

6.2.1.1 National Government – Mismanagement

The majority of the participants from the national government strongly emphasised the administrative and technical issues that might be causing water issues such as unaccountable water, intermittent water supply, and cross water contamination.

With respect to technical issues, the participants highlighted leakages and physical losses and illegal water sources, use, and disposal. In relation to administrative issues, the participants stressed inefficient water governance and a lack of financial resources.

a. Technical Issues of Water Mismanagement

a.1 Leakages and Physical Losses

Participants from the MoPIC and the MEMR implied that there was mismanagement of the water resources. For instance, the participant from the MoPIC said,

> *Last year, twice the amount of rainfall caused large amounts of surface water 'runoff' in Jordan… Jordan drowned! However, the official numbers did not reflect the water state in Jordan. Where did the water leak? (MoPIC).*

However, participants from the MWI highlighted the technical issues. For instance, a participant said,

> *Among the issues we face … is the rehabilitation of water and sewage networks … that cause the loss of water … the technical term is non-revenue water (NRW) (MWI-1).*

However, when asked why this was happening, the participant attributed it to 'force majeure, for example, flash flooding' (MWI-1). Similarly, the participant from the MoE explained,

> *leakages in the water and sewage system cause loss, disparities, and … sometimes contamination.*

When asked why this was, the participant pointed to 'fluctuations in climate conditions … which cause deterioration of water pipeline network'.

The participants from the extractive organisations adopted a different stance. For instance, the EO-A participants complained about the leakages and physical losses that were interrupting their extraction and processing of mineral resources. In contrast, EO-B participants did not mention the leakages and physical losses. It may be that the organisations refrained from drawing attention to their own water-related practices, especially if provided with access to the limited resources by the national government.

A participant from the executive level of EO-A complained, stating,

> *The water and sewage system must be addressed because of the water leaks … this is the role* of the Ministry of Water and Irrigation (MWI), the Water Authority of Jordan (WAJ), and the Jordan Valley Authority (JVA*;* EO-A1).

Participants at both the managerial and operational levels explained that the 'water flooding'[22] damages the water and sewage network, which causes leakages and physical losses and creates issues such as unaccountable water and intermittent supply. A managerial-level participant explained,

> *At present, we are facing the problem of water flooding damaging the water network, which leads to interruption for several days … And, as a result, we suffer from an irregular supply of water (EO-A2).*

Thus, the participants recognised water as a critical resource that might pose a threat to extractive operations and practices.

a.2 Illegal Water Sources, Use, and Disposal

The majority of participants from the national government highlighted illegal water sources, use, and disposal. Participants from the MoPIC, MOE, and MEMR have a limited sphere of influence with respect to the management of water resources.

[22] Despite generally being known as an arid to semi-arid and water-scarce country, Jordan frequently experiences heavy flooding, especially in the south (MWI, 2016).

However, the participants from the MWI described them as either an offence or an attack on water resources. They explained that agricultural farmers cause the water offence by the depletion of limited underground water resources. As stated by a participant,

> *We face the majority of offences from farmers … with unlicenced wells (MWI-3).*

Meanwhile, domestic citizens attack the water resources by pumping from main and peripheral water pipelines. The same participant explained,

> *And, 'we' have constant attacks on main water pipelines-lines (MWI-3).*

The extractive organisations have water agreements with the national government that provide them with legally licenced water resources. Hence, the extractive organisations did not touch upon illegal water sources, use, or disposal.

b. Administrative Issues of Water Management

b.1 Water Governance

With regard to water governance,[23] a participant from the MEMR introduced an unanticipated sub-narrative concerning water standards and regulations. In the interview, the participant stated,

> *We are one of the poorest water-resource countries in the world, due to flawed water regulation and policies (MEMR-1).*

Since the MWI has the authority and the jurisdiction to manage limited water resources, a common response to the question of who is responsible and accountable for the management of water resources was, 'Of course, the MWI'. Therefore, participants also hold the MWI responsible for any mismanagement.

Jointly, these statements suggest that the national government might have a water governance issue, specifically regarding water regulation and policies. As a result, the national government's inefficient water governance might be causing issues such as unaccountable water, intermittent water supply, and cross water contamination.

b.2 Lack of Financial Resources

[23] The water governance system influences the utilisation, management, and allocation of water. In other words, water governance dictates who, what, when, and how water resources are used for domestic, agricultural, and industrial use.

With respect to the national government, a common view amongst most participants was that lack of financial resources might be hindering the resolution or mitigation of the water issues in Jordan. (One exception to this consensus was the participants from the MEMR.) According to the participant from MoPIC, 'lack of sufficient financing … is a significant challenge in Jordan'. Similarly, the participant from the MoE highlighted,

> *One of the most important challenges we face is the availability of the financial resources for projects. We lack those funds to support the projects.*

Likewise, a participant from the MWI said,

> *We seek to reach a stage where at least the financial resources could cover the costs, such as operational and maintenance expense (MWI-3).*

When asked about their understanding of water sustainability, a participant from the MWI responded,

> *Instead of water sustainability, financial sustainability. We are trying to achieve financial sustainability for the water sector. The water sector is subsidised by the state and funded by international bodies. Therefore, we aspire to reach a stage where at least the financial resources could cover the costs, as well as operational and maintenance expenses (MWI-1).*

Collectively, these statements suggest that the lack of financial resources might be preventing the MWI resolving and mitigating the water issues. Furthermore, these statements give an insight into the material interests driving the communication of, commitment to, and engagement with SDG 6 in Jordan.

6.2.1.2 Extractive Organisations – Mismanagement

The mining industry participants acknowledged their need for large quantities of water resources to sustain their extractive operation and practices. Furthermore, they recognised that the water issues pose a legitimacy threat to their business and thus highlighted desirable water-related initiatives, operations, and practices.

The EO-A participants mentioned that their organisation collaborates with the MWI to establish water-treatment plants for local communities. The executive-level participant explained that the water-related initiatives and projects demonstrate their CSR towards their local community:

> *As you know, water is a critical element in 'our' production and operation … so 'we' donate to water and environment initiatives and projects each year. We conducted a study – commissioned for 100,000 dinars in cooperation with the Ministry of Water and Irrigation (MWI) – that focused on the wastewater treatment for the local community (EO-A1).*

Similarly, a managerial- and operational-level participant also mentioned that their organisation established water-treatment plants that provided an alternative source for irrigating agriculture, such as palm trees. However, when asked why they treated wastewater, the participant said,

> *To reinforce water security, as well as reduce issues in the natural environment. It is about 300 cubic metres per day … instead of throwing it away … in a 'natural lagoon', we treat it … to grow palm trees (EO-A2).*

These statements suggest that the organisation has formed alliances or coalitions with powerful stakeholders, namely the national government, to further its own social interests. Furthermore, the organisation is implementing desirable water initiatives and projects, such as local treatment plants. In this way, the extractive organisation is able to attain a status of legitimacy in the eyes of its stakeholders and thus maintain access to the limited water resources required for sustaining its extractive and mining operations in Jordan.

Regarding the water-related practices, a managerial-level participant mentioned that their extractive organisation 'reuses water resources in cooling-down systems, which reduces the probability of overheating equipment and machinery' (EO-A2). Furthermore, an operational-level participant explained that the extractive organisation treats wastewater:

> *after floatation, the water passes through processing filters to be treated and then used in the production process again (EO-A3).*

However, the same participant said,

> *We discharge the brine found in the **** ponds through a channel to the Dead Sea (EO-A3).*

As such, the organisation might be impacting a waterbody of national, political, and religious significance to Jordan. When asked why this was happening, the managerial-level participant replied,

> *The reason is to mitigate environmental problems and violations … checked by the Ministry of Water and Irrigation (MWI), the Ministry of Environment (MoE), and the **** (EO-A2).*

According to these statements, the extractive organisation is using water-related practices to reduce physical, financial, reputational, and regulatory risk, whilst also engaging in problematic water-related practices that are legitimised by powerful stakeholders.

The participants from EO-B mentioned a desirable but problematic practice that might affect the salinity level of the soil and the quality of the underground water resources. An executive-level participant explained,

> *After washing, we discharge the water to the valley. Some local-community members use it to irrigate their crops … Some grow tomatoes in the desert (EO-B1).*

Similarly, the managerial-level participant said,

> *We discharge the water towards the valley. The local-community members pump the water to irrigate their agricultural crop. Even animals and birds build their nests (EO-B2).*

However, they also explained,

> *Of course, under the supervision of the Ministry of the Environment (MoE) and the ****, they take samples from the sites – both the input and output industry water (EO-B2).*

Likewise, an operational-level participant said,

> *If we stop pumping the water to them … there will be problems … Once we cut off the water, they held a demonstration and closed the mine (EO-B3).*

Collectively, these statements suggest that the organisation is abiding by a micro-social contract that entails stakeholders' implicit and explicit expectations of water-related practices. Furthermore, the organisation might be providing socio-economic benefits that outweigh the environmental costs to stakeholders, explicitly the powerful and less powerful stakeholders. As a result, stakeholders might be legitimising the water-related practices that sustain the extractive and mining operations, thus permitting the extractive organisation to discharge industrial water into the valleys.

6.2.2 Fulfilment of Indicator 6.5.2 'Transboundary Cooperation'

The majority of the national-government participants cited as a challenge, without elaboration, the sharing of transboundary water resources with neighbouring countries. The participant from the MoPIC stated,

the third challenge is the sharing of transboundary water resources (MoPIC).

A participant from the MWI explained,

> *Jordan is almost landlocked … With low precipitation and high evaporation … We must rely on shared water resources (MWI-2).*

The participant from the MoE stated,

> *We have to negotiate water rights with neighbouring countries, especially in the midst of this political unrest (MoE).*

A participant from the MEMR said,

> *In the future, wars will be over 'limited' shared water resources (MEMR-1).*

The executive-level, mining-industry participants highlighted political water agreements and the sharing of transboundary water resources with neighbouring countries. The executive-level EO-A participant implied that this increased the depletion of the water resources required to sustain extractive operations and practices:

> *And politics has a major role in the water issue. For example, sharing the Dead Sea with 'our' neighbours (EO-A1).*

An executive-level EO-B participant emphasised fluctuations in the water supply:

> *As you know, we share water resources with neighbouring countries, such as the Disi Basin. For this reason, 'we' have to rely on other national water resources (EO-B1).*

Collectively, these statements suggest that the national government narrates and frames transboundary water agreements as amplifying water scarcity in Jordan. In this way, the national government may be hiding its mismanagement of water resources and hindering the fulfilment of SDG 6.5 on water-resource management.

6.3 Summary

This chapter unpacked the hegemonic discourse of the national government and extractive organisations in Jordan to reveal the discursive practices that might be advancing their social and material interests. These discursive practices thus provide insights into the fulfilment of SDG 6 in Jordan.

CDA has revealed the dominant narratives concerning water scarcity and water management, which have in turn illuminated sub-narratives that are both fixing the hegemonic discourse and hidden by it. In this way, the investigation has uncovered sub-narratives and dominant discourses that might be supporting or hindering national efforts towards the fulfilment of SDG 6.

During the interviews, the national government representatives narrated and framed farmers as inefficient users of water resources in Jordan. In this way, the national government may be hiding the inefficient use of water resources by water-intensive industries – in particular, those contributing significantly to the national economy and to socio-economic growth and development in rural areas, namely the mining industry.

Furthermore, the national-government and extractive-organisation participants frame topography as a primary reason for water scarcity, with the natural environment and various socio-economic and political conditions amplifying the problem. In this way, they seek to externalise the causes and absolve themselves of responsibility. By narrating water scarcity as a natural phenomenon, they attempt to fix the hegemonic discourse, which could be hindering the fulfilment of SDG 6.4 on water use and scarcity.

To resolve and mitigate the water issue, the national government – especially the MWI – requires financial sustainability. A common view shared by the interviewees is stated here:

> *Instead of water sustainability, financial sustainability. We are trying to achieve financial sustainability for the water sector. The water sector is subsidised by the state, as well as funded by international bodies. Therefore, we aspire to reach a stage where at least the financial resources could cover the costs, as well as operational and maintenance expense (MWI-1).*

This view frames a lack of financial sustainability as the chief obstacle to the MWI's resolution and mitigation of the water issue. Furthermore, the national government narrates and frames transboundary water agreements as amplifying the water scarcity. In this way, it hides its own mismanagement of the water resources and hinders the fulfilment of SDG 6.5 on water-resource management.

Water is a critical resource, even in water-intensive industries. If organisations cause water issues, then they face the challenge of legitimacy threats. To mitigate these threats, extractive organisations engage in desirable water-related initiatives, operations, and practices, which give them legitimacy in the eyes of their stakeholders.

However, this creates both desirable and problematic and expected and unexpected outcomes. That is, the extractive organisations engage in water-related practices, which, on the one hand, abide by the implicit and explicit stakeholder expectations in the micro-social contract, whilst, on the other hand, hindering the fulfilment of SDG 6.5, concerning water-resource management.

In light of these findings, it can be inferred that the national government and extractive organisations are fixing the hegemonic discourse to hide their own mismanagement of water resources at the national level. However, at the local level, the extractive organisations use water-related practices to provide socio-economic benefits that outweigh the environmental costs. In this way, the powerful stakeholders are legitimising their water-related practices and hiding their impact on water cleanliness and sanitation from other parties (except – as discussed in Chapter Seven, 'Relevant Stakeholders Discourse' – from the local authorities and local communities).

Chapter Seven: Multi-Stakeholder Discourse

Introduction

The previous chapter unpacked the hegemonic discourse of the national government and extractive organisations in Jordan. In this way, it revealed their discursive practices that advance their social and material interests and provided insight into the fulfilment of SDG 6 in Jordan.

In this chapter, a chorus of voices narrates the story of water scarcity. The accounts in this chapter are not entirely separate from one another: rather, the stories are underpinned by similar suffering and struggle, even if the perspectives and opinions vary. The study unpacks the discourse of these stakeholders who influence water-related practices in the mining industry, specifically international organisations, NGOs, journalists and research academics, local authorities, and members of the local community (farmers, townsmen and women, *bedu*). In this way, the study reveals those discursive practices that may be hiding the extractive organisations' impact on their stakeholders' water resources. The chapter also provides insights into the fulfilment of SDG 6 in Jordan.

This chapter focuses on the discursive practices of relevant stakeholders who – through their silence or contestation – influence water-related practice in the mining industry (Fairclough, 2001).

7.1 SDG 6.3 'Water Quality and Wastewater'

In the semi-structured interviews and focus groups, the participants discussed the national government's water mismanagement, which they said might be causing the recurring water issues in Jordan, as well as the extractive organisations' water mismanagement, which may be having a detrimental impact on the cleanliness and sanitation of the water resources.

The participants disclosed a significant dominant discourse concerning water quality and wastewater. That is, they disclosed two sub-narratives of wastewater and water quality. In this way, the participants provided insights into the fulfilment of SDG 6, particularly SDG 6.3 (concerning water quality and wastewater).

7.1.1 Fulfilment of Indicator 6.3.1 'Wastewater'

At the national level, the participants narrated and framed topography as the primary reason for water scarcity in Jordan and reported social, economic, political, and environmental conditions as amplifying the problem. However, they also discussed the national government's water mismanagement and suggested that this might be a cause of recurring issues such as the wastewater problems.

In an interview, a participant from an international organisation explained,

> *We suffer from water scarcity for two reasons: the first is environmental, and the second is human activity. From an environmental perspective, topography, climate change and fluctuation, such as long periods of drought in Jordan. From a social perspective, rising natural population growth, as well as unnatural population growth attributed to political unrest in the region. For these reasons, we face the issue of providing fresh drinking water- basic human rights (IO).*

The participant explained that the national government takes a short-term focus on water management, seeking to implement quick and temporary measures to resolve or mitigate the issues. As a result, according to the participant, the government's mismanagement of water resources causes recurring issues:

> *The idea is not to restrict, but to sustainably manage water resources in Jordan. Therefore, the broad title is to sustainably manage water resources – 'you' do not want to restrict citizens, because 'they' have many 'essential' needs. However, sustainable management of water resources requires resilience and adaptation. 'I' already know that as a country, 'I' suffer from water scarcity and face ever-changing conditions … So, this brings into question: how should 'I' adapt myself to these circumstances? (IO).*

According to these statements, the national government is failing to sustainably manage the national water resources. As a sustainable approach, the participant suggested the incorporation of adaptation and resilience into the national water strategy. This would leave the national government able to address changing and fluctuating water circumstances, whilst meeting human needs in the present and future. With the government lacking such a strategy, the participant argued that its mismanagement was amplifying the problem of water scarcity in Jordan.

Similarly, a participant from an NGO said,

> *Jordan suffers from water scarcity. Also, water sources suffer from both water mismanagement and misallocation (NGO- A).*

Another participant from an NGO highlighted national government mismanagement due to its inefficient water governance.[24] They stated,

> *The Ministry of Agriculture communicates, saying 'water resources are for me – it's my right' … The Ministry of Water and Irrigation communicates, saying, 'water resources are for drinking – the rights of human beings' …The Ministry of Environment communicates, saying, 'water resources are for the environment – the rights of the natural environment' … I feel there is a need for a better formulation, particularly in water governance (NGO- B).*

Additionally, a newspaper reporter discussed water-distribution and the mismanagement of the limited water resources:

> *Due to the rise in the density of the population, in the north, we have to meet the water demands of Syrian refugees. Whilst in the south, we have to meet the water demand of a rising population, with cities being far apart and requiring pumping of large quantities of water to reach the end user. For example, in Ajloun and Tafila governorate, water is pumped every 14 days. The southern region is the source of water for the entire kingdom – from the Disi Basin. As for the north, it is the region that has the most rain, and we suffer from water scarcity!*

A participant from the municipal authority near EO-A highlighted that they 'face problems with the water infrastructure and network':

> *However, the Ministry of Water and Irrigation has priorities and faces pressure to meet the demand of areas with a larger population. So, they direct their attention to the larger problems and postpone smaller problems. But, for 'us', these are big issues, and we need a solution (LA – a).*

Similarly, a participant from the municipal authority near EO-B said,

> *Unfortunately, the country is mismanaging the water resources … With the Faza'i model, the panic model … solving problems and issues in the short-term rather than planning for the long-term. The lack of complementarity efforts and studies from the relevant ministries – each working alone … in the sense 'you' feel there are no combined efforts, strategies, and plans for tackling water, population, and development issues (LA – b).*

[24] Water governance is a political, social, economic, and administrative system that dictates the *who, what, when,* and *how* regarding water resources.

Collectively, these statements suggest that the national government implements rapid and temporary measures to resolve or mitigate water issues. As a result, this mismanagement could be causing recurring water issues at the national level.

However, some participants discussed the extractive organisations' management of and impact on water resources at the national level. Some academic researchers highlighted the extractive organisations' impact on water resources at the national level, and one participant noted that EO-A brings the limited water resources into overdraft:

> *When the company expands its extraction, 'it' increases the production of minerals … 'it' drills underground wells … or builds dams to ensure a secure supply of water. The company needs water to continue extraction; therefore, 'it' uses water resources. To continue extraction and mining, the companies started digging one or two wells in the Disi basin. Also, the company is funding the construction of a water-harvesting dam (AR-2).*

Another participant highlighted EO-B's contamination and depletion of the water:

> *The water discharged from sediment ponds is recycled. 'We' use 'some' of the water discharged in the washing process. The rest is thrown into nearby valleys. Otherwise, the water might be transported to be used in the extraction process in mining sites (AR-1).*

However, the participants explained that extractive organisations exploit limited water resources to raise the quality of the mineral:

> *For this reason, the companies should have a water strategy, because without water 'we' have to sell only higher quality mineral, free of impurities and limited quantity. However, the mineral that requires washing to remove impurities of large quantity is of a higher price. For the mineral-mining industry to continue, we need water (AR-1).*

A participant from the municipal authority near EO-B explained,

> *In the south, 'we' have phosphate and potash mines, as well as factories, which consume large quantities of local water resources. In return, what did the government do? The government set up artificial lakes for phosphate, water dams beside potash … and 'they'* [the extractive organisations] *reserve the right to acquire all the water they need. Is there enough? Is there enough to cover industrial and domestic demand? You tell me (LA – b).*

According to these statements, the extractive organisations are detrimentally impacting water resources, causing issues such as wastewater. The municipal authority holds the extractive

organisation responsible for this, whilst the government is accountable for resolving or mitigating the problems.

7.1.2 Fulfilment of Indicator 6.3.2 'Water Quality'

When asked about the extractive organisations' impact on their water resources, the mayor from the municipal authority near EO-A reported,

> *As you have seen, we are surrounded by dams – the government and the **** company collaborated to build them in this area. [However,] locally, water resources have high percentages of ammonia and therefore salinity. So, we need fresh underground water, but the majority of underground water resources are used for industrial activity … wallah – it's funny, we drink the saline water, while the companies use the freshwater …*
>
> *The private sector has a social responsibility to 'us' the local community… So, they have to fund water-related projects – considering the annual decrease in the Dead Sea level … that soon will be depleted (LA – a).*

Collectively, these statements suggest that EO-A is neglecting to abide by a micro-social contract that entails providing socio-economic benefits that outweigh the environmental costs to their stakeholders. As a result, the participant perceived the extractive organisation unfavourably, thereby illustrating how a legitimacy threat to the organisation's operations and practices can emerge.

Similarly, the mayor residing near EO-B reported,

> *due to extractive and mining operation, the company uses 70% of underground water and discharges distrusted water – up to 60-65% – thereby polluting the surface water (LA – b).*

The participants discussed the impact of extractive organisations on the local community, particularly in terms of the limited water resources. From a socio-economic perspective, the participants revealed the impact of a nearby extractive organisation on the sustainable livelihood of local communities. The municipality mayor residing near to EO-B explained,

> *This is the water that the bedu depend on for their halal and farms, women in the local community … The community matures and grows when there are elements of civilisation (LA – b).*

This statement highlights the co-dependency between water and society, as local communities grow, mature, and develop based on elements of civilisation such as water. At the same time,

the water resources rely on society for efficient management by the government, extractive organisations, and local communities. Speaking from an environmental perspective, the participant highlighted the discharge of distrusted industrial water, which affects the natural environment and possibly the health of the local community. According to the participant, 'industrial water causes the emergence of random lingering shrubs and forest in the area' (LA – b), which might be detrimental to the health of the local community, especially if used to irrigate crops.

In response to a question about EO-B, the mayor residing nearby explained,

> *'we' use the 'local community card' to exercise pressure. We raise awareness in the local community on water issues, as well as engaging and collaborating to mitigate the issue (LA – b).*

Collectively, these statements suggest that extractive organisations are having a detrimental impact on the nearby local communities. However, the municipal authority exercises its collective power to drive public expressions of resistance and contestation that challenge the extractive organisations' operations and practices.

Interestingly, the participants named the king as a very powerful stakeholder. The Monarch of the Royal Hashemite Kingdom of Jordan exercises power that guides both parliament and the national government and shapes, blocks, and resists water regulations and policies. As a municipality mayor residing near EO-B explained,

> *We call it the 'Royal Touch'. What 'I' mean is, if the higher level of leadership highlighted an issue, then attention would be paid to the issue … and the work would be done (LA – b).*

Local-community members discussed the impact of extractive organisations on their water resources at the local level. These participants had distinct perspectives due to residing in different geographic areas. Furthermore, for the local communities, conversations about water hold narratives are rooted, first, in their everyday lives, and second, in time (that is, before and after the establishment of the extractive organisations). The placement of these memories communicated through narratives has significance for understanding present experiences and perceptions of water scarcity.

During a focus-group discussion, a participant from the municipal authority near EO-A reported, 'We do not suffer from water scarcity, maybe shortages'. When asked why this was, the participant replied,

> *we 'share' water resources with them. The **** company withdraw water from the 'shared' water dams and their 'licenced' underground water wells in the area (FC-T1).*

In a focus-group discussion, another townsman explained,

> *Before the establishment of the **** company, we suffered from poverty, unemployment … Now, the residents of the area work in the company … and 'they' established schools, football fields…they fund university scholarships … It is undeniable that the **** company socially revitalised the area (FC-T4).*

Similarly, a woman residing near EO-A said,

> *For 'us', 'we' are supplied with water from the surrounding dams. The **** company built the dam a few years ago … Several farmers flock to the area because it is the food basket of Jordan. And the farmers benefit from the water and warm weather to grow tomatoes, cucumber, and bananas, etc. (FC-W2).*

Likewise, a farmer residing near EO-A said,

> *Before the **** company was founded, there wasn't any farming. Now, if you drive down, … you see there are farms everywhere … growing different fruits and vegetables … it is not called the 'food basket' of Jordan for no reason (FC-F4).*

Collectively, these statements suggest that EO-A provides benefits that outweigh the costs to stakeholders. As a result, the local community perceives the extractive organisation favourably and disregards its local-level impact on the limited water resources.

Conversely, a townsman residing near EO-B, when asked about the extractive organisation's impact on their water resources, replied, '"We" used to wash the mineral with water in the **** area. However, "We" stopped washing the mineral' (FC-T3); to which another participant laughed and responded, 'Of course, because you used all the water' (FC-T2).

One townsman said,

> *there are unlicenced water wells, but the water is red, containing high percentages of iron (FC-T3).*

Likewise, a farmer said,

> *this is an area that suffers from poverty … we cannot use local water sources, because they contain high percentages of iron (FC-F2).*

Irritated, a participant residing near EO-B stated,

> *The extractive organisation 'allegedly' provides 6 million to serve the local community. However, the extractive organisation contributes towards the social and economic development of the Kingdom… and 'us' the local community suffer from the worst conditions. In summary, we do not suffer from water scarcity but mismanagement of water (FC-T2).*

Interestingly, a woman residing near EO-B shared a narrative of rootedness and belonging, highlighting the relationship with the water and land, which might function as a narrative of resistance. During the focus-group discussion, she reminisced:

> *Now it's a desert but this used to be an area filled with water springs… our ancestral land (FC-W1).*

These statements suggest that the participants perceive extractive organisations unfavourably due to their detrimental impact at the local-community level. During the focus-group discussions, the participants suggested that extractive organisations were contributing to national socio-economic development. The national government legitimatises the extractive operations and practices of the mining industry, which grants the organisations access to the limited natural resources to sustain these operations. As a result, the national government's engagement with the organisations might be causing water issues at the local-community level.

However, a participant residing near EO-B expressed a favourable perception of the extractive organisation:

> *Before the **** company was established in ****, this town was neglected … 'We' could not afford to send the children to school … Now, 'we' have nearby schools, health insurance, paved roads (FC-W1).*

In this way, the participant legitimised the extractive operations and practices and disregarded their impact on the limited water resources.

Similarly, a farmer residing near EO-B mentioned having seen discharged industrial water. Thereby, the participant described a desirable but problematic practice, which, on the one hand, abides by the farmers' implicit and explicit expectations in the micro-social contract, whilst, on the other hand, might be detrimental to the health of the local community. The participant said,

> *Yes, I saw them use the water to grow desert tomatoes … In ****, the farmers use the discharged water from **** company to irrigate their crops … If I remember correctly, maybe a few years ago, they were complaining that the **** company stopped discharging industrial water … I don't know what happened, but they still use the discharged water in **** (FC-F3).*

Finally, the *bedu* acknowledged the water scarcity at the national level. For instance, when asked about the circumstances in Jordan, one participant replied, 'Jordan suffers from water scarcity' (FC-B1); and when asked why this was, the participant replied, laughing, 'This is how it was, is, and will be in Jordan' (FC-B1).

Another participant noted the severity of the environmental conditions, claiming,

> *it is impossible for anyone to lead this way of life … only 'we' understand this life (FC-B2).*

During the focus group, the researcher learned that water insufficiency had shaped the *bedu* into very efficient water users. For instance, one participant explained that water sources differ due to the changes in the seasons. During winter, the *bedu* rely on harvesting rainfall by constructing sand dams, whilst they rely on underground basins and wells during summer. Furthermore, they use the natural landscape channels for directing and storing water in cisterns; and if they suffer from water shortages, they purchase water tanks to sustain their livestock.

The participants rationalised their water consumption and withdrew their requirement of water for drinking, cooking, washing, and livestock. That is, the *bedu* use water-sustainable practices, which they have developed in response to the topographical circumstances in Jordan, namely the arid desert regions. Hence, in their reality, water insufficiency does not mean water scarcity.

Interestingly, one participant highlighted the natural environment as a non-human stakeholder, stating that 'nature provides "us" with "all" the water "we" need' (FC-B3). In this way, the participant implied that it was the mismanagement of water resources that was causing the water-quality and wastewater issues.

7.2 SDG 6.6 'Ecosystem'

The participants also disclosed a second dominant discourse that entailed two sub-narratives: international cooperation and stakeholder participation. In this way, the participants provided insights into the fulfilment of SDG 6, particularly SDG 6.6, concerning the ecosystem.

7.2.1 Fulfilment of Indicator 6.a.1 'International Cooperation'

From the national government, the participant from the MoPIC highlighted that a lack of cooperation the government ministries might be causing the lack of interlinkage between the SDGs in Jordan, pointing to the ministries' standalone approach:

> *'We' should work on the interlinkage between SDGs. To work on the interlinkages, 'we' should establish a clear map of the connections between them, as well as the sectors. And, as a result, the small interlinkages become the reason for achieving the SDGs … Therefore, the little pieces are the reason for adding value, similar to a mosaic (MoPIC).*

The participant suggested that this standalone approach might be hindering the resolution of mitigation of the water issues. By interlinking the SDGs, the government ministries could reduce the trade-off between them at the national level, allowing unified, holistic, short-term, close-ended, and interlinked progress towards the SDGs.

When asked about their understanding of SDG 6, a participant from an international organisations explained**,**

> *This is a national responsibility. The Ministry of Water and Irrigation (MWI) takes the lead on the administrative and technical aspects of SDG 6.*
>
> *'Our' role is to support the government to meet their national obligation and international agreements … for example, climate change agreements, Agenda 2030, Paris agreement, and triple C among others. SDG 6, which you asked about, is directly associated with the water sector (IO).*

To operationalise the Agenda 2030 SDGs, the participant explained that the international organisation provides the national government with technical and financial support for resolving the national water issues:

> *'We' the **** provide technical and financial support to the water sector. At the national level, we support wastewater treatment projects. Also, we focus on education … we contribute towards raising awareness at one end … and on the other, promoting technological solutions (IO).*

These statements suggest that SDG 6 is seen by the international organisations as a matter for the national agenda and thus a national responsibility. Similarly, the NGOs appear to be interpreting SDG 6 as a national issue:

> *The sustainability goals are national government goals (NGO- A).*

Another participant from an NGO (NGO-B) explained,

> *The international sustainable development goals (SDGs) are a convention between countries on sustainability issues – environmental, social, and economic. However, as mentioned earlier, the sustainable development goals (SDGs) must be considered within a local context (NGO-B).*

The NGOs provide guidance and support to the national government, specifically the MWI. As stated here by a participant from an NGO, 'We are the technical arm of the Ministry of Water and Irrigation (MWI)' (NGO- B). Another NGO participant explained,

> *We are donation-driven. Therefore, 'our' projects are externally funded. We use a grassroots approach to reduce the gap between the official policymakers and local institutions and communities. In terms of the SDGs, we published a policy paper providing direction and guidance on the attainment of SDGs in Jordan. We are considered the environmental arm for ****. Therefore, we are working on the UN's 17 SDGs, specifically on the environmental aspects (NGO-A).*

Furthermore, during the interviews, the participants repeatedly noted that their perceptions were 'according to reports from the Ministry of Water and Irrigation". This statement implies that the national government posses both power and legitimacy, thereby might be influencing less powerful and powerless stakeholders' perception, understanding, and expectations of cleaner water and sanitation. Moreover, this implies that participants from the international organisation and the NGOs cooperate and collaborate with the national government. In this way, they might derive the dominant discourse and sub-narratives from the national government's discourse.

However, during the interviews and the focus groups, only the participants from NGOs cited a lack of financial resources as hindering the resolution or mitigation of the water issues. According to a participant from an NGO,

> *The most prominent challenge is the budgets to implement the plans and sustainable strategies (NGO-A).*

This suggests that a lack of financial resources might be hindering the MWI from resolving or mitigating the water issues. Furthermore, it might be driving the national government's commitment to and engagement with SDG 6.

Collectively, these statements suggest that the international organisations and NGOs might be interpreting the global SD agenda into a national form, due to context-specific circumstances, priorities, and issues. Whilst they are nationalising SDG 6 in line with the water context in Jordan, the operationalisation of SDG 6 requires the international organisations and NGOs to provide the national government with social and material support. Therefore, the national government is communicating its commitment to and engagement with SDG 6.

7.2.2 Fulfilment of Indicator 6.b.1 'Stakeholder Participation'

At the municipal level, the mayor residing near EO-A did not mention a lack of stakeholder engagement, while the mayor residing near EO-B did. They suggested 'working on parallel diplomacy between municipalities to raise issues and interest, as well as resolve shared problems and issues':

> *In other words, joining municipalities … equivalent to government diplomacy, but at the local level. Parallel diplomacy maintains cooperation between municipalities. It helps to solve municipal problems such as the water problem.*

This statement highlights the power asymmetry between the extractive organisations and their stakeholders. The participant suggested collective action as a mechanism to permit stakeholders to voice their issues. This would be especially valuable for the less powerful stakeholders, who lack the pragmatic means to speak out.

At the local level, the women were very vocal about the lack of stakeholder engagement. For instance, a woman residing near EO-A said,

> *These companies found in the area do not have an 'inclusive' development plan. They support 'certain' sectors. Therefore, these efforts are not reflected on the ground. These companies 'assign' seats for themselves on the social council and they dictate social-economic priorities. We do not sit with them on one table (FC-W2).*

Similarly, a woman residing near EO-B said,

> *We do not feel 'we' are being heard … Even though we have the **** company nearby. We suffer from unemployment, poverty, and health services. We lack public infrastructure and transportation (FC-W1).*

Collectively, these statements suggest that the extractive organisations are lacking mechanisms and practices that would facilitate inclusive and meaningful engagement with stakeholders. Therefore, the extractive organisations' CSR efforts in relation to sustainability might be sporadic philanthropic actions that lack unified, holistic, long-term, close-ended, and interlinked progress towards stakeholder expectations of SD. As a result, extractive organisations might face legitimacy threats to their operations and practices.

7.3 Summary

This chapter unpacked the discourse of relevant stakeholders that influences water-related practices in the mining industry. The CDA revealed the dominant discourses and sub-narratives concerning water quality and wastewater, international cooperation, and stakeholder

participation. In this way, it revealed the impact of the extractive organisations' practices on stakeholders' water resources and on efforts to attain SDG 6.

At the national level, the participants discussed the national government's water mismanagement that might be causing recurring issues such as wastewater. The extractive organisations' water mismanagement was also discussed, with reference to the water-related practices that may affect the cleanliness and sanitation of the water resources. According to the participants, the national government's engagement with the extractive organisations might be causing water issues at the local-community level. That is, the extractive organisations provide socio-economic benefits that outweigh the environmental costs at the national level and, as a result, the national government perceives the organisations favourably and disregards their impact on the limited water resources at the local level.

Local-community members also discussed the impact of extractive organisations on their water resources at the local level. During the focus-group discussions, the participants made a distinction between scarcity, shortage, poverty, and stress in relation to water resources. For instance, stakeholders residing near EO-A reported experiencing water shortages, whilst those residing near EO-B reported water insufficiency. According to these findings, the extractive organisations might be causing water issues at the local level, thereby amplifying water scarcity at the national level.

Furthermore, with respect to water quality, the stakeholders residing near EO-A reported the availability of ambient water quantity due to the collaboration between the national government and extractive organisations to construct water-harvesting dams. However, unfortunately, those water resources are shared with the extractive organisations, whilst the residents suffer from a lack of available ambient water quality. Despite this, stakeholders perceive EO-A favourably because it abides by the micro-social contract that entails the provision of benefits that outweigh the costs to stakeholders. For this reason, their stakeholders view their operations and practices as legitimate.

Similarly, stakeholders residing near EO-B reported a lack of available ambient water quality due to practices of the extractive organisations that are at once desirable, problematic, expected, and unexpected – for instance, the direct disposal of mine wastewater in the valleys. On the one hand, the extractive organisations abide by the farmers' implicit and explicit expectations within the micro-social contract; whilst, on the other hand, the extractive organisation are detrimentally impacting the health of the local community. In this way, the organisation is

failing to abide by another micro-social contract and thus facing legitimacy threats to their operations. Collectively, these findings suggest that the national government's engagement with the extractive organisations might be hindering the fulfilment of SDG 6.3, which concerns water quality and wastewater.

Moreover, the participants revealed two sub-narratives that might be hindering the fulfilment of SDG 6.6 (on the ecosystem): international cooperation and stakeholder participation. From the national government, a participant from MoPIC highlighted that the government ministries' standalone approach might be causing a lack of cooperation and interlinkage between the SDGs in Jordan. The participants from international organisations and NGOs provided insights into the national government's commitment to and engagement with SDG 6. They stated that the national government's lack of financial resources might be hindering the resolution or mitigation of the water issues in Jordan. Therefore, the international organisations were providing the national government with social and material support. The participants thus provided insights into the social and material interests driving the national government's communication of, commitment to, and engagement with SDG 6.

Speaking at the local-community level, women were very vocal about the lack of stakeholder engagement. They said that the extractive organisations lacked mechanisms and practices that would facilitate inclusive and meaningful engagement with their stakeholders. As a result, they perceived the extractive organisations unfavourably and the extractive organisations face legitimacy threats to their operations and practices.

The investigation thus revealed various sanctioned, dominant, demanding, parallel, oppositional, marginalised, and alternative stakeholder voices regarding the impact of the extractive organisations on cleanliness and sanitation of water in Jordan. It is argued that these different voices – by driving, responding, partnering, resisting, and submitting – are shaping discursive practice and thus social practice (to be discussed in the following chapter, 'From Discourse to Practice').

Chapter Eight: From Discourse to Practice

Introduction

This chapter highlights and discusses the challenges of accessing cleaner water and sanitation in Jordan in relation to the achievement of SDG 6 targets in Jordan. First, it notes the challenges for the national government and extractive organisations. It then discusses the possible deployment by the national government and the extractive organisations of a hegemonic discourse to further their social and material interests and thus hinder the fulfilment of SDG 6.4 (on water use and scarcity) and SDG 6.5 (on water-resource management).

This chapter then highlights the challenges of relevant stakeholders regarding access to clean and sanitary water in Jordan. Additionally, it discusses stakeholders' ideological consent to a culturally intuitive, appealing, and persuasive discourse that counters their own best interests and legitimises the water-related operations and practices in the mining industry that might be both desirable and problematic – and which, furthermore, may be hindering the fulfilment of SDG 6.3 (water quality and wastewater) and SDG 6.6 (ecosystem).

To build the discussion stream, the study builds on Chapters Five and Six, which unpacked the texts and discursive practices of the national government and the extractive organisations. With those analyses, the study explored the national government and extractive organisations' challenges regarding access to clean and sanitary water in Jordan (RQ1). Furthermore, it explored the possible deployment by the national government and extractive organisations of a hegemonic water scarcity discourse. Drawing on those findings, the study shed light on the national government and extractive organisations' exercise of ideological leadership to cultivate the ideological consent of relevant stakeholders. This illuminated the social and material interests of the national government and extractive organisations in deploying this hegemonic discourse, which run counter to the best interests of the 'subaltern'.

Furthermore, this chapter builds on the work of Chapter Seven, which unpacked the discursive practices of stakeholders that influence water-related practices in the mining industry. This enabled an exploration of the challenges for relevant stakeholders regarding access to clean and sanitary water. Drawing on those findings, the investigation was able to reveal the impact of extractive organisations on their stakeholders' water resources (RQ2). In addition, it showed the salient stakeholders' exercise of ideological leadership to cultivate the ideological consent of less salient stakeholders in the mining industry.

By bringing to light the challenges of the extractive organisations and their relevant stakeholders, the analysis identified the water-related challenges that might be preventing the fulfilment of SDG 6 in Jordan (RQ3). Following on, this chapter now highlights the social wrongs derived from the discourse of the extractive organisations and their relevant stakeholders in Jordan. The chapter then shows how the national government and extractive organisations exercise cultural hegemony in Jordan and thereby gain stakeholders' ideological consent to the exercise of ideological leadership that counters their best interests. This chapter also discusses the salience of stakeholders and how this determines their engagement with discursive practices and hence their influence on social practices. Finally, the chapter discusses the impact of discursive practice on shaping social water-related practices that might support or hinder the attainment of SDG 6.

8.1 Clean Water and Sanitation Challenges

This section highlights the social wrongs derived from the discourse of the extractive organisations and their relevant stakeholders, explicitly concerning the consumption, contamination, and depletion of water resources in Jordan. However, it is to be noted that these 'social wrongs' might be both desirable and problematic and both expected and unexpected and may arise at the individual, societal, or industrial levels.

Extractive organisations create social tension due to their use of local water resources; and this is particularly true for those operating in water-stressed countries such as Jordan. As a finite and irreplaceable natural resource, water is fundamental for sustaining social wellbeing, environmental health, and the economic future of humanity. Therefore, water is a prerequisite for the fulfilment of universal human rights (Azapagic, 2004; Mudd, 2010; Northey et al., 2016).

Whilst making a significant economic contribution, the extractive organisations in Jordan are at the same time drawing on the limited water resources of one of the world's most water-stressed countries (al Rawashdeh et al., 2016; Hussein, 2018). The organisations are using limited and vital resources to sustain their operations, leading to problematic levels of consumption, contamination, and loss of water (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016).

Extractive organisations have a detrimental impact on stakeholders' water resources, most notably the cleanliness and sanitation of the water, and stakeholders would be expected to

demonstrate public resistance and protest in protest. However, in practice, stakeholders in Jordan withdraw from public expressions of resistance against extractive organisations' (un)sustainable water-related practices. This study argues that this lack of explicit contestation and opposition does not suggest the absence of a problem (Ekers and Loftus, 2008). Rather, the extractive organisations' practices are producing outcomes that are both desirable and problematic, both expected and unexpected, at the individual, societal, and industrial levels.

This investigation has revealed the national government and extractive organisations' exercise of hegemonic power, which constructs a culturally intuitive, appealing, and persuasive hegemonic discourse. In this regard, the following section (8.1.1.) will discuss the utilisation and deployment of the hegemonic discourse to elicit the consent of less powerful and powerless stakeholders. The subsequent section (8.1.2.) will then explain how the deployment of this hegemonic discourse furthers the interests of the national government and the extractive organisations in Jordan. The chapter will then examine the stakeholders' ideological consent to this culturally and intuitively appealing and persuasive discourse that counters their best interests (8.2), which legitimises mining industry operations and practices that might be both desirable and problematic (8.3) and hinder the fulfilment of SDG 6 (8.4). Figure 8.1 below captures the discourse of extractive organisations and their relevant stakeholders, depicting their challenges in relation to cleaner water and sanitation in Jordan.

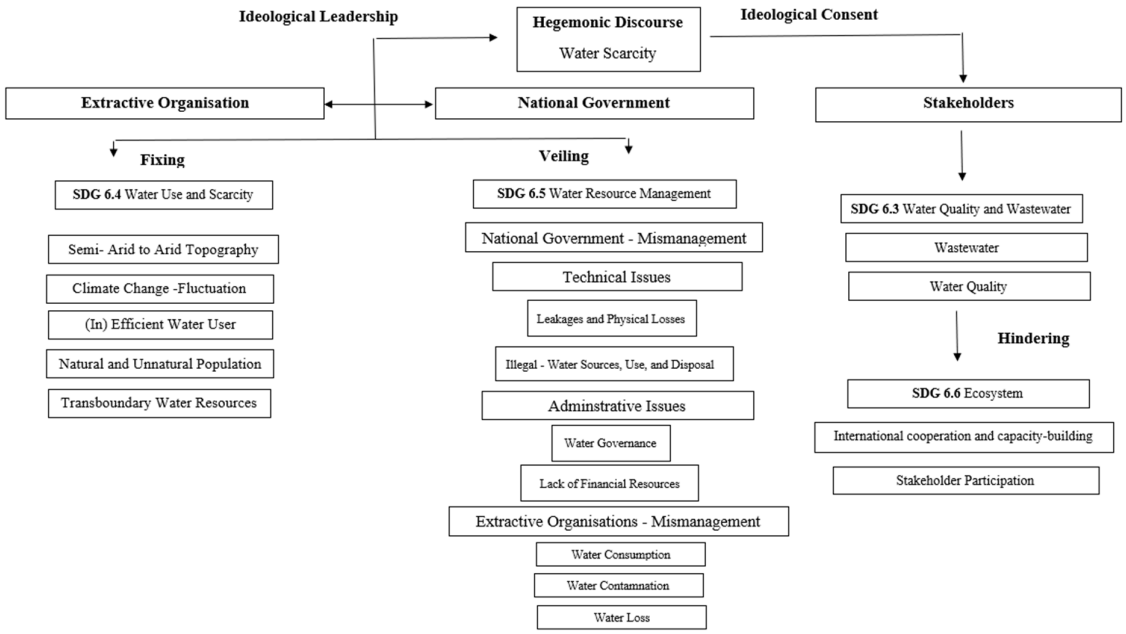

Figure 8.1 Mapping the Discourse

8.1.1 The National Government and Extractive Organisations' Challenges

The unpacking of the discourse of the national government and extractive organisations revealed a hegemonic discourse that externalises the causes of water scarcity in Jordan (Hussein, 2018; Shamayleh, 2019). In their reports, the national government and extractive organisations emphasise the scarcity of water resources and explain that this is amplified by problems in the natural environment, as well as socio-economic and political factors. Their narration depicts water scarcity as a natural phenomenon, caused by prolonged droughts, low levels of precipitation, and a high rate of evaporation (Hussein, 2018; Shamayleh, 2019). In this way, they absolve themselves of responsibility for the crisis.

Furthermore, the national government and extractive organisations reveal two dominant discourses that entail multiple sub-narratives. Collectively, these sub-narratives construct the dominant (water insufficiency) discourse, which fixes the hegemonic water scarcity discourse and obscures the mismanagement of the resources. Moreover, during the interviews, the participants from the national government and the extractive organisations emphasised water use and scarcity and water mismanagement as the principal causes.

Few studies have investigated the challenges around the provision of cleaner water and sanitation from the perspective of the extractive organisations and national government. Even fewer have considered a monarchical context such as Jordan (Al Rawashdeh et al., 2016), where organisations might exercise hegemonic power to advance their social and material interests (see section 1.3.1 for further details). Therefore, the findings of the current study provide a deeper understanding of how the organisations wielding hegemonic 'power' advance their interests in a monarchical context.

Furthermore, these findings provide a deeper understanding of the challenges around the provision of cleaner water and sanitation from the perspective of the extractive organisations and national government dealing with water scarcity, shortages, and starvation, amongst other issues (Tost et al., 2018). That is, these findings provide a deeper understanding of the challenges faced around the world in water-scarce circumstances and thereby contribute to a better understanding of the challenges associated with achieving SDG 6 (see section 1.3.1 for further details).

8.1.1.1 Water Use and Scarcity

During the interviews, the participants from the national government frequently highlighted the scarcity of the water recourses, stating that their observations were 'according to reports from the MWI'. This implied that the MWI[25] – along with the MoE[26] – produces the sub-narratives that are constructing the dominant discourse. At the same time, the MoPIC,[27] in conjunction with the MEMR,[28] reproduces and reinforces the dominant discourse and sub-narratives that are fixing the hegemonic discourse. Therefore, the study infers that the national government drives the dominant discourse and sub-narratives; thereby, the powerful stakeholders might be fixing the hegemonic water scarcity discourse.

As mentioned previously, by unpacking the national government and extractive organisations' discourse, the analysis found that discursively certain sub-narratives were more prominent than others. These sub-narratives include the semi-arid to arid topography, low precipitation and high evaporation rates, climate change fluctuations, as well as natural and unnatural population growth. The findings show that the national government and extractive organisations frame topography as the primary reason for water scarcity, whilst factors in the natural environmental and socio-economic and political conditions are seen to amplify the challenge. By narrating water scarcity as a natural phenomenon, the national government and extractive organisations are thus fixing the hegemonic discourse, externalising the problem, and absolving themselves of responsibility.

Furthermore, the analysis found another discursively prominent sub-narrative concerning inefficient water users. The national government narrates and frames farmers as inefficient users of water resources, thereby obscuring the role of the water-intensive industries, in particular those contributing significantly to the national economy and to rural socio-economic growth and development, such as the mining industry.

As shown by Hussein (2018), the water crisis encompasses a single dominant discourse with two narratives: water insufficiency and water mismanagement. The dominant discourse emphasises external factors that cause the water scarcity issue, such as nature and topography, immigrants and refugees, and transboundary water agreements. However, Hussein (2018)

[25] The MWI is the official ministry responsible for regulating, monitoring, and managing the water sector (Ministry of Water and Irrigation, 2020). Therefore, it 'produces' the dominant water insufficiency discourse.
[26] The MoE is the official ministry responsible for protecting, monitoring, and reporting on the condition of the natural environmental resources, including water (Ministry of Environment, 2020). Thereby, it 'assists' in constructing the hegemonic discourse.

[27] The MoPIC is the liaison between international organisations and governmental ministries in Jordan (Ministry of Planning and International Cooperation, 2020). Therefore, it is responsible for communicating the international and national agendas to other government ministries. Hence, the ministry rearticulates the sub-narratives that reproduce the dominant water insufficiency discourse.
[28] The MEMR is the main regulator and instigator of extractive and mining activity in Jordan (Ministry of Energy and Mineral Resources, 2020). Therefore, it rearticulates the sub-narratives that reinforces the water insufficiency discourse.

failed to address the accountability of organisations that might be escalating the water issues, such as those in the mining industry.

Extractive organisations recognise their need for large quantities of water resources to sustain their operations and practices. Furthermore, they recognise that water issues pose a legitimacy threat to their business. In response, they seek to highlight water-related solutions, operations, and practices that are desirable and legitimate in the eyes of their most powerful stakeholder, namely the national government. In addition, they narrate the socio-economic benefits – especially for the local community – of these practices. In this way, the organisations construct a perception of accountable behaviour and seek to legitimise their operations in the eyes of their less powerful and powerless stakeholders.

Consistent with Shamayleh (2019), the analysis found that the extractive organisations have established alliances and coalitions with the national government in Jordan. In this way, the national government and the extractive organisations together construct a culturally intuitive, appealing, and persuasive discourse of 'water scarcity'. Furthermore, they exercise ideological leadership that cultivates the ideological consent of less powerful and powerless stakeholders, especially those from socially vulnerable and marginalised groups.

In this way, the national government and extractive organisations seek to fix the hegemonic discourse and obscure the inefficient use of water resources by the mining industry. The government does so to legitimise the extractive organisations' water-related practices and thus sustain the socio-economic benefits brought by the extractive organisations at the local and national levels. The following section discusses the mismanagement of water resources by national governments and extractive organisations in Jordan.

8.1.1.2 Water-Resource Management

With regard to water mismanagement, the participants from the national government highlighted sub-narratives of administrative and technical issues, which construct the dominant discourse. Similarly, discursively certain sub-narratives were more prominent than others. For instance, administrative issues – especially regarding the lack of financial resources – were more prominent than technical issues.

A common view amongst the participants was that the MWI was hindered from resolving and mitigating the water issues by a lack of financial sustainability, which might be amplifying the scarcity of water resources. One participant explained,

> *Instead of water sustainability, financial sustainability. We are trying to achieve financial sustainability for the water sector. The water sector is subsidised by the state, as well as funded by international bodies. Therefore, we aspire to reach a stage where at least the financial resources could cover the capital cost, as well as operational and maintenance expense.*

This statement shows how the national government frames a lack of financial sustainability as hindering the MWI in resolving and mitigating the water issues. This finding also offers an insight into the material interests driving the communication of, commitment to, and engagement with SDG 6. Moreover, the national government narrates and frames transboundary water agreements as amplifying water scarcity in Jordan. In this way, the national government deploys these sub-narratives to obscure its own mismanagement of water resources.

The extractive organisations adopted different stances. For instance, EO-A participants complained about leakages and physical losses, which were 'interrupting' their extraction and processing of mineral resources. However, EO-B did not reference leakages or physical losses. The extractive organisations may seek to avoid drawing attention to their water-related practices, especially if they are provided with access to 'limited' water resources by the national government.

Consistent with the conclusions of Belal and Cooper (2011), extractive organisations might refrain from voluntary disclosure due to a lack of resources, knowledge, and awareness or due to legal requirements and the threat of negative publicity, particularly in the case of EO-B. In this way, the organisations might seek to avoid or mitigate legitimacy threats (Belal and Cooper, 2011). Furthermore, they might be sustaining a myriad of operations and practices and thus a business-as-usual attitude.

Consistent with the findings of Marston and Perreault (2017), the analysis revealed that the extractive organisations have established alliances with the national government in Jordan. The two parties are thus collaborating to dominate by exercising ideological leadership that establishes extractive and mining operations as common sense, as well as being essential for the socio-economic development of Jordan. Moreover, they legitimise the water-related operations and practices in the eyes of their less powerful and powerless stakeholders, which enables the organisations to extend their SLO and secure their access to the limited natural resources.

However, these water-related operations and practices – such as the direct disposal of mine wastewater in valleys – might also be problematic. On the one hand, the extractive organisation abides by the less powerful stakeholders' implicit and explicit expectations within the micro-social contract, whilst on the other hand, it is detrimentally impacting the health of the powerless stakeholders – in particular, those who are geographically distant, marginalised, and voiceless.

These findings suggest that the extractive organisations are addressing the less powerful stakeholders' issues that threaten their SLO and their access to limited natural resources. This is consistent with the findings of Jahn and Brühl (2018), which highlight that organisations face the challenge of satisfying multiple contradicting micro-social contracts within local communities. Inevitably, this requires trade-offs within the stakeholder network (Mutti et al., 2012). In response, the organisations only commit to and engage with those stakeholders who could jeopardise the legitimacy of their operations, their long-term profit maximisation, and their survival (Parmar et al., 2010; Pereira Eugénio et al., 2013).

Overall, it is clear that the national government and extractive organisations have established an alliances that is fixing the hegemonic discourse. Together, they deploy the hegemonic discourse to advance their social and material interests; and in doing so, they hinder the fulfilment of SDG 6.4 (water use and scarcity) and SDG 6.5 (water-resource management).

8.1.2 Relevant Stakeholder Challenges

As discussed in the previous section, the analysis revealed that the national government and extractive organisations have established alliances that further their exercise of hegemonic power in Jordan. In this way, they are fixing a culturally intuitive, appealing, and persuasive discourse of water scarcity to advance their social and material interests.

Unpacking the stakeholders' discourse revealed two dominant discourses that entail multiple sub-narratives. Collectively, these sub-narratives create a power struggle that threatens the dominance of the hegemonic discourse, as well as the consent to unequal social relations.

However, the analysis found that stakeholders might be ideologically consenting to a culturally intuitive, appealing, and persuasive discourse that actually runs counter to their own best interests. As a result of this consent, stakeholders come to perceive the extractive organisations' water-related operations and practices as common sense, as well as essential for the socio-economic development of the country.

In the interviews and focus groups, the stakeholders highlighted three challenges relating to water quality and wastewater, lack of stakeholder participation, and lack of international cooperation. Collectively, these challenges threaten a myriad of water-related operations and practices in the mining industry.

Furthermore, the analysis revealed that powerful and less powerful stakeholders perceive the extractive organisations favourably, because the latter tend to abide by their micro-social contracts. These micro-social contracts entails the provision of socio-economic benefits that outweigh the costs to the natural environmental. That is, the extractive organisations offset their negative impact on the environment with a positive socio-economic impact at the national level. In response, the powerful and less powerful stakeholders disregard the impact on the limited water resources at a local and national levels. In this way, they offer legitimacy to the water-related operations and practices, which are thus both desirable and problematic.

However, the extractive organisations are satisfying the powerful and less powerful stakeholders at the expense of the powerless. As a result, they may be endangering their SLO and therefore their access to the limited water resources necessary to sustain their operations and practices within the industry. By extension, extractive organisations are thus endangering their own long-term profit and survival.

Previous studies have tended to focus on managerial perceptions, which favour particular stakeholders over others (Tashman and Raelin, 2013). As a result, they have overlooked the accounts of less powerful and powerless stakeholders who are geographically distant, indigenous, vulnerable, marginalised, and voiceless (Pedrini and Ferri, 2019). However, this study provides a ‘counter account’, which permits the subaltern to raise their voices and assert their interests, pushing back against the unequal social relations (see section 1.3.2 for further details).

8.1.2.1 Water Quality and Wastewater

The analysis revealed that powerful and less powerful stakeholders perceive the extractive organisations favourably because the organisations abide by micro-social contracts involving the international organisations, national government, and NGOs. The micro-social contracts entail the provision of socio-economic benefits that outweigh the costs to the natural environmental at the national level. That is, the extractive organisations offset their negative impact on the environment by ensuring a positive socio-economic impact. However, the

organisations are satisfying the powerful and less powerful stakeholders at the expense of the powerless, such as the local authorities and local communities.

Accordingly, the local authorities and local communities reported a detrimental impact on the cleanliness and sanitation of their water resources. In particular, they reported two challenges: the creation of wastewater and the deterioration in quality of the water resources. For instance, a very powerful comment by a local authority mayor residing near EO-A revealed that,

> *We* [the local community] *drink the saline water, whilst the companies* [the extractive organisations] *use the freshwater (LA – a).*

According to the local authority, the national government's engagement with the extractive organisations might be causing the water issues at the local-community level. In Jordan, extractive organisations contribute significantly to the national economy, as well as driving socio-economic growth and development in rural areas (al Rawashdeh, 2015; al Rawashdeh et al., 2016; al Rawashdeh and Maxwell, 2014). Therefore, the national government legitimises their water-related operations and practices, thereby ensuring the survival of the extractive organisations. The organisations engage with powerful stakeholders such as the national government. However, this may jeopardise their long-term profit maximisation and threaten their survival, especially in emerging and developing countries (Belal and Owen, 2007; Belal and Momin, 2009), as it leads the organisations to overlook the interests of less powerful and powerless stakeholders, such as the vulnerable and marginalised.

Furthermore, the local authority noted that the natural resources will not endure in perpetuity, especially if the organisations continue depleting the limited water resources (needed to sustain their operations) and the natural mineral resources that they are extracting. According to Tarawneh (2016), mineral endowment – such as the high-grade phosphate and potash extracted at a lower operational cost in Jordan – can be a significant source of wealth, especially in emerging and developing countries. Tarawneh (2016) argues that mineral endowment can contribute to a (sustainable) socio-economic and environmental legacy. He explains that a sustainable legacy comprises socio-economic and environmental constructs that should be informed by stakeholder engagement, collaboration, and participation.

By engaging with their stakeholders, the extractive organisations could identify nuanced approaches to sustainable water-related practices that could prevent, mitigate, or resolve the socio-economic and environmental issues. Furthermore, they could protract sustainable operation and practices that provide stakeholders with socio-economic benefit, without having

a detrimental impact on the natural environment, namely a mining legacy (Laurence, 2011; Onn and Woodley, 2014; Tarawneh, 2016; Tost et al., 2018).

In Jordan, the local authority recognises the mineral endowment and expects extractive organisations to use it. For instance, a local authority mayor residing near EO-A stated that,

> *The private sector* [mineral-mining industry] *has a social responsibility towards 'us' the local community (LA – a).*

That is, the local authority expects extractive organisations to use the mineral endowment to deliver a (sustainable) mining legacy – related, in particular, to cleaner water and sanitation (e.g., through water-harvesting dams, recycling plants, and desalination plants). In this way, the extractive organisations could address their stakeholders' present and future needs, whilst securing their own SLO and maintaining access to the limited water resources needed to sustain their operations.

As discussed above, the local authority and local-community participants reported a detrimental impact of the industry's operations on the cleanliness and sanitation of their water resources. Unfortunately, these social wrongs are accepted by the local community due to the socio-economic benefits, which are thought to outweigh the environmental costs.

At the local-community level, the analysis found that local communities made distinctions between water scarcity, shortages, poverty, and stress. For instance, the local community residing near EO-A reported experiencing water *shortages*, whilst those residing near EO-B reported water *insufficiency*. According to the findings, the extractive organisations might be causing water issues at the local level that are amplifying water scarcity at the national level.

According to a MoE report (2016), water provisions are suffering from the pressure exerted by the mining industry's extractive and processing practices. With respect to water quality and wastewater, the local community residing near EO-A reported the availability of ambient water, due to a collaboration between the national government and extractive organisations to construct water-harvesting dams. However, those water resources are shared with the extractive organisations in the mining industry. Thereby, the local community nonetheless suffers from a lack of ambient, clean, and sanitary water.

Similarly, stakeholders residing near EO-B reported a lack of ambient, clean, and sanitary water due to the water-related practices of the extractive organisation that are both desirable and problematic, both expected and unexpected. For instance, regarding the direct disposal of mine wastewater in valleys, the extractive organisation is abiding by the small farmers' implicit

and explicit expectations regarding the micro-social contract, whilst at the same time detrimentally impacting the health of other members of the local community. In this way, the extractive organisation is neglecting to abide by another micro-social contract and thus facing a legitimacy threat to its operations and practices.

These findings are consistent with those of Al-Hwaiti et al. (2016), who investigated the impact of extractive and mining operations' wastewater on agriculture and local communities. According to Al-Hwaiti et al. (2016), mining wastewater can be used to fertilise and irrigate crops due to the inferior levels of toxic heavy metals element in the rock (Al-Hwaiti et al., 2015; Jiries et al., 2004; Rimawi et al., 2009). However, Al-Hwaiti et al. (2016) explain that this wastewater should be mixed with 'fresh' groundwater to reduce the heavy metals and the salinity. Furthermore, the extractive organisations should adhere to international water guidelines for treating mine wastewater, or they risk having a detrimental impact on the soil, underground and surface water, and the food chain. As a result, mine wastewater causes health problems for the local-community members in the long-term.

However, small farmers depend on the discharged mine wastewater to sustain their livelihoods. Likewise, townsmen and women rely on the extractive organisation for socio-economic benefits, such as education, health insurance, employment opportunities, and infrastructure development. Therefore, the local-community members provide legitimacy to the mining organisations' water-related practices, including the direct disposal of mine wastewater in valleys. These findings are consistent with those of Jahn and Brühl (2018), which indicate that organisations face the challenge of satisfying a multiplicity of stakeholder expectations, without breaching their micro-social contracts with the local community (Jahn and Brühl, 2018), which inevitably requires trade-offs within the stakeholder network and thus results in the threat of legitimacy gaps (Pereira Eugénio et al., 2013).

However, this situation could be due to the organisations' lack of stakeholder engagement, which permits 'minority members insider status, belongingness, full contribution, engagement, and participation in the organizational decision-making process, as well as the means to draw out minority members' unique perspectives and to integrate differences within a workplace' (Fujimoto et al., 2019, p.714). It may be possible for extractive organisations to achieve normative-ethical engagement that guides instrumental-strategic behaviour. The following section discusses stakeholders' lack of engagement in the creation of mutually shared value for the common good.

8.1.2.2 Stakeholder Participation

At the municipal level, the local authority highlighted the power asymmetry between this extractive organisations and their multiple stakeholders. Due to this power asymmetry, the extractive organisations might decide to include or exclude certain stakeholders from the creation and distribution of shared value. In Jordan, they have opted to satisfy and engage with their powerful stakeholders, such as the national government, with the goal of legitimising their operations and practices (Suchman, 1995; Deegan, 2002; Deegan, Rankin and Tobin, 2002; Milne and Patten, 2002; O'Donovan, 2002). In this way, the extractive organisations sustain a myriad of unsustainable operations and practices, as well as a business-as-usual attitude in wider society.

However, value creation is interconnected: if managerial actions create value for certain stakeholders, those managerial actions then affect other stakeholder values (Harrison and Wicks, 2013). As a result, organisations risk satisfying one stakeholder only at the expense of another. In Jordan, they have marginalised less powerful and powerless stakeholders whose expectations contradict those of the organisation or its more powerful stakeholders, such as the local authorities and local communities. For instance, a very powerful comment from a female participant residing near EO-B was that, 'we do not feel we are being heard' (FC-W1). The extractive organisations are submerging their voices, interests, and issues and, as a result, they are having a detrimental impact on these stakeholders' social wellbeing, environmental health, and economic prosperity.

According to the local authorities, extractive organisations are failing to engage with the less powerful and powerless stakeholders. Thus, the local authority suggested 'working on parallel diplomacy between municipalities to raise issues and interests, as well as resolving shared problems and issues' (LA-B). That is, the local authority suggested 'collective action' as a mechanism that permits stakeholders to contest and oppose (un)sustainable practices and operations and voice their interests (Dawkins, 2015). In particular, this should involve less powerful and powerless stakeholders, who lack the pragmatic means to assert their issues.

Olsen (2017) highlights the unique role of contestation in raising stakeholders' legitimacy claims. According to Olsen (2017), stakeholders achieve legitimacy through contestation of and opposition to unsustainable practices and operations. Through collective action, local authorities and local communities align with other dominant and powerful stakeholders and

acquire additional salient attributes, thereby changing their configuration of critical attributes (Mitchell, 1997). As a result, the extractive organisations will take notice of those stakeholders and turn their attention to satisfying them.

At present, the organisations may be overlooking opportunities to create shared value and avoid the need for trade-offs between stakeholders' interests. By engaging with their stakeholders, extractive organisations can enhance their ability to address problems that require collective action, such as water scarcity (Klein et al., 2019). In this way, the organisation might uncover operations and practices that address these collective problems, address the stakeholders' claims and rights, prevent threats to desired performance objectives, and ensure the organisation's own survival (Klein et al., 2019).

Currently, the extractive organisations are maintaining the inequitable distribution of water resources in Jordan. They are sustaining a myriad of unsustainable operations and practices, as well as a business-as-usual attitude in society. They are depleting limited water resources, which detrimentally affects their own operations and their stakeholders' social wellbeing, environmental health, and economic prosperity, in the present and future.

At the local-community level, the women were very vocal about the lack of stakeholder engagement. For instance, a very powerful comment by a female participant residing near EO-A revealed that,

> *These companies found in the area do not have an inclusive development plan. They support certain sectors. Therefore, these efforts do not reflect what is on the ground. These companies assign seats for themselves at the social council and they dictate social-economic priorities. We do not sit with them on one table (FC-W2).*

This statement illustrates that local communities perceive extractive organisations unfavourably because of their unjust creation and procedural distribution of shared value. That is, the extractive organisations satisfy the powerful and less powerful stakeholders at the expense of powerless. The local communities thus perceive the efforts of the extractive organisations as philanthropic but sporadic, lacking a unified, holistic, long-term, close-ended, and interlinked development plan. As a result, extractive organisations face the threat of a legitimacy gap that might endanger their SLO, their access to the limited water resources they need to sustain their operations, and their long-term profits and survival.

According to Phillips et al. (2003), stakeholders have an interest in the fairness and justice of the creation and procedural distribution of shared value. The key determinant of fairness and

justice in procedural distribution is the degree of stakeholder engagement, participation, and involvement (Phillips et al., 2003). However, as evident in the earlier statement, the extractive organisations' engagement with stakeholders involves one-way asymmetrical communication (Morsing and Schultz, 2006). Furthermore, their engagement with stakeholders – whether to create or distribute value – lacks fairness, justice, and democracy (Reed, 2008), with trade-offs being made between various stakeholders' expectations.

As observed by Greenwood (2007), stakeholder engagement should be free of power imbalances and asymmetry to facilitate inclusion and equal opportunities for participants to share their interests, especially between socially marginalised groups. In this way, extractive organisations would foster procedural fairness and justice (Phillips et al., 2003), create shared value (Porter and Kramer, 2011), and avoid trade-offs between stakeholders' expectations (Provasnek, Sentic, and Schmid, 2017). Without this, organisations risk their long-term profits and survival (Freeman, 1984).

Similarly, Berman and Johnson-Cramer (2019) maintain that organisations fostering fair creation and procedural distribution creates shared value and avoids the need for trade-offs between stakeholders' expectations. The organisations can address stakeholders' issues equally, albeit based on their relative contributions, cost, and risk. In Jordan, the local communities perceive extractive organisations unfavourably because the community contributes the natural resources that sustain the mining industry operations and practices and, as a result, suffers detrimental impacts on their social wellbeing, environmental health, and economic prosperity (al Rawashdeh et al., 2016).

Likewise, Klein et al. (2019) maintain that, by fostering a governance structure that incorporates fair creation and procedural distribution, organisations create shared value and avoid the need for trade-offs between stakeholders' expectations. However, if an organisation's governance structure is threatened by its external environment, then the value creation activities with stakeholders are put at risk – for instance, through the deterioration of the common-pool resources. A local authority mayor residing near EO-A made a powerful observation:

> *…considering the annual decrease in the Dead Sea level … that soon will be depleted (LA – a).*

The local authorities and local communities recognise that natural resources cannot endure in perpetuity, especially if the organisations continue to deplete the limited water resources that sustain their operations and the natural mineral resources that they are extracting. Klein et al.

(2019) argue that an organisation's ability to adapt to shocks in the institutional environment depends on its stakeholders' enfranchisement[29] and claimancy rights.[30] However, this might require organisations to negotiate or re-negotiate arrangements with their stakeholders, especially the sharing of common-pool resources (Klein et al., 2019). In this way, the organisation and their stakeholders could avoid threats to their joint value creation.

However, Klein et al. (2019) highlight that agreements regarding the sharing of common-pool resources might deteriorate as the resources depreciate, which weakens the bargaining position of the stakeholders and leads to costly re-negotiations. Therefore, 'close-knit' stakeholders might use the complex, layered, and nuanced mechanisms of coordination, collaboration, and communication to leverage their claimancy rights and identify a path forward, such as 'collective action', which was suggested by the local authority.

Overall, the findings suggest that stakeholders give ideological consent to a culturally intuitive, appealing, and persuasive discourse that counters their own best interests. Furthermore, powerful and less powerful stakeholders perceive the extractive organisations favourably because they abide by a micro-social contract. That is, they provide socio-economic benefits that outweigh the costs to the natural environmental cost. As a result, the powerful and less powerful stakeholders choose to disregard the impact on the 'limited' water resources at a local and national level. In doing so, they offer legitimacy to the mining industry's water-related operation and practices that are both desirable and problematic.

However, the local authorities and local communities perceive extractive organisations unfavourably because of their one-way, asymmetrical communication and failure to engage with their interests. Furthermore, they object to the organisations' unjust creation and procedural distribution of shared value. Therefore, the extractive organisations implement poorly designed and desirable – albeit problematic – strategies, operations, and practices.

These findings suggest that the extractive organisations might be overlooking opportunities to achieve normative-ethical engagement with stakeholders to guide their instrumental-strategic behaviour. These opportunities might permit transformative sustainable change that would benefit the organisation itself, the local community, and Jordan as a whole.

[29] According to Klein et al. (2019), enfranchised stakeholders are actors with the de facto ability to influence decision-making. Stakeholders achieve the status of enfranchised by contributing resources and capabilities that are central to the organisations' value creation.
[30] According to Klein et al. (2019), claimancy rights establish which stakeholder or stakeholder groups capture the value created by the organisations.

Furthermore, the extractive organisations' lack of stakeholder engagement might be hindering the fulfilment of SDG 6, specifically SDG 6.3 (on water quality and wastewater) and SDG 6.b.1 (on stakeholder participation). However, this could be due to the lack of international cooperation between the relevant actors. Therefore, the following section discusses international cooperation in relation to both the national government's commitment to meeting the Agenda 2030 SDGs and the extractive organisations' lack of explicit communication of, commitment to, and engagement with the SDGs.

8.1.2.3 International Cooperation

In Jordan, while the national government has officially committed to meeting Agenda 2030's 17 SDGs, only 30 organisations have registered to communicate their progress towards the goals, excluding the mineral mining industry (United Nations Global Compact (UNGC), 2017).

The findings from the interviews suggest that the national government might be preoccupied with reporting the nation's progress towards the Agenda 2030 SDGs. Therefore, to operationalise the SDGs, the national government is collaborating with international organisations and NGOs, which are providing social and material support in Jordan. Thereby, consistent with the findings of Hussein (2018) and Shamayleh (2019), the analysis suggests that the national government is deploying a hegemonic discourse and collaborating with others to advance its social and material interests (such as financial sustainability) and to ensure that, in the eyes of international actors and the global community, Jordan appears to be progressing towards SD.

According to a MoPIC participant, the national government assigned 'standalone' SDGs to government ministries, based on their sphere of influence – for instance, for the MWI, this was SDG 6.[31] However, by doing so, according to this participant, the national government might be hindering international cooperation with international organisations and NGOs. Furthermore, the national government might be responsible for the 'lack of interlinkage' between the SDGs in Jordan and thus be hindering the fulfilment of SDG 6.6 (ecosystem), explicitly 6.a.1, concerning international cooperation.

By interlinking the SDGs, the national government could reduce the trade-off between the SDGs at the national level and achieve unified, holistic, short-term, close-ended, and

[31] The MWI is responsible and accountable for reporting on the SDG 6 targets and indicators. However, with assistance from the MoE, the MWI is constructing a standalone SDG 6 narrative. For futher details, refer to section 5.2.2 in Chapter Five.

'interlinked' progress towards the SDGs. Furthermore, it could advance 'mutual' social and material interests in Jordan. As stated here:

> *'We' should work on the interlinkage between SDGs. To work on the interlinkages, 'we' should establish a clear map of the connections between them, as well as the sectors. And, as a result, the small interlinkages become the reason for achieving the SDGs … Therefore, the little pieces are the reason for adding value, similar to a mosaic.*

With respect to the mining industry, according to Dyllick and Muff (2016), organisations embracing SD demonstrate sustainable corporate operation and practices and are, therefore, 'highly' likely to shift their focus towards the Agenda 2030 SDGs (van der Waal and Thijssens, 2020). However, this study found that whilst extractive organisations communicate their commitment to SD generally, they lack explicit communication of, commitment to, and engagement with the SDGs (including SDG 6).

As the national government is preoccupied with reporting on national progress towards the Agenda 2030 SDGs, extractive organisations lack governmental direction and guidance, as well as certainty on government standards, regulations, and policies. Therefore, they face the challenge of interpreting the global SDG targets and indicators into their corporate operations and practices.

Furthermore, the analysis found that the extractive organisations lack direction due to an 'inactive' local GC Network. The Global Compact (GC) is the interface between the UN and the corporate business sector. According to van der Waal and Thijssens (2020), UN GC membership is the most consistent characteristic of organisations that demonstrate communication of, commitment to, and engagement with SDGs, since the GC interprets the macro-global discourse into a micro-corporate discourse, which aligns the SDG targets and indicators with corporate strategies, operations, and practices. The extractive organisations in Jordan lack awareness and knowledge of the SDGs because the local GC Network is inactive. Taken together, these findings explain the organisations' lack of explicit communication of, commitment to, and engagement with the SDGs (including SDG 6).

Moreover – and most importantly – the Agenda 2030 SDGs constitute a threat to business-as-usual, especially in relation to the (un)sustainable water-related practices in the mining industry. Nevertheless, according to Gusmão Caiado et al. (2018), the Agenda 2030 SDGs represent a top-down approach that is designed, dictated, and directed by the 'powerful' elite, in particular with regard to the operations and practices. Therefore, if extractive organisations

embrace the Agenda 2030 SDGs, they might cherry-pick and prioritise those that conform to business-as-usual, rather than taking advantage of the opportunity to achieve transformative sustainable change to benefit the organisation, wider society, and the world as a whole.

Hence, the study concurs with Gusmão Caiado et al. (2018) that a bottom-up approach is required to embrace a high-powered, stakeholder-driven, problem-solving network. This would allow extractive organisations to embrace stakeholder engagement and collaboration and incorporate stakeholders' expectations and interests into the operationalisation of the SDGs. In this way, they would obtain stakeholders' ideological consent, which would legitimise their water-related practices in the mining industry. In turn, this would allow the organisations to sustain their operations and practices, as well as contributing to SD.

8.2 Saliency of Extractive Organisations and their Relevant Stakeholders' Discourse

Unpacking the stakeholders' discourse revealed that stakeholders ideologically consent to a culturally intuitive, appealing, and persuasive discourse that runs counter to their best interests. However, this does not imply the absence of other voices, narratives, and discourses. Rather, within the discursive arena, the hegemonic discourse coexists with other discourses.

According to Mitchell et al. (1997), organisations differentiate between and prioritise stakeholders based on the saliency (power, legitimacy, and urgency) of their claims, which influences their engagement with those stakeholders. Influenced by the work of Mitchell et al. (1997), this study argues that the saliency of the discourse determines the organisations' engagement with their stakeholders, with organisations including or excluding certain stakeholders in/from the discursive arena. As a result, organisations construct and maintain power relations within their social reality (Gramsci, 1971). Table 8.1 below depicts the typology of the stakeholder discourses that influence water-related practices in the mining industry.

Colvin, Witt, and Lacey (2016) investigated organisation managers' repeated inclusion of the same parties as representatives, who thus achieve 'stakeholder status' in the eyes of privileged managers. According to Colvin, Witt, and Lacey (2016), organisations exclude unconventional stakeholders, due to cognitive and institutional blind spots, especially during stakeholder identification and engagement. As a result, organisations endanger the legitimacy of their own operations and practices, their long-term profit maximisation, and even their survival.

Therefore, Colvin, Witt, and Lacey (2016) advise going beyond 'the usual suspects' and engaging with a wider range of stakeholder claims.

Similarly, Wood, Mitchell, Agle, and Bryan (2021) argue that organisations overlook non-contractual claims and, as a result, 'harm can be dealt to parties [stakeholders] who are in involuntary relationships with a company' (Wood et al., 2021, p.197). Based on these conclusions, this study focused on identifying both familiar and unfamiliar stakeholders. In this way, it avoided engaging solely with privileged understandings and perceptions of stakeholders and interacting with pre-existing social structures. As a result, this study has provided space for the voices of the subaltern, who struggle to raise their legitimate claims (Alawattage and Wickramasinghe, 2009; Jayasinghe and Thomas, 2009; Lanka, Khadaroo, and Böhm, 2017).

3323 Table 8.1 Typology of Stakeholder Discourse

Broad – Stakeholder Classification	Narrow – Stakeholder Classification	Description of the Stakeholders' 'Salient' Claims within the Discourse			Stakeholders	Discourse
		Power	Legitimacy	Urgency		
Non-stakeholder	Potential	Possesses none of the attributes. *'As mentioned, the **** role is to support the government in meeting national agreements and, therefore, their obligations to SDG 6. For instance, agreements linked to the water sector, such as the Agenda 2030, Paris Agreement, and Triple C.'* *– Sustainability SDGs Director in Jordan*			International Organisation	Alternative
Latent	Dormant	Possesses the attribute of power, although it is unused. Examples are those who have a loaded gun (coercive), who can spend a lot of money (utilitarian), or who can command the attention of the media (normative). *'Since the establishment of the kingdom, the Bedouin tribes have been loyal – the backbone of the monarchy. Therefore, for historical reasons, the Bedouin tribes have the power to influence the shape of politics, as well as constitutional laws, legislation, and policies in parliament … For this reason, also, the Bedouin tribes secure governmental and military positions in Jordan … The 'sheikhs' of Bedouin tribes command elite members of the tribe, who have vast lands, livestock, money, etc.' – Research Academic*			*Bedu*	Marginalised
	Discretionary	Possesses the attribute of legitimacy (i.e., stakeholders who have a legitimate relationship with the organisations).			Non-Governmental	Parallel

		'We monitor the quality of water and ensure the cleanliness and sanitation of water for multiple institutions, such as extractive organisations, airports, and municipalities, amongst others.' *– NGO General Director* '(speaking in an irritated tone) *Yes, they constantly check the water quality on the site, as well as nearby water sources.'* *– Extractive Organisation Manager*	Organisations (NGOs)	
	Demanding	Possesses the attribute urgency. They are the 'mosquitoes buzzing in the ears'. *'We are approached by academics to conduct research.'* *– Extractive Organisation Manager*	Journalists & Research Academics	Demanding
Expectant	Dominant	Possesses the attributes of power and legitimacy. *'As the 'voice' of 'our' local community.'* *– Mayor of Southern Municipality* *'To respond, 'we' use the 'local-community card' to exercise pressure.'* *– Mayor of Southern Municipality*	Municipal Authority & Employees and Managers of Extractive and Mining Organisations	Dominant
	Dangerous	Possesses the attributes of power and urgency. Will be coercive and possibly violent, making the stakeholder 'dangerous' to the firm. *'If we stop pumping the water to them … there will be problems … they always want the water to be pumped to them … Once, we cut off the water. They held a demonstration and closed the mine.'*	Farmers	Oppositional

		– Extractive Organisation Employee		
	Dependent	Possesses the attributes of legitimacy and urgency but lacks the power to act. Must rely on the advocacy of powerful stakeholders, benevolence, and voluntarism to carry out their will. *'Before the establishment of the **** company, the area was destitute, suffering from unemployment, ignorance, disease, and extreme poverty. It is an agricultural area … the 'food basket' of Jordan. However, it was not exploited well. After the establishment of the company, the social circumstances improved and many of the local community are employed in the company.'* *– Extractive Organisation Manager* *'After we finish excavating a site … the exaction site is converted to a sand dam. A proportion of the water that the company uses for the washing or purification process … would be dumped in a valley … And the local community members pump the water for the irrigating of their crops.'* *– Extractive Organisation Manager* '*One time 'they' asked if 'we' reserved water for the ecosystem, namely the natural environment. We do not have enough water to drink.'* *– National Government Official*	Townsmen & Women, the Environment (Dead Sea)	Sanctioned

Stakeholder	Definitive	The combination of all three attributes, which managers prioritise. *'… the ministry's legislative framework governs and regulates the operation of the water sector. And the ministry uses a water-management system to govern water resources, thus protecting water resources from illegal attacks by internal, external, and foreign bodies. Therefore, we protect water resources through legislative regulation and policies.'* *– National Government Official* *'We are one of the poorest water-resource countries in the world … We have insufficient water supply to meet demand.'* *– National Government Official*	National Government Ministries (the Ministry of Water and Irrigation, Ministry of Environment, Ministry of Energy and Mineral Resources, and Ministry of Planning and International Cooperation)	Hegemonic

3324

By combining the attributes, the stakeholder typology framework results in four broad classifications and eight narrow descriptions of stakeholder discourse (in declining order of priority): definitive, dependent, dangerous, dominant, demanding, discretionary, dormant, and potential.

Definitive stakeholders demonstrate three attributes in their discourse, or their text and discursive practice. Behind the discourse, they exercise both coercive and utilitarian power. Within the discourse, they exercise normative power. Within the context of this study, they exercise ideological leadership, wielding hegemonic power to obtain the ideological consent of less salient stakeholders (Gramsci, 1971). According to Gramsci (1971), hegemony does not imply hard coercion to attain consent, such as the employment of military force. Rather, hegemony establishes dominance through soft coercion, namely persuasion. That is, hegemony establishes dominance by obtaining consent to ideological leadership.

Definitive stakeholders legislate and govern compliance using national laws, regulations, and standards – for instance, water governance rules and mining codes. Therefore, definitive stakeholders have a legitimate relationship with the organisations in the mining industry. They also demonstrate urgency, which drives the hegemonic discourse. For example, definitive stakeholders promote time sensitivity by referring to 'Day Zero', as well as critical implications for other stakeholders.

Definitive stakeholders **–** such as the MWI, the MoE, the MEMR, and the MoPIC – produce, co-produce, and reproduce the dominant discourses that construct the hegemonic discourse. They consent to the hegemonic discourse – which legitimises (un)sustainable water-related practices – to further their interests, such as sustaining the mining practices that provide socio-economic value at both the local and national levels.

According to Olsen (2017), the managerial perception may favour a particular stakeholder over others, due to the influence of the state. In the context of this study, the national government – a unique stakeholder – has the power to determine the salience of stakeholders. It uses a variety of powerful tools that limit or expand managerial perceptions of stakeholders' salience, specifically through regulations and policies (Olsen, 2017). In this way, the government conditions its transactions and engagement with less salient stakeholders, such as local communities.

However, the participants in this study revealed an even more powerful stakeholder, namely the king, the Monarch of the Royal Hashemite Kingdom of Jordan. According to a participant from a local authority,

> *We call it the 'Royal Touch'. What 'I' mean is … if the higher level of leadership highlighted an issue, then attention would be paid to the issue … and the work is done (LA – b).*

In Jordan, the monarchy holds and exercises power that shapes and guides the national government (both parliamentary and ministry power). The monarchical structure uses a variety of powerful tools that shape, sanction, block, and resist policies and regulations. Therefore, the monarch has the power to determine the saliency of other stakeholders and thereby influence organisations' engagement with their less salient stakeholders.

Potential stakeholders demonstrate two distinct salient attributes in their discourse. In this study, potentially dependent and dominant stakeholders reproduce the 'sanctioned' dominant discourse and sub-narratives that construct the hegemonic discourse. By reproducing the 'sanctioned' dominant discourse, potential stakeholders consent to (un)sustainable water-related practices in the mining industry. However, dependent stakeholders might rely on dominant stakeholders' power to further their interests. Conversely, the dangerous stakeholders produce an opposing discourse that challenges the hegemonic discourse. As a result, the hegemonic discourse faces a power struggle to maintain both dominance and consent and thereby legitimise the (un)sustainable water-related practices.

In the mining industry, extractive organisations interact with configurations of stakeholder networks, and this determines the nature of the organisations' engagement with their stakeholders. The organisations face the challenge of satisfying a multiplicity of stakeholder interests within their stakeholder network (Post et al., 2002). They must satisfy conflicting interests, with the satisfaction of one stakeholder thus coming at the expense of another (Mutti et al., 2012).

Dependent stakeholders rely on extractive organisations for socio-economic development through employment opportunities, health insurance, infrastructure development, and so on. Furthermore, they suffer the detrimental impacts of the extractive organisations' actions on their water resources. As a result, dependent stakeholders have a legitimate relationship with the extractive organisations that require an SLO from the local community.

Similar to definitive stakeholders, dependent stakeholders demonstrate urgency, rearticulating time sensitivity by referring to dry-drought season, as well as the critical implications for the livelihoods of the local community's townsmen and women. However, dependent stakeholders reproduce the sanctioned dominant discourse, which externalises water insufficiency in Jordan. In this way, they legitimise (un)sustainable water-related practices that go against the present and future generations' interests.

Whilst dependent stakeholders rely on the power of dominant stakeholders such as the local authority, *dominant* stakeholders exercise coercive power behind the discourse, such as using the 'local community card'. In Jordan, the dominant stakeholders rely on extractive organisations for socio-economic development through employment opportunities, health insurance, and infrastructure development. Therefore, dominant stakeholders have a legitimate relationship with extractive organisations that require an SLO.

Furthermore, dominant stakeholders reproduce and reinforce the sanctioned dominant discourse, which constructs the hegemonic discourse. In this way, they legitimise (un)sustainable water-related practices that go against the interests of present and future generations. These stakeholders include local authorities, as well as the employees and managers of organisations in the mining industry.

Dangerous stakeholders exercise coercive power behind the discourse – for example, public protests by small farmers. In the configuration of power, Guha (1997) asserts that hegemony occurs if persuasion outweighs coercion. Conversely, dominance occurs if coercion outweighs persuasion. Importantly, Guha (1997) highlights the historical presence of coercion in hegemony, arguing that hegemony establishes dominance through persuasion and elements of coercion. In this way, the author avoids referring to hegemony and dominance synonymously.

Similarly, this study avoids referring to 'hegemony' and 'dominance' as synonymous. Dangerous stakeholders exercise dominance – that is, they use hard coercion to obtain coerced consent (Guha, 1997). In this context, as dangerous stakeholders, small farmers protest against extractive organisations cutting off the discharged water from extractive and mining operation sites. These dangerous stakeholders rely on the distrusted water to irrigate their crops. Furthermore, dangerous stakeholders demonstrate urgency by referring to dry-drought season and the critical implications for agriculture.

Therefore, dangerous stakeholders articulate oppositional discourse that challenges the sanctioned dominant discourse that constructs the hegemonic discourse. Thereby, extractive

organisations keep their dangerous stakeholders satisfied by responding to their interests. However, the dangerous stakeholders reproduce the sanctioned dominant discourse, which legitimises (un)sustainable water-related practices in the mining industry.

From this perspective, it appears that dominant and dependent stakeholders value socio-economic development over the sustainability of the natural environment. The extractive organisations create socio-economic value that cultivates the ideological consent of dominant and dependent stakeholders. In this way, they legitimise the (un)sustainable water-related practices needed to sustain their mining operations. In addition, they maintain their SLO and their access to the limited water resources.

The analysis also revealed that extractive organisations satisfy their dangerous stakeholders at the expense of their dependent and dominant stakeholders. In this way, the organisations secure and maintain their SLO – and thus their access to limited water resources – which sustains their operations and practices in the industry. In addition, they sustain their own long-term profits and survival.

Consistent with the conclusions of Spicer et al. (2004) and Jahn and Brühl (2018), the extractive organisations abide by micro-social contracts that contradict one another (Spicer et al., 2004; Jahn and Brühl, 2018). For instance, they provide distrusted industrial water for irrigating, thereby abiding by their micro-social contract with small farmers. However, this may cause health problems for the local community in the long-term, which would constitute a breach of the micro-social contract with the local-community members.

The *latent* stakeholders demonstrate one distinct salient attribute (although they might also acquire a second). According to Wood et al. (2021), by engaging with stakeholders, organisation managers enhance and develop their perceptions of stakeholders and thereby recognise the flux in their claims' attributes of power, legitimacy, and urgency (Wood et al., 2021). That is, stakeholders who are neither salient nor recognisable/familiar at a particular point in time might later come to align with other dominant and powerful stakeholders (Mitchell, 1997), thereby acquiring additional salience and changing their configuration of critical attributes (Mitchell, 1997).

The extractive organisations should be recognising and monitoring those stakeholders who might graduate in saliency. However, at present, they are only recognising and engaging with those who do not challenge the social and material interests of themselves and their powerful stakeholders. Within their discourse, latent stakeholders express marginalised, parallel, and

demanding voices that either construct or deconstruct the hegemonic discourse. Latent stakeholders include *dormant, discretionary*, and *demanding* stakeholders.

The *dormant* stakeholders have only slight interactions with the extractive organisations, and these stakeholders include such as the *bedu*. In Jordan, as in other tribal systems, Bedouin tribes hold coercive, utilitarian, and normative power, such as political influence, the possession of natural resources and land, and an honourable reputation. Such dormant stakeholders have the power to reproach the extractive organisations and prevent them from utilising the limited water resources in Jordan.

Interestingly, the dormant stakeholders in this analysis highlighted the significance of a non-human stakeholder that shaped their water-related practices, namely the natural environment. Similarly, the definitive stakeholders also highlighted the gravity of the issue by referring to another non-human stakeholder, namely the water bodies. According to Derry (2012), these voiceless stakeholders either lack representation or are misrepresented in mainstream discourse. The extractive organisations marginalise the voiceless stakeholders who challenge either their strategic operations and practices or the expectations of their powerful stakeholders.

However, the dormant stakeholders demonstrate consent to dominant and hegemonic discourse, thus legitimising (un)sustainable water-related practices. A possible explanation for this might be that the *bedu* represent efficient water-users who are resourceful in identifying, managing, and storing water resources. Therefore, they reveal a marginalised discourse that illustrates efficient and sustainable water-related practices.

To fix the hegemonic discourse, the extractive organisations establish alliances and coalitions with *discretionary* stakeholders such as NGOs. The organisations pursue relationships with discretionary stakeholders because these parties articulate a parallel discourse that legitimises the hegemonic discourse (i.e., water scarcity). Thereby, the organisations further their own interests within the hegemonic network, whilst the discretionary stakeholders legitimise the (un)sustainable practices in the mining industry.

Demanding stakeholders demonstrate urgency by emphasising time sensitivity and the critical implications for others' reality. These stakeholders include journalists and research academics. They articulate a demanding discourse that challenges the sanctioned dominant discourse, which constructs the hegemonic discourse. However, they also articulate the publicly sanctioned dominant discourse, which legitimises the hegemonic discourse, namely water scarcity.

Non-stakeholders lack salience within the stakeholder network. However, they might acquire salient attributes and become *potential* stakeholders. These parties include international organisations. Potential stakeholders give consent by rearticulating the sanctioned dominant discourse on 'water scarcity'. However, until potential stakeholders acquire a salient attribute, they lack influence over extractive organisations' (un)sustainable water-related practices.

Therefore, the study has shown that different voices shape discourse by driving, sanctioning, partnering, resisting, and showing indifference to narratives within the discursive arena. In this way, multiple stakeholders' voices can legitimise or delegitimise the water-related practice in the mining industry.

8.3 Revealing Discrepancies Between Text, Discourse, and Practice Within the Discourse Arena

To reveal the hegemonic rhetoric, the study adapted the Fairclough (2001) tri-dimensional framework, which demonstrates the inter-dependency of the text, discursive practice, and social practice. The study then explored the difference between the text, discourse, and practice in relation to the water crisis in Jordan. In Figure 8.2 below, the circles represent the salient and less salient stakeholders within the stakeholder network. However, the size of the circle represents the power held by stakeholders, thus the larger the circle the more powerful the stakeholders' claims. Thereby, stakeholders variously hold explicit, coercive, utilitarian, and normative power, which influences organisations' water-related practices. In addition, the lines represent the stakeholders' legitimate and urgent claims. They represent the unidirectional movement of stakeholders' claims, which support, oppose, or are indifferent to the hegemonic discourse.

As shown by Greenwood (2007) and Deegan (2019), there is power asymmetry between organisations and their stakeholders, in particular the socially marginalised groups. This analysis has revealed the power asymmetries between organisations and their stakeholders – explicitly, the powerful, less powerful, and powerless stakeholders. The power struggles between the organisations and their stakeholders could also be interpreted as a hegemonic power struggle within the discursive arena. Furthermore, the study captured a wide range of voices and thus an alternative narrative of ethical-moral behaviour, which contributes to gaining, managing, maintaining, and correcting illegitimate actions.

Collectively, the circles and lines represent the stakeholder network that operates within a hegemonic network of power. Within this network of power, stakeholders articulate and distribute a graduation of salient claims through discourse and narratives, which socially construct meaning within discursive fields and domains, otherwise known as the 'discourse arena' (Ferns and Amaeshi, 2019). Examples include international summits, BOD meetings, city council assemblies, and family gatherings.

Figure 8.2 shows that the discourse arena encompasses three discursive fields or domains: descriptive text, discursive practices, and social-cultural practices. Extractive organisations and their salient stakeholders exercise ideological leadership to obtain the ideological consent of the less salient stakeholders. By doing so, they secure positions of power within the hegemonic network, as well as fixing the meaning. However, they struggle to maintain dominance, due to dominant, oppositional, and demanding narratives in the discourse arena.

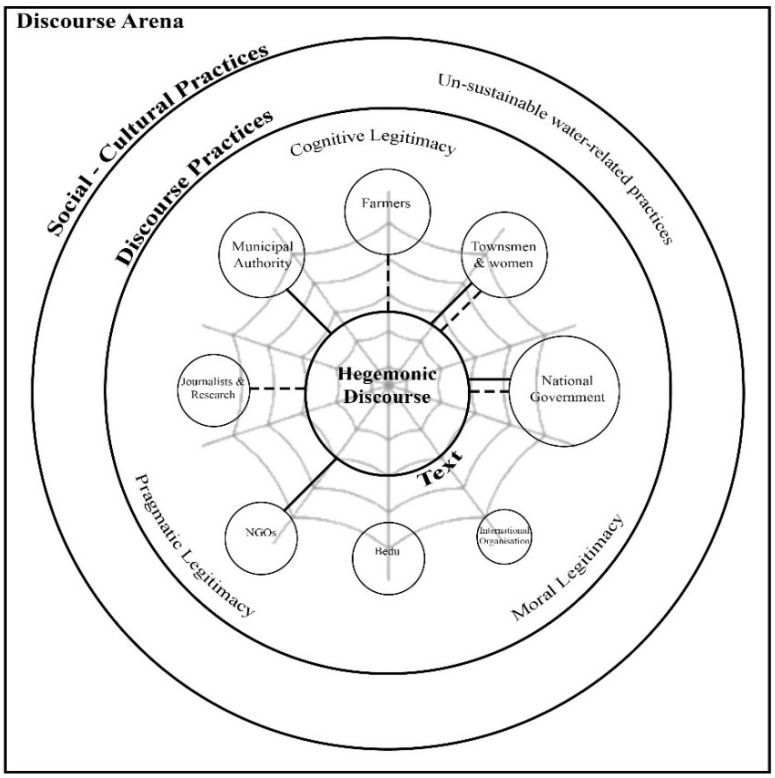

Figure 8.2 From Discourse to Practice Framework

In the text field, extractive organisations and their salient stakeholders exercise ideological leadership by articulating and distributing the hegemonic discourse, which encompasses the powerful, legitimate, and urgent claims. By exercising ideological leadership, the organisations

and their definitive stakeholders are able to fix the hegemonic discourse, thereby cultivating the ideological consent of both less powerful and powerless stakeholders. In this way, they further their social and material interests.

In its reports, the national government emphasises water scarcity in Jordan. It explains that water scarcity is amplified by the natural environment, as well as socio-economic and political factors. In this way, the government externalises the causes of the problem and absolves itself of responsibility (see section 5.3.1 for further details).

The extractive organisations also emphasise water scarcity. To maintain the power of the hegemonic discourse, the organisations deploys the dominant water-insufficiency discourse, which entails three sub-narratives: the natural environment narrative, the socio-economic narrative, and the political narrative. In this way, the organisations externalise the causes of the problem.

The study has also identified several narratives that construct and legitimise water-related practice. For example, EO-A disclosed seven narratives in its written documentation: responsibility, commitment, compliance, transparency, strategic, accountable and knowledge narratives. In this way, EO-A portrays itself as a sustainable organisation that goes beyond commitment, compliance, and responsibility. However, EO-B disclosed three narratives of responsibility, commitment, and strategic, thereby conveying itself as a sustainable organisation that provides goods and services (economic responsibility), as well as returns to the national and local communities (social and environmental responsibility; see section 5.3.2 for further details).

Within the discursive field, extractive organisations and their salient stakeholders exercise ideological leadership, which fixes less salient stakeholders' perceptions, understanding, and expectations of water-related practices, showing the organisations' accountability in relation to cleaner water and sanitation issues. Subsequently, stakeholders give ideological consent to the hegemonic discourse, which dictates common sense, the status quo, and the natural water-related practices in the mining industry. In this way, the less salient stakeholders cognitively legitimise unsustainable practices in the mining industry.

Unpacking the national government and extractive organisations' discourse in Chapter Six, the analysis identified a hegemonic discourse that externalises the causes of water scarcity in Jordan. The national government and the extractive organisations deploy the hegemonic discourse to hide their mismanagement of the limited water resources.

The government may resort to this to absolve itself of responsibility for the water-scarcity issue. Furthermore, it may be attempting to hide the inefficient use of water resources. Extractive organisations contribute significantly to the national economy, as well as to rural socio-economic growth and development in Jordan. Therefore, the national government might be hiding the organisations' mismanagement of water resources and legitimising their water-related practices in order to sustain the socio-economic benefits at the local and national levels.

The extractive organisations deploy the hegemonic discourse to exercise the ideological leadership needed to legitimise their water-related operations and practices. By doing so, they legitimise practices that are both desirable and problematic in the eyes of their less powerful and powerless stakeholders. They also extend their SLO and ensure their access to limited natural resources. However, as a result, they face power struggles from other demanding, oppositional, and alternative narratives.

As previously mentioned, the hegemonic discourse coexists with other discourses in the discursive field (see section 8.2 for further details). Unpacking the stakeholders' discourse in Chapter Seven, the analysis identified the sanctioned, dominant, and parallel voices that are ideological consenting and thus fixing the hegemonic water-scarcity discourse (see section 8.2 for further details). These voices emerge from powerful and less powerful stakeholders who perceive the extractive organisation favourably because it abides by a micro-social contract. A micro-social contract entails the provision of socio-economic benefits that outweigh the costs to the environment at the national level. That is, the organisations offset their negative impact on the environment with a positive socio-economic impact. However, by doing so, the extractive organisations are satisfying the powerful and less powerful stakeholders at the expense of the powerless, such as local authorities and the local community.

The analysis also revealed demanding, oppositional, and alternative voices that challenge the hegemonic discourse (see section 8.2 for further details). This reveals a hegemonic power struggle that could disassemble the hegemonic discourse in Jordan. These voices emerge from the powerless stakeholders who perceive extractive organisations unfavourably because, whilst the communities contribute natural resources to sustain the extractive organisations' operations and practices, they also suffer detrimental impacts on their social wellbeing, environmental health, and economic prosperity as a result. In short, the organisations are neglecting to abide by their micro-social contracts at the local level.

Moreover, the study revealed marginalised voices that are resourceful in identifying, managing, and storing water resources (see section 8.2 for further details). These voices represent efficient

water users who perceive water scarcity only at the national level. However, collectively, they could reveal normative-ethical water-related practices that could sustain the extractive organisations' instrumental-strategic operations and practices.

In the social-cultural field, the study captured the influence of the extractive organisations' operations and practices on the stakeholders' water provisions. It identified discrepancies between text, discursive, and social practices in the mining industry. For instance, extractive organisations disperse 'discursively' responsible and accountable narratives, whilst using water-related practices that are both desirable and problematic (see section 5.4 for further details). Nevertheless, in the social-cultural field, the less salient stakeholders cognitively legitimise these desirable and problematic water-related operations and practices. As a result, discourse develops into practice, which furthers the social and material interests of the extractive organisations and their salient stakeholders.

8.4 Water-Related Practices: Derived from the Extractive Organisations and their Relevant Stakeholders

In the context of this study, the national government and the extractive organisations exercise ideological leadership, which cultivates the ideological consent of the less powerful and powerless stakeholders and serves their social and material interests. In this way, they achieve cultural hegemony and avoid hegemonic struggles in society. By fixing the hegemonic discourse, they construct and sanction social practices that address water supply and demand issues.

According to Shamayleh (2019), the ruling or dominant class uses hegemonic discourse to construct and sanction sustainable water-related practices and solutions to address water-supply issues – for example, water-harvesting dams, reuse of treated water, water recycling plants, and water desalination. By increasing the water supply through large-scale, costly implementation, the ruling or dominant class maintains 'common sense', status quo, and 'natural' water-related practices.

In Jordan, the national government and extractive organisations have established a coalition to maintain their cultural hegemony and advance their social and material interests (Shamayleh, 2019). According to the national government, the expensive, high-end practices and solutions are the only viable and feasible options for satisfying the growing water demand in Jordan. Examples include the Disi Water Aquifer and the Red Sea Water Desalination Project.

Likewise, the organisations agree with the national government that these expensive, high-end solutions are the only viable means of sustaining their operations and practices in the mining industry.

In this way, the national government maintains the flow of international aid (Shamayleh, 2019), while extractive organisations maintain their SLO and their access to limited natural resources. Therefore, both parties favour sustainable water-related practices and solutions that address the supply-side issues.

However, the ruling or dominant class marginalises those sustainable water-related practices and solutions that address demand-side issues. That is, they overlook vulnerable - less powerful and powerless stakeholders, which marginalised discourses might address water management (demand issues). Thereby, the national water policies 'remain' focused on water insufficiency (supply solutions), rather than to water mismanagement (demand solutions), particularly, the Water Demand Management Policy in the Jordan 2025: National Water Strategy. According to Shamayleh (2019), the ruling or dominant class's marginalisation of sustainable water-related practices and solutions disrupts the hegemonic discourse on 'water scarcity'. Without this marginalisation, the ruling or dominant class would struggle to maintain the dominance of the hegemonic discourse and – thereby – its social interests.

According to international organisations and NGOs, there is still space to manoeuvre regarding the limited water resources in Jordan. They call for an increase in sustainable, water-related practices and solutions that address water-demand issues, such as reducing consumption of the limited water resources in Jordan. That is, they call for sustainable demand management, which shifts the emphasis from sustainable water-augmentation towards sustainable water-distribution. This provides an opportunity for the national government to ensure end users' socio-economic and environmental wellbeing, whilst enabling extractive organisations to meet their stakeholders' expectations.

From this perspective, this study has identified a number of sustainable, water-related practices that address the expectations of extractive organisations and their stakeholders in the mining industry (see Appendix VIII for the sustainable water-related practices derived from extractive organisations and their relevant stakeholders in Jordan). However, several studies have focused on the extractive organisations' (un)sustainable water-related practices and their detrimental impact on social wellbeing, environmental health, and the economic future of humanity (Gunson et al., 2012, 2010; Kemp et al., 2010; Liphadzi and Vermaak, 2015). Such studies

have focused on mitigating the negative rather than enhancing the positive (Gunson et al., 2012; Laurence, 2011; Tarawneh, 2016; Tost et al., 2018). However, extractive organisations have the potential to make positive contributions to water sustainability (Edmans, 2020).
To fill this gap, this study identified sustainable water-related practices derived from extractive organisations and their stakeholders in the mining industry – water-related practices which, moreover, enhance the organisations' positive impact by mitigating their negative impact on the cleanness and sanitation of water resources. These practices directly support the attainment of SDG 6 targets, namely 6.3, 6.4, 6.5, and 6.6 (see section 1.3.4 for further details).

With respect to water management, Gunson et al. (2012) identified three categories of water-related mining-industry practices, namely reducing, reusing, and recycling. In line with Gunson et al. (2012), this study assigned the sustainable water-related practices to these three categories (see Appendix VIII for sustainable water-related practices derived from extractive organisations and their relevant stakeholders in Jordan). However, these sustainable water-related practices are exclusively implemented at the extractive and mining sites, due to the large-scale consumption, contamination, and loss of water in these areas.

Furthermore, this study has argued that the organisations' implementation of sustainable water-related practices depends on whether the water resource is an output or input (Gunson et al., 2012; Northey et al., 2016). For instance, potash refinement requires the use of a dry process to convert fine particles into handled granular material for customers. Therefore, operations degrading water contemplate non-compliance with regulations, which renders organisations liable for remediation costs and penalties (Gunson et al., 2010). As a result, the internal stakeholders from EO-A proposed sustainable water-related practices that consider the 'outflow' of water. In contrast, phosphate refinement (EO-B) requires the use of a wet process to separate tailing from phosphate. Therefore, the organisation considered the cost associated with the treatment of wastewater (Gunson et al., 2012), and its internal stakeholders described sustainable water-related practices that consider the 'inflow' of water.

With regard to external stakeholders, the analysis revealed sustainable, water-related practices and solutions that suit the geographic attributes of the area under study, based on the reflections of the local stakeholders (e.g., the local authorities and local-community members, including farmers, townsmen and women, and *bedu*). Additionally, some stakeholders – such as the national government, international organisations, NGOs, academics, and journalists –

described sustainable water-related practices and solutions that reflected their understanding, knowledge, and expertise.

In this way, this study has identified a number of sustainable water-related practices derived from extractive organisations and their stakeholders in the mining industry. It has highlighted water-related practices that create shared value and avoid the need for trade-offs between extractive organisations and their stakeholders (Gusmão Caiado et al., 2018; Klein et al., 2019). Their adoption by the organisations would demonstrate accountability, which would legitimise their operations and practices in the eyes of their stakeholders (Deegan, 2019). Furthermore, it would allow them to secure and maintain their SLO (Provasnek, Sentic, and Schmid, 2017) and their access to the water resources required to sustain their operations and practices in the mining industry. Moreover, the findings highlight water-related practices from a non-Western country, thus contributing to the efforts of a developing Arab country towards the fulfilment of SDG 6 (Yakovleva et al., 2017).

8.5 Summary

This chapter analysed the challenges of the extractive organisations and their stakeholders regarding access to clean and sanitary water in Jordan. Thereby, it brought to light the challenges that might be influencing the fulfilment of SDG 6 in Jordan. To achieve this purpose, the study embraced CDA, which revealed the discrepancies between text, discursive, and social practices in the mining industry. The analysis of the text found the national government and extractive organisations emphasise the issue of water scarcity. They explain that water scarcity is amplified by issues in the natural environment and socio-economic and political factors. In this way, they externalise the problem and thereby absolve themselves of responsibility for it.

Furthermore, the study found that the extractive organisations deploy several narratives to construct and legitimise their water-related practices. For example, EO-A disclosed in its written documentation narratives of responsibility, commitment, compliance, transparency, strategy, accountability, and knowledge. EO-A thus portrays itself as a sustainable organisation that goes beyond commitment, compliance, and responsibility. EO-B disclosed three narratives of responsibility, commitment, and strategic, thereby presenting itself as a sustainable organisation that provides goods and services (economic responsibility) and returns to the national and local communities (social and environmental responsibility).

With their discursive practices, the national government and the extractive organisations exercise ideological leadership by deploying the hegemonic water scarcity discourse. They seek to cultivate the ideological consent of less powerful and powerless stakeholders, such as the local authorities and local communities. In this way, they further their social and material interests and legitimise the water-related operations and practices that have both desirable and problematic outcomes. The extractive organisations contribute to the national economy, as well as socio-economic growth and development in rural areas.

The extractive organisations engage in water-related operations and practices that have both desirable and problematic outcomes: these practices, on the one hand, meet less powerful stakeholders' implicit and explicit expectations within the micro-social contract, but, on the other hand, they detrimentally impact the powerless stakeholders, especially the geographically distant, marginalised, and voiceless. In this way, the extractive organisations secure and maintain their SLO and their access to the water resources required to sustain their operations and practices. However, they might also be hindering national efforts towards the achievement of SDG 6.

Chapter Nine: Conclusion

Introduction

The extractive organisations and their stakeholders concurred about the gravity of the water-scarcity issue. However, they differed regarding the challenges associated with accessing clean and sanitary water. This dispute concerned both desirable and problematic outcomes that might support or hinder national efforts towards the attainment of SDG 6.

By combining the discourses of the extractive organisations and their stakeholders (RQ3), this study brought to light the water-related challenges that might be influencing the fulfilment of SDG 6. Unpacking the discourses of the national government and the extractive organisations (RQ1), the analysis revealed that these parties are constructing a culturally intuitive, appealing, and persuasive discourse to advance their social and material interests. This could be especially influential in relation to efforts to achieve SDG 6.4 (water use and scarcity) and SDG 6.5 (water resource management).

Unpacking the stakeholders' discourse (RQ2), the analysis found that stakeholders ideologically consent to this culturally intuitive, appealing, and persuasive discourse – namely, the hegemonic discourse. Stakeholders legitimise those water-related operations and practices that have both desirable and problematic outcomes. As shown in the findings, this appears to particularly impede the fulfilment of SDG 6.3 (water quality and wastewater) and SDG 6.6 (ecosystem).

This chapter will tackle the overarching research question and sub-questions cited in Chapter One, the empirical results and findings (Chapters Five, Six, and Seven), and the adapted theoretical lenses explained in Chapter Three ('Theoretical Framework'). It will then highlight the limitations of this study and new horizons for future research and then identify the contributions of this work.

9.1 Reviewing the Research Questions

This section responds first to the overarching research question, which was designed to identify the challenges of accessing clean and sanitary water and their influence on efforts to fulfil SDG 6 in Jordan.

What are the challenges of accessing clean and sanitary water in Jordan?

To answer this question, the study investigated the perceptions of the extractive organisations and their salient and less salient stakeholders regarding cleaner water and sanitation. As elaborated previously, the hegemonic discourse submerges the subaltern's voices, narratives, and discourses. However, this study has revealed the influence of these perceptions, narratives, and discourses on efforts to meet the SDG 6 targets in Jordan.

1. *What might be the challenges for the national government and extractive organisations regarding access to clean and sanitary water in Jordan?*
2. *What might be the challenges for relevant stakeholders regarding access to clean and sanitary water in Jordan?*
3. *Are the SDG 6 targets being achieved in Jordan? Why or why not?*

9.2 Empirical Results and Findings

To answer the overarching question, the study employed Fairclough's CDA approach, which enables insights into how texts influence discursive and social practices (Fairclough, 1989, 2001). In this way, the study unravelled the knowledge embedded in – and mediated through – the discourse: first, looking at the challenges of accessing clean and sanitary water, as seen from the perspective of the extractive organisations and their stakeholders (RQ 1 & 2), and second, exploring their role in the fulfilment of SDG 6 (RQ3).

To investigate the hegemonic discourse, the study employed an integrated and multifaceted theoretical framework drawing on two theoretical lenses. First, the stakeholder framework of Mitchell et al. (1997) was introduced. The most relevant stakeholders in the organisations were identified, and the researcher investigated the deployment of the hegemonic discourse to elicit the consent of salient and less salient stakeholders to (un)sustainable water-related practices in the mining industry. The Gramsci's concept of cultural hegemony (1971) was integrated to reveal the extractive organisations' exercise of ideological leadership to advance their interests.

Jointly, these works constructed a theoretical framework that integrated multiple voices at the micro, meso, and macro levels.

9.2.1 Sub-Research Question 1: Challenges of the National Government and Extractive Organisations

The first aim of the study was to unpack the discourse of the national government and extractive organisations. After the analysis of water use and scarcity and water-resources management, two challenges emerged. First, the national government and extractive organisations consistently highlighted the scarcity of water resources in Jordan (see the data provided in section 5.1). The analysis found that, discursively, certain sub-narratives were more prominent than others. According to both the national government and extractive organisations, the primary reason for water scarcity was the natural topography, followed by other limitations on the provision of water resources (such as low precipitation, high evaporation rates, and climate change fluctuations). A second reason given for water scarcity was the social, economic, and political conditions – in particular, population growth due to an increase in refugees and transboundary water agreements, which participants perceived as unfavourable and unfair for the country. Furthermore, the national government highlighted the inefficient use of water resources in relation to economic returns in the agricultural industry. Whilst topographic and environmental conditions are hardly controllable by the government or extractive organisations, the analysis revealed a tendency for these participants to emphasise external factors, rather than sustainable water-distribution solutions focused on reducing demand. In this way, they sought to absolve themselves of responsibility for the water scarcity, thereby potentially hindering efforts to fulfil SDG 6.4 (water use and scarcity).

This links to the second challenge, concerning the mismanagement of water. The national government highlighted lack of financial sustainability as hindering the MWI from resolving and mitigating the water issues. On their side, the extractive organisations recognised that water issues pose a legitimacy threat in a water-stressed country. Therefore, they emphasised desirable but problematic water-related practices that are deemed legitimate in the eyes of the national government, such as the disposal of mine wastewater in valleys. That is, the extractive organisations engaged in water-related practices that, on the one hand, meet stakeholders' implicit and explicit expectations within the micro-social contract, whilst, on the other hand, hindering the fulfilment of SDG 6.5 (on water-resource management).

9.2.2 Sub-Research Question 2: Relevant Stakeholders' Challenges

A second aim of the study was to unravel the stakeholders' discourse. Three challenges were identified: wastewater and water quality, stakeholder participation, and international cooperation.

Wastewater and water quality were predominantly brought up by the less salient stakeholders. When discussing issues at the national level, the less powerful stakeholders – such as the international organisations, the NGOs, and the newspaper reporters – highlighted that the national government's water mismanagement might be causing the recurring wastewater issues. The powerless stakeholders – such as the academic researchers and the local authorities and the local communities – highlighted the extractive organisations' mismanagement of water resources, suggesting that this has led to a reduction in the cleanliness and sanitation of their water resources at the local level.

According to the powerless stakeholders, the national government's engagement with the extractive organisations might be causing water issues at the local-community level. However, the organisations **are** providing socio-economic benefits that outweigh the environmental costs at the national level; and as a result, the government perceives the extractive organisations favourably and disregards their impact on the limited water resources at the local level. Examples of this include the withdrawal of fresh water by EO-A and the disposal of mine wastewater in valleys by EO-B. Stakeholders residing near EO-A reported that ambient water was available due to a collaboration between the national government and the extractive organisation in the construction of water-harvesting dams, but they expressed dissatisfaction that those water resources were shared with the organisation. They also reported suffering a lack of good-quality ambient water. However, stakeholders residing near EO-B reported a lack of good-quality ambient water due to the extractive organisation's (desirable and problematic, expected and unexpected) water-related practices. Collectively, these findings suggest that the national government's engagement with the extractive organisations might be hindering the efforts to fulfil SDG 6.3 (water quality and wastewater).

With regard to the second challenge, participant stakeholders from the local authorities and local communities highlighted the lack of stakeholder engagement within the mining industry. That is to say, the organisations lack mechanisms and practices that facilitate inclusive and meaningful engagement with stakeholders. As a result, the less salient stakeholders perceive

the extractive organisations unfavourably, which is creating challenges to the legitimacy of their operations and practices. However, it is difficult to assess whether or when these challenges could actually become concrete threats to the operations of the organisations.

Finally, the third challenge concerns international cooperation. The national government embraces a standalone approach to water sustainability, and various government ministries are individually in charge of specific SDGs, operating in silos. Moreover, as was mentioned in Chapter Eight, the GC – an institution for engaging with the private sector for the promotion and adoption of SDGs – is inactive in Jordan. To date, the national government has not taken a proactive approach to overcoming the lack of cooperation between the international organisations, the NGOs, and the private sector, making it difficult to operationalise the SDGs. This, in turn, might be contributing to the mismanagement of water resources, as well as the lack of interlinkage between the SDGs in Jordan. Collectively, these challenges appear to be hindering the fulfilment of SDG 6.6 (ecosystem).

9.2.3 Sub-Research Question 3: SDG 6 Targets

The third aim of the study was to investigate the impact of the challenges of the extractive organisations and their stakeholders on the fulfilment of the SDG 6 targets, specifically 6.3, 6.4, 6.5, and 6.6. Overall, the study found that the discourses of the extractive organisations and their stakeholders effectively collaborate to maintain (un)sustainable water practices, by concealing, downplaying, or normalising them.

Amongst the specific SDG 6 targets, the achievement of SDG 6.6 (ecosystem) seems to be particularly important for realising the others. At the national level, the international cooperation between the national government, the international organisations, the NGOs, and the private sector might be the key to achieving better practices concerning water use and scarcity (SDG 6.4), water quality and wastewater (SDG 6.3), and water-resource management (SDG 6.5). Moreover, these efforts need to be supported by increased stakeholder participation at the local level. Chapters Five, Six, and Seven explored these discourses and practices in detail.

This research shares the position of Reed (2008) on the possible positive outcomes that stakeholder engagement could have for the process of learning. For instance, financial challenges are often mentioned by the national government and extractive organisations as impeding better resource-management. Meanwhile, only expensive and technologically

intensive solutions are considered by these stakeholders for resolving the water issues, whilst integrating local scientific knowledge into certain aspects of the mining operations could mitigate the negative impact on local water resources. Another potentially beneficial example provided by the research participants concerned cooperation and participation. In relation to water use and scarcity (SDG 6.4), wastewater and water quality (SDG 6.3), and resource-management (SDG 6.5), the less salient stakeholders proposed the construction of sand dams, the filtration of wastewater by slurry pipeline, and the re-purposing of water for the agricultural industry (see section 8.4 for further details).

To answer the third sub-research question, the study drew on two theoretical lenses, which together comprised an integrated and multifaceted theoretical framework reflecting the complexity of water issues. First, the Mitchell et al. (1997) stakeholder framework investigated the deployment of the hegemonic discourse to elicit the consent of salient and less salient stakeholders to (un)sustainable water-related practices in the mining industry. Stakeholder theory enabled the study to capture the discourse of the extractive organisations and their stakeholders, covering their perceptions and understanding and the challenges regarding cleaner water and sanitation in Jordan (RQ1 & RQ2). Drawing on stakeholder theory enabled the study to distinguish between the stakeholders' claims – namely those of the powerful, less powerful, and powerless – and focus on the individual and society claims, as seen through the eyes of local-community members, such as farmers, townsmen and women, and *bedu*. This also allowed the study to explore the trade-offs between the micro-social contracts required to obtain an SLO, where, on the one hand, stakeholders such as farmers legitimised their water-related practices, whilst, on the other hand, stakeholders such as townsmen and women.

The second lens, the Gramsci's (1971) notion of cultural hegemony, illuminated the national government and extractive organisations' exercise of ideological leadership to advance their interests, thereby casting light on stakeholders' ideological consent to (un)sustainable water-related practices in the mining industry. The study explored the hegemonic discourse deployed to dominate with consent, as well as the oppositional discourses that shake the foundation of the hegemonic discourse. Jointly, these lenses provided a theoretical framework that integrated multiple voices at the micro, meso, and macro levels.

As shown in the findings in Chapter Eight, the national government and extractive organisations have established an alliance to further their social and material interests and are thus constructing and fixing a culturally intuitive, appealing, and persuasive discourse, namely

the hegemonic water-scarcity discourse. In Jordan, the national government and extractive organisations exercise ideological leadership by emphasising natural topography as the primary reason for water scarcity, with the natural environment and various socio-economic and political conditions amplifying the problem. In this way, they externalise the problem and absolve themselves of their responsibility. By constraining their narration of water scarcity to natural phenomena, the national government and extractive organisations seek to cement the hegemonic discourse. By doing so, they exercise ideological leadership, which cultivates the consent of the less powerful and powerless stakeholders to unsustainable water-related practices that run counter to their own best interests.

By deploying the hegemonic discourse, the national government hides its own water mismanagement, which might be causing water-related challenges at the national level (SDG 6.5), whilst also hiding the (in)efficient use of water resources by the mining industry (SDG 6.4). As a result, the national government is able to retain the socio-economic benefits provided at the local and national levels.

Similarly, the extractive organisations may be deploying the hegemonic discourse to hide their own water mismanagement, which might be causing water-related challenges at the local level (SDG 6.3), as well as legitimising its water-related operations and practices that are both desirable and problematic. In this way, they secure and maintain their SLO and their access to limited water resources.

Overall, the national government and extractive organisations cultivate the ideological consent of less powerful and powerless stakeholders to a culturally intuitive, appealing, and persuasive discourse that runs counters to their best interests. As a result, the stakeholders experience the detrimental impacts on their resources, with a decline in the cleanliness and sanitation of their water. Unfortunately, this social wrong is accepted by the less powerful and powerless stakeholders due to the socio-economic benefits provided by the organisations, as these are thought to outweigh the cost of the externalities in their local communities. For these reasons, the study concludes that the hegemonic discourse is impeding the fulfilment of SDG 6.

9.3 Research Limitations and Future Direction

This study has certain empirical, methodological, and theoretical limitations. As with those of other case studies, the findings cannot be generalised because hegemonic and dominant

discourses differ across social-cultural, economic, environmental contexts. For example, issues of water-resource scarcity, shortage, poverty, and stress could vary spatially and temporally.

9.3.1 Empirical

Although all 17 SDGs are equally important, this study focused on SDG 6 (particularly targets 6.3, 6.4, 6.5, and 6.6) because extractive organisations use water resources to sustain their operations and practices. This can lead to social tension, particularly in water-stressed countries.

However, future studies could investigate the impact of extractive organisations on other SDG 6 targets, such as 6.1 (drinking water) and 6.2 (sanitation and hygiene). In this way, studies and researchers could identify more sustainable water-related practices to support efforts towards the attainment of SDG 6 in Jordan.

Future studies could also investigate the extractive organisations' impact on other more directly related SDGs, which either enhance their positive impact or mitigate their negative impact across the mining industry. Examples include SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth), SDG 9 (industrial, innovation, and infrastructure), and SDG 15 (life on land). In this way, future studies could reveal sustainable operations and practices that could prevent, mitigate, or resolve socio-economic and environmental issues associated with the mining industry. Additionally, such studies could support national efforts towards the attainment of Agenda 2030.

9.3.2 Methodological

Regarding methodological constraints, the study used written documentary data (secondary method), focus groups and semi-structured interviews (primary method), as well as observations to investigate the understandings and perceptions of extractive organisations and their stakeholders regarding cleaner water and sanitation.

The first limitation of this is that the study focused solely on analysing and discussing formal written documentation on the accounts of the national government and extractive organisations in Jordan. In this way, the study was able to reveal systematic discursive patterns, such as the hegemonic discourse. The second limitation is that this study involved only a small sample of participants. As a result, it overlooked some powerless and voiceless subalterns – such as immigrants and refugees in Jordan – who are also impacted by the hegemonic discourse.

Furthermore, the study overlooked some powerful stakeholders who might be influencing the deployment of the hegemonic discourse to further their own material and social interests. These include members of parliament and foreign diplomats.

Future researchers could expand the investigation of how the national government and extractive organisations define, understand, and perceive the sustainability of Agenda 2030 SDGs – going beyond their formal written documentation to include newspaper articles (public/private) and social media content.

Future studies could also expand the investigation into stakeholders' understanding of the extractive organisations' impact on the cleanliness and sanitation of their water resources by using other formal written documentation, such as newspapers (public/private), NGO reports, and international reports.

Moreover, future studies could expand the sample of participants to include powerful and salient as well as less powerful and less salient stakeholders, such as immigrants and refugees and members of parliament (representative and notables). This would incorporate a wider range of stakeholder voices to explore the legitimising of the hegemonic discourse on water scarcity in Jordan.

9.3.3 Theoretical

With respect to theoretical constraints, the study embraced two theoretical lenses that integrated multiple voices at a micro, meso, and macro levels. The Mitchell et al. (1997) framework focused on individual and social discourse, such as local-community discourse, as well as women's narratives. In addition, Gramsci (1971) is concerned with the taken-for-granted hegemonic discourse – such as the national and international discourse – that influences the actions and practices of society and individuals. Thus, this study contributes to the discussion on how discourse and narratives shape social practices, such as sustainable water-related practices, whilst neglecting the quantifiable on-the-ground impact of water-related operations and practice, particularly concerning water sustainability.

Future researchers could embrace 'lifecycle assessment' (LCA) or scenario-based research to quantify the impact of social practices such as (un)sustainable water-related practices in the mining industry. Furthermore, they could attempt to quantify whether the water-related practices proposed by stakeholders would improve social wellbeing, environmental health, and economic prosperity in the present and future.

Despite its limitations, this study provides a deeper understanding of the challenges hindering the provision of clean water and sanitation from the perspective of the extractive organisations and their multiple stakeholders dealing with water scarcity. It sheds light on the challenges related to SDG 6, especially those in a developing and water-scarce Arab country. With its investigation of the Royal Hashemite Kingdom of Jordan, this study shows the operation of hegemonic power in a monarchical context, revealing how this power can be held and exercised by corporate organisations to advance their own interests – for example, by hiding their water mismanagement.

9.4 Research Contributions

9.4.1 Contribution to Empirical Literature

To make an empirical contribution to the literature, this study investigated water sustainability in relation to SDG 6 in the mining industry. Several empirical studies have broadly investigated sustainable performance in the mining industry (Essah and Andrews, 2016; Prno and Scott Slocombe, 2012; Tost et al., 2018; Zhang et al., 2015), but few have focused solely on environmental performance or specifically targeted water-related practices (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016).

This study investigated the impact of extractive organisations' activities on stakeholders, particularly in relation to the cleanliness and sanitation of their water resources. In so doing, the study engaged with those water-related practices that are causing externalities such as water consumption, contamination, and loss.

Consequently, this study provides insights into extractive organisations' unsustainable water-related practices, as well as their sustainable practices intended to mitigate environmental water-related issues. Examples of these mitigating measures include the building of water-harvesting dams to reduce dependency on underground water, the reuse of wastewater for cooling equipment, and the recycling of wastewater for use in extractive and processing practices in the mining industry.

To date, studies have investigated developed or developing countries that possess extensive mineral wealth – such as India, China, and Australia – and they have neglected smaller countries (Ayelazuno, 2014; Rodrigues and Mendes, 2018). Small emerging economies such as Jordan may be more dependent on extractive resources at the economic level, especially as a source

of foreign currency. Therefore, this study explored the potential conflicts between socio-economic and environmental development and between present and future needs. To do this, the study explored extractive organisations' contributions to and sustainment of socio-economic development of the local communities in Jordan. It also observed that they are detrimentally impacting resources through the consumption, contamination, and loss of water (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). If extractive organisations continue to engage in unsustainable water practices, they will jeopardise their SLO and their access to the limited water resources. Consequently, small and emerging economies might experience higher barriers to the adoption of 'new' sustainable water-related practices.

Few studies have investigated an institutional context with a monarchical structure that, as in the Royal Hashemite Kingdom of Jordan, shapes, sanctions, blocks, and resists water policies and regulations (Al Rawashdeh et al., 2016; Hussein, 2018). Therefore, this study provides a unique contribution, demonstrating how hegemonic 'power' might be held and exercised by corporate organisations to advance their 'interests' in a monarchical context such as Jordan.

Likewise, few scholars have investigated the impact of extractive organisations on water provisions, particularly those operating in water-stressed countries (Mancini and Sala, 2018; Rodrigues and Mendes, 2018; Tost et al., 2018). However, this study provides a deeper understanding of the challenges around the provision of cleaner water and sanitation from the perspective of multiple stakeholders dealing with water scarcity, shortage, stress, and starvation**.** This study has shed light on the challenges to the provision of sustainable water; and by providing an understanding of similar challenges faced around the world in water-scarce circumstances, this should contribute to enhancing understanding of the challenges related to SDG 6**.**

9.4.2 Contribution to Policy and Practice

Consideration is now given to the policy and practical implications of the findings; and it is argued that discourse plays a central role in shaping the national water policies that might be sanctioning and legitimising 'certain' water-related practices in Jordan. With regards to policy, the multi-stakeholder narratives and discourse highlighted in this study have revealed that water insufficiency might not be the sole cause of water scarcity. Rather, water mismanagement by the mineral-mining industry might be a contributor. This study has revealed that both water insufficiency and water mismanagement might be driving the water scarcity in Jordan. Thus,

the focus of the national water policies should be shifted from water insufficiency (supply solutions) to water mismanagement (demand solutions), particularly the water-demand management policy in the 'Jordan 2025: National Water Strategy' document.

With regards to practice, this study has shown that multi-stakeholder voices and perspectives can highlight sustainable water-related practices that support national efforts towards the attainment of SDG 6. Few studies have investigated the role of extractive organisations in achieving SDGs in general or SDG 6 in particular, as seen from a stakeholder perspective (Mancini and Sala, 2018). By taking this approach, this study has revealed the types of sustainable water-related practices that could 'mitigate' the extractive organisations' externalities with regard to limited water resources – for instance, building water-harvesting dams to reduce dependency on underground water, reusing wastewater for cooling equipment, and recycling wastewater in extractive and processing practices in the mining industry. These approaches could be implemented to mitigate the challenges related to SDG 6 and secure alignment with sustainability indicators such as 6.3, 6.4, 6.5, and 6.6. Furthermore, the findings of this study could support national efforts towards the attainment of SDG 6 in Jordan.

9.5 Will Water see a Tomorrow in Jordan?

If the national government and extractive organisations continue to exercise ideological leadership by deploying the hegemonic discourse, they will continue to face two dominant challenges: the first relating to water use and scarcity and the second to water mismanagement. As a result, they will continue to hinder the fulfilment of SDG 6.4 (water use and scarcity) and SDG 6.5 (water-resource management).

Furthermore, if the less powerful and powerless stakeholders continue to ideologically consent to the culturally intuitive, appealing, and persuasive discourse, they will continue to face three dominant challenges relating to water quality and wastewater, a lack of stakeholder participation, and a lack of international cooperation. This, in turn, will hinder the fulfilment of SDG 6.3 (water quality and wastewater) and SDG 6.6 (ecosystem).

In light of these issues, the national government and extractive organisations will struggle to sustain socio-economic and environmental development at the national level, and the extractive organisations will find themselves unable to sustain their extractive and production activity. Furthermore, this will pose a challenge to socio-economic growth and development at the local

level. In short, by failing to adequately address these water-related challenges, the national government and extractive organisations are threatening progress towards SD and SDG 6.

However, the researcher can envision a future for water. This study found that the fulfilment of SDG 6.6 (ecosystem) – which includes SDG 6.a.1 (international cooperation) and SDG 6.b.1 (stakeholder participation) – is vital for realising the other SDG 6 targets in Jordan. At the national level, the study found that international cooperation between the national government, international organisations, NGOs, and the private sector might be necessary to achieve better sustainable water-related practices concerning water use and scarcity (SDG 6.4), water quality and wastewater (SDG 6.3), and water-resource management (SDG 6.5). Furthermore, these efforts must be supported by increased stakeholder participation, which might bring to light practices valuable for meeting these SDG 6 targets at the industrial and local levels. In this way, stakeholders can secure a sustainable future for water resources in Jordan.

Bibliography

Adam, C.A. and McNicholas, P., 2007. Making a difference: Sustainability reporting, accountability and organizational change. Accounting, Auditing & Accountability Journal, 20(3), pp.382-402.

Adiansyah, J.S., Rosano, M., Vink, S. and Keir, G., 2015. A framework for a sustainable approach to mine tailings management: disposal strategies. Journal of Cleaner Production, 108, pp.1050-1062.

Agle, B.R., Mitchell, R.K. and Sonnenfeld, J.A., 1999. Who matters to CEOs? An investigation of stakeholder attributes and salience, corporate performance, and CEO values. Academy of Management Journal, 42(5), pp.507-525.

Aivazidou, E., Tsolakis, N., Iakovou, E. and Vlachos, D., 2016. The emerging role of water footprint in supply chain management: A critical literature synthesis and a hierarchical decision-making framework. Journal of Cleaner Production, 137, pp.1018-1037.

Al Rawashdeh, R. and Maxwell, P., 2014. Analysing the world potash industry. Resources Policy, 41, pp.143-151.

Al Rawashdeh, R., 2015. The Competitiveness of Jordan Phosphate Mines Company (JPMC) Using Porter Five Forces. International Journal Of Economics And Finance, 5(1), pp.191-200.

Al Rawashdeh, R., Campbell, G. and Titi, A., 2016. The socio-economic impacts of mining on local communities: The case of Jordan. The Extractive Industries and Society, 3(2), pp.494-507.

Alawattage, C. and Wickramasinghe, D., 2009. Weapons of the weak: subalterns' emancipatory accounting in Ceylon Tea. Accounting, Auditing & Accountability Journal, 22(3), pp.379-404.

Alawneh, R., Ghazali, F.E.M., Ali, H. and Asif, M., 2018. Assessing the contribution of water and energy efficiency in green buildings to achieve United Nations Sustainable Development Goals in Jordan. Building and Environment, 146, pp.119-132.

Al-Hwaiti, M.S., Brumsack, H.J. and Schnetger, B., 2015. Fraction distribution and risk assessment of heavy metals in waste clay sediment discharged through the phosphate beneficiation process in Jordan. Environmental Monitoring and Assessment, 187(7), pp.1-18.

Al-Hwaiti, M.S., Brumsack, H.J. and Schnetger, B., 2016. Suitability assessment of phosphate mine wastewater for agricultural irrigation: an example from Eshidiya Mines, South Jordan. Environmental Earth Sciences, 75(3), pp.276.

Allen, C., Metternicht, G. and Wiedmann, T., 2016. National pathways to the Sustainable Development Goals (SDGs): A comparative review of scenario modelling tools. Environmental Science & Policy, 66, pp.199-207.

Arts, K., 2017. Inclusive sustainable development: a human rights perspective. Current Opinion in Environmental Sustainability, 24, pp.58-62.

Ayelazuno, J., 2014. Oil wealth and the well-being of the subaltern classes in Sub-Saharan Africa: A critical analysis of the resource curse in Ghana. Resources Policy, 40, pp.66-73.

Azapagic, A., 2004. Developing a framework for sustainable development indicators for the mining and minerals industry. Journal of cleaner production, 12(6), pp.639-662.

Banerjee, S.B., Maher, R. and Krämer, R., 2021. Resistance is fertile: Toward a political ecology of translocal resistance. Organization, pp.1-24.

Bansaal, P., 2005. Evolving Sustainability: A Longitudinal Study of Corporate Sustainability Development. Strategic Management Journal, 26(23), pp.197-218.

Barker, C., Galasiński, D., 2001. Cultural Studies and Discourse Analysis: A Dialogue on Language and Identity. SAGE Publications.

Barratt, M., Choi, T.Y. and Li, M., 2011. Qualitative case studies in operations management: Trends, research outcomes, and future research implications. Journal of Operations Management, 29(4), pp.329-342.

Bebbington, J. and Unerman, J., 2018. Achieving the United Nations Sustainable Development Goals: An enabling role for accounting research. Accounting, Auditing & Accountability Journal, 31(1), pp.2-24.

Bebbington, J. and Unerman, J., 2020. Advancing research into accounting and the UN Sustainable Development Goals. Accounting, Auditing & Accountability Journal, 33(7), pp.1657-1670.

Belal, A.R. and Cooper, S., 2011. Absence of corporate social reporting in Bangladesh: A research note. Critical Perspectives on Accounting, 22(7), pp.654-667.

Belal, A.R. and Momin, M., 2009. Corporate social reporting (CSR) in emerging economies: A review and future direction. Accounting in Emerging Economies, pp.119-143.

Belal, A.R. and Owen, D.L., 2007. The views of corporate managers on the current state of, and future prospects for, social reporting in Bangladesh: An engagement-based study. Accounting, Auditing & Accountability Journal, 20(3), pp.472-494.

Belal, A.R., Cooper, S.M., Roberts, R.W., 2013. Vulnerable and exploitable: The need for organisational accountability and transparency in emerging and less developed economies. In Accounting Forum, 37(2), pp. 81-91.

Berger, P.L., Luckmann, T., 1966. The social construction of reality: A treatise in the sociology of knowledge. Allen Lane.

Berman, S.L., Johnson-Cramer, M.E., 2019. Stakeholder Theory: Seeing the Field Through the Forest. Business & Society, 58(7), pp.1358-1375.

Beske, F., Haustein, E. and Lorson, P.C., 2020. Materiality analysis in sustainability and integrated reports. Sustainability Accounting, Management and Policy Journal, 11(1), pp. 162-186.

Bhatia, V.K., 2014. Creative exploitation of social-pragmatic space in professional discourse. Discourse and Creativity, pp. 75-91.

Bini, L., Bellucci, M. and Giunta, F., 2018. Integrating sustainability in business model disclosure: Evidence from the UK mining industry. Journal of cleaner production, 171, pp.1161-1170.

Blindheim, B.T. and Langhelle, O., 2010. A reinterpretation of the principles of CSR: A pragmatic approach. Corporate Social Responsibility and Environmental Management, 17(2), pp.107-117.

Blommaert, J. and Bulcaen, C., 2000. Critical discourse analysis. Annual Review of Anthropology, 29(1), pp.447-466.

Böhm, S. and Brei, V., 2008. Marketing the hegemony of development: of pulp fictions and green deserts. Marketing Theory, 8(4), pp.339-366.

Boiral, O. and Henri, J.F., 2017. Is sustainability performance comparable? A study of GRI reports of mining organizations. Business & Society, 56(2), pp.283-317.

Boiral, O. and Heras-Saizarbitoria, I., 2017. Managing biodiversity through stakeholder involvement: why, who, and for what initiatives?. Journal of Business Ethics, 140(3), pp.403-421.

Boiral, O., Heras-Saizarbitoria, I. and Brotherton, M.C., 2019. Corporate sustainability and indigenous community engagement in the extractive industry. Journal of Cleaner Production, 235, pp.701-711.

Bouzon, M., Govindan, K. and Rodriguez, C.M.T., 2018. Evaluating barriers for reverse logistics implementation under a multiple stakeholders' perspective analysis using grey decision-making approach. Resources, Conservation and Recycling, 128, pp.315-335.

Brei, V. and Böhm, S., 2011. Corporate social responsibility as cultural meaning management: a critique of the marketing of 'ethical'bottled water. Business Ethics: A European Review, 20(3), pp.233-252.

Brewer, J. and Hunter, A., 1989. Multimethod research: A synthesis of styles. Sage Publications.

Broman, G.I. and Robèrt, K.H., 2017. A framework for strategic sustainable development. Journal of Cleaner Production, 140, pp.17-31.

Bruntland, G.H., 1987. Report of the World Commission on Environment and Development: Our Common Future, Bruntland Report. New York: UN Documents.

Bryman, A., Becker, S. and Sempik, J., 2008. Quality criteria for quantitative, qualitative and mixed methods research: A view from social policy. International journal of social research methodology, 11(4), pp.261-276.

Bryman, A., Bell, E., 2003. Business Research Methods, Oxford University Press.

Burrell, G. and Morgan, G., 1979. Assumptions about the Nature of Social Science. Sociological Paradigms and Organisational Analysis, 248, pp.1-9.

Burritt, R.L. and Christ, K.L., 2018. Water risk in mining: Analysis of the Samarco dam failure. Journal of Cleaner Production, 178, pp.196-205.

Carels, C., Maroun, W. and Padia, N., 2013. Integrated reporting in the South African mining sector. Corporate Ownership and Control, 11(1), pp.991-1005.

Carpenter, G. and White, P., 2004. Sustainable Development: Finding the Real Business Case. Corporate Environmental Strategy: International Journal for Sustainable Business, 11(2), pp.2-51.

Central Bank of Jordan, 2018. Annual Report [Online]. Jordan: Central Bank of Jordan [Viewed 15th of May 2019]. Available at: https://www.cbj.gov.jo/EchoBusV3.0/SystemAssets/c1e184ab-ad4e-4ed8-a24e-0fb908dd46e8.pdf

Charnock, R. and Hoskin, K., 2020. SDG 13 and the entwining of climate and sustainability metagovernance: an archaeological–genealogical analysis of goals-based climate governance. Accounting, Auditing & Accountability Journal, 33(7), pp.1731-1759.

Christ, K.L., Rao, K.K. and Burritt, R.L., 2019. Accounting for modern slavery: an analysis of Australian listed company disclosures. Accounting, Auditing & Accountability Journal, 32(3), pp.836-865.

Clarkson, M., 1995. A Stakeholder Framework for Analysing and Evaluating Corporate Social Performance. Academy of Management Review. 20(1), 92–117.

Clifton, D. and Amran, A., 2011. The stakeholder approach: A sustainability perspective. Journal of Business Ethics, 98(1), pp.121-136.

Colvin, R.M., Witt, G.B. and Lacey, J., 2016. Approaches to identifying stakeholders in environmental management: Insights from practitioners to go beyond the 'usual suspects'. Land use policy, 52, pp.266-276.

Corrigan, C.C., 2018. Corporate social responsibility and local context: The case of mining in Southern Africa. Resources Policy, 55(C), pp.233-243.

Creswell, J.W., 2003. Research Design: Qualitative, Quantitative, and Mixed Methods approaches, Sage Publications.

Crotty, M., 1998. Introduction: The Research Process. The Foundations of Social Research: Meaning and Perspective in The Research Process, pp.1-17.

Curry, L.A., Nembhard, I.M. and Bradley, E.H., 2009. Qualitative and Mixed Methods Provide Unique Contributions to Outcomes Research. Circulation, 119(10), pp.1442-1452.

Dahl, R.A., 1957. The Concept of Power. Behavioural Science, 2(3), pp.201-215.

Daub, C.H., 2007. Assessing the quality of sustainability reporting: an alternative methodological approach. Journal of Cleaner Production, 15(1), pp.75-85.

Davies, D. and Dodd, J., 2002. Qualitative Research and the Question of Rigor. Qualitative Health Research, 12(2), pp.279-289.

Dawkins, C., 2015. Agonistic pluralism and stakeholder engagement. Business Ethics Quarterly, 25(1), pp.1-28.

de Jong, E. and Vijge, M.J., 2021. From Millennium to Sustainable Development Goals: Evolving discourses and their reflection in policy coherence for development. Earth System Governance, 7, p.100087.

de Mesquita, R.F., Xavier, A., Klein, B. and Matos, F.R.N., 2017. Mining and the Sustainable Development Goals: A Systematic Literature Review. Geo-Resources Environment and Engineering (GREE), 2, pp.29-34.

de Vaus, D., 2001. Research Design in Social Research, Sage Publications.

de Villiers, C., Low, M. and Samkin, G., 2014. The institutionalisation of mining company sustainability disclosures. Journal of Cleaner Production, 84, pp.51-58.

Deegan, C., 2002. Introduction: The Legitimising Effect of Social and Environmental Disclosures - A Theoretical Foundation. Accounting, Auditing & Accountability Journal, 15(3), pp.282-311.

Deegan, C., Rankin, M. and Tobin, J., 2002. An examination of the corporate social and environmental disclosures of BHP from 1983-1997: A test of legitimacy theory. Accounting, Auditing & Accountability Journal, 15(3), pp.312-343.

Deegan, C.M., 2019. Legitimacy theory: Despite its enduring popularity and contribution, time is right for a necessary makeover. Accounting, Auditing & Accountability Journal, 32(8), pp.2307-2329.

Delai, I. and Takahashi, S., 2011. Sustainability Measurement System: A Reference Model Proposal. Social Responsibility Journal, 7(3), pp.438-471.

Denzin, N. K., 1978. The Research Act: A Theoretical Introduction to Sociological Methods. New York: McGraw-Hill.

Department of Statistic, 2017. Employment in Establishment [Online]. Jordan: Department of Statistic. [Viewed 25th of September 2019]. Available at: http://dosweb.dos.gov.jo/labourforce/employment-in-establishment/.

Derry, R., 2012. Reclaiming marginalized stakeholders. Journal of Business Ethics, 111(2), pp.253-264.

Dogaru, D., Zobrist, J., Balteanu, D., Popescu, C., Sima, M., Amini, M. and Yang, H., 2009. Community perception of water quality in a mining-affected area: A case study for the Certej catchment in the Apuseni mountains in Romania. Environmental management, 43(6), pp.1131-1145.

Donaldson, T. and Preston, L.E., 1995. The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. Academy of Management Review, 20(1), pp.65-91.

Dong, S., Burritt, R., Qian, W., 2014. Salient Stakeholders in Corporate Social Responsibility Reporting by Chinese Mining and Minerals Companies. Journal of Cleaner Production, 84, pp.59-69.

Doody, O. and Doody, C.M., 2015. Conducting a Pilot Study: Case Study of a Novice Researcher. British Journal of Nursing, 24(21), pp.1074-1078.

Driscoll, C. and Starik, M., 2004. The Primordial Stakeholder: Advancing the Conceptual Consideration of Stakeholder Status for the Natural Environment. Journal of Business Ethics, 49(1), pp.55-73.

Dyllick, T. and Muff, K., 2016. Clarifying the Meaning of Sustainable Business: Introducing a Typology from Business-As-Usual to True Business Sustainability. Organization & Environment, 29(2), pp.156-174.

Edmans, A., 2020. Grow the Pie: How Great Companies Deliver Both Purpose and Profit. Cambridge University Press.

Ekers, M. and Loftus, A., 2008. The Power of Water: Developing Dialogues between Foucault and Gramsci. Environment and Planning D: Society and Space, 26(4), pp.698-718.

El-Hasan, T., Abdelhadi, N., Abdelhadi, M., 2017. Optimization of phosphogypsumby-production using orthophosphoricacid as leaching solvent with different temperatures and leaching times. In: Jordan Engineers Association (JEA). The Eighth Jordan International Chemical Engineering Conference (JIChEC), 7th and 9th of November 2017, Amman, Jordan [Online]. Jordan: Jordan Engineers Association (JEA), pp. 1- 17. [Viewed 25th of September 2019]. Available at: http://www.jeaconf.org/UploadedFiles/Document/32f03092-fc28-4eb6-ae8f-e690856fb480.pdf

Elkington, J., 1998. Accounting for the Triple Bottom Line. Measuring Business Excellence.

England, P., 1993. Problems and Prospects for the Implementation of Sustainable Development in Developing Countries: A Critique of the Brundtland Report. Griffith Law Review, 2(2), pp.147-160.

Essah, M. and Andrews, N., 2016. Linking or De-Linking Sustainable Mining Practices and Corporate Social Responsibility? Insights from Ghana. Resources Policy, 50, pp.75-85.

Essex, B., Koop, S.H.A. and Van Leeuwen, C.J., 2020. Proposal for a National Blueprint Framework to Monitor Progress on Water-Related Sustainable Development Goals in Europe. Environmental Management, 65(1), pp.1-18.

Esteves, A.M., 2008. Evaluating Community Investments in The Mining Sector Using Multi-Criteria Decision Analysis to Integrate SIA with Business Planning. Environmental Impact Assessment Review, 28(4-5), pp.338-348.

Ezbakhe, F., Giné-Garriga, R. and Pérez-Foguet, A., 2019. Leaving No One Behind: Evaluating Access to Water, Sanitation and Hygiene for Vulnerable and Marginalized Groups. Science of the Total Environment, 683, pp.537-546.

Fairclough, N., 1989. Language and Power, Pearson Education.

Fairclough, N., 1992. Discourse and Text: Linguistic and Intertextual Analysis within Discourse Analysis. Discourse & Society, 3(2), pp.193-217.

Fairclough, N., 1993. Critical Discourse Analysis and the Marketization of Public Discourse: The Universities. Discourse & Society, 4(2), pp.133-168.

Fairclough, N., 2001. The Dialectics of Discourse. Textus, 14(2), pp.231-242.

Fairclough, N., 2003. Analysing Discourse: Textual Analysis for Social Research. Psychology Press.

Fern, E.F., 1982. The Use of Focus Groups for Idea Generation: The Effects of Group Size, Acquaintanceship, and Moderator on Response Quantity and Quality. Journal of Marketing Research, 19(1), pp.1-13.

Ferns, G. and Amaeshi, K., 2019. Struggles at the Summits: Discourse Coalitions, Field Boundaries, and the Shifting Role of Business in Sustainable Development. Business & Society, 58(8), pp.1533-1571.

Fleming, A., Wise, R.M., Hansen, H. and Sams, L., 2017. The Sustainable Development Goals: A Case Study. Marine Policy, 86, pp.94-103.

Fonseca, A., McAllister, M.L. and Fitzpatrick, P., 2014. Sustainability Reporting Among Mining Corporations: A Constructive Critique of The GRI Approach. Journal of Cleaner Production, 84, pp.70-83.

Foucault, M., 1978. The History of Sexuality: An Introduction (Vol. 1). New York: Pantheon Books.

Foucault, M., 1980. Power/Knowledge: Selected Interviews and Other Writings,1972-1977, New York: Pantheon Books.

Foucault, M., 2000. The Subject and Power, The essential works of Michel Foucault,1954-1984, (Vol. III). New York: Pantheon Books.

Freeman, R.E., 2009. Can Stakeholder Theorists Seize the Moment? Journal of Corporate Citizenship, (36), pp.21-24.

Freeman, R.E., 2010. Managing for Stakeholders: Trade-offs or Value Creation. Journal of Business Ethics, 96(1), pp.7-9.

Freeman, R.E., 2010. Strategic Management: A Stakeholder Approach. Cambridge University Press.

Freeman, R.E., 2017. Five Challenges to Stakeholder Theory: A Report on Research in Progress. In Stakeholder Management. Emerald Publishing Limited.

Freeman, R.E., Harrison, J.S., Wicks, A.C., Parmar, B.L., de Colle, S., 2010. Stakeholder Theory: The State of the Art. Cambridge University Press, Cambridge, New York.

Freeman, R.E., Wicks, A.C. and Parmar, B., 2004. Stakeholder Theory and "The Corporate Objective Revisited". Organization Science, 15(3), pp.364-369.

Freudenreich, B., Lüdeke-Freund, F. and Schaltegger, S., 2020. A Stakeholder Theory Perspective on Business Models: Value Creation for Sustainability. Journal of Business Ethics, 166(1), pp.3-18.

Friedman, M., 1970. The social responsibility of business is to maximise its profits. New York Times Magazine, September 13th, p.33.

Fujimoto, Y., Azmat, F. and Subramaniam, N., 2019. Creating Community-Inclusive Organizations: Managerial Accountability Framework. Business & Society, 58(4), pp.712-748.

Furnaro, A., 2019. Hegemony and Passivity in Mining Regions: Containing Dissent in North-Central Chile. The Extractive Industries and Society, 6(1), pp.215-222.

Fusch, P.I. And Ness, L.R., 2015. Are We There Yet? Data Saturation in Qualitative Research. The Qualitative Report, 20(9), P.1408.

Gabriel, Y., 2015. Reflexivity and Beyond–A Plea for Imagination in Qualitative Research Methodology. Qualitative Research in Organizations and Management: An International Journal, 10(4), pp.332-336.

Galdas, P., 2017. Revisiting Bias in Qualitative Research: Reflections on Its Relationship with Funding and Impact. International Journal of Qualitative Methods, 16, pp.1-2.

Garcia-Sanchez, I.M., Aibar-Guzman, B., Aibar-Guzman, C. and Rodriguez-Ariza, L., 2020. "Sell" recommendations by analysts in response to Business Communication Strategies concerning the Sustainable Development Goals and the SDG Compass. Journal of Cleaner Production, 255, pp.120194.

Gimenez, C., Sierra, V. and Rodon, J., 2012. Sustainable Operations: Their Impact on the Triple Bottom Line. International Journal of Production Economics, 140(1), pp.149-159.

Giné Garriga, R., 2018. Delivering Water and Sanitation Services in the 2030 Agenda for Sustainable Development. In: Universitat Politècnica de Catalunya-BarcelonaTech. International Conference on Sustainable Development Goals: Actors and Implementation, 18-19th September 2017, Barcelona, Spain [Online]. Barcelona: Universitat Politècnica de Catalunya-BarcelonaTech. pp.1-57. [Viewed 10th of December 2019]. Available at: https://upcommons.upc.edu/bitstream/handle/2117/118084/delivering_water.pdf

Global Reporting Initiative, 2014. G4 Sustainability Reporting Guidelines: Reporting Principles and Standard Disclosures. Amsterdam, pp. 1-97.

Golafshani, N., 2003. Understanding Reliability and Validity in Qualitative Research. The Qualitative Report, 8(4), pp.597-607.

Gramsci, A., 1971. Selections from the Prison Notebooks, edited and translated by Quintin Hoare and Geoffrey Nowell Smith. London: Lawrence & Wishart.

Gray, R., 2002. The Social Accounting Project and Accounting Organizations and Society Privileging Engagement, Imaginings, New Accountings and Pragmatism Over Critique?. Accounting, Organizations and Society, 27(7), pp.687-708.

Gray, R., 2010. Is Accounting for Sustainability Accounting for Sustainability… and how would we know? An Exploration of Narratives of Organisations and the Planet. Accounting, organizations and society, 35(1), pp.47-62.

Gray, R., Owen, D., Adams, C., 1996. Accounting & Accountability: Changes and Challenges in Corporate Social and Environmental Reporting. London: Prentice-Hall.

Greenwood, M., 2007. Stakeholder engagement: Beyond the myth of corporate responsibility. Journal of Business ethics, 74(4), pp.315-327.

GRI, UN Global Compact, and WBCSD, © 2015. SDG Compass. [Viewed 16th October 2018]. Available at: https://sdgcompass.org/business-indicators/.

Guba, E.G., Lincoln, Y.S., 1982. Epistemological and Methodological Bases of Naturalistic Inquiry. Educational Communication and Technology: A Journal of Theory, Research, and Development, 30(4), pp.233-52.

Guba, E.G., Lincoln, Y.S., Denzin, N.K., 1997. Handbook of Qualitative Research. Sage Publications.

Gubrium, J., Holstein, J., 2001. Handbook of Interview Research: Context and Method. Sage Publications.

Guha, R., 1997. Colonialism in South Asia: A dominance without hegemony and its historiography. Dominance without Hegemony: History and Power in Colonial India, pp.97-98.

Guillemin, M. and Gillam, L., 2004. Ethics, reflexivity, and "ethically important moments" in research. Qualitative inquiry, 10(2), pp.261-280.

Gunson, A.J., Klein, B., Veiga, M. and Dunbar, S., 2010. Reducing mine water network energy requirements. Journal of Cleaner Production, 18(13), pp.1328-1338.

Gunson, A.J., Klein, B., Veiga, M. and Dunbar, S., 2012. Reducing mine water requirements. Journal of Cleaner Production, 21(1), pp.71-82.

Gusmão Caiado, R.G., Leal Filho, W., Quelhas, O.L.G., de Mattos Nascimento, D.L. and Ávila, L.V., 2018. A literature-based review on potentials and constraints in the implementation of the sustainable development goals. Journal of cleaner production, 198, pp.1276-1288.

Harlin, J. and Kjellén, M., 2015. Water and Development: from MDGs towards SDGs. Water for Development-Charting a Water Wise Path, SIWI Report, 35, pp.8-14.

Harrison, J.S. and Wicks, A.C., 2013. Stakeholder Theory, Value, and Firm Performance. Business Ethics Quarterly, 23(1), pp.97-124.

Herlin, H.K. and Solitander, N., 2017. Corporate Social Responsibility as Relief from Responsibility: NPO Legitimizations for Corporate Partnerships in Contested Terrains. Critical Perspectives on International Business, 13(1), pp.2-22.

Herrmann, B. and Rundshagen, V., 2020. Paradigm shift to implement SDG 2 (end hunger): A humanistic management lens on the education of future leaders. The International Journal of Management Education, 18(1), p.100368.

Higgins, C. and Coffey, B., 2016. Improving how sustainability reports drive change: a critical discourse analysis. Journal of cleaner production, 136, pp.18-29.

Higgins, C., Milne, M.J. and Van Gramberg, B., 2015. The uptake of sustainability reporting in Australia. Journal of Business Ethics, 129(2), pp.445-468.

Horowitz, L., 2006. Section 2: mining and sustainable development. Journal of cleaner production, 3(14), pp.307-308.

Hussein, H., 2016. An Analysis of The Discourse of Water Scarcity and Hydropolitical Dynamics in the Case of Jordan. Doctoral of Philosophy. University of East Anglia (UEA).

Hussein, H., 2018. Lifting the veil: Unpacking the discourse of water scarcity in Jordan. Environmental Science & Policy, 89, pp.385-392.

Hussein, H., Menga, F. and Greco, F., 2018. Monitoring transboundary water cooperation in SDG 6.5.2: How a critical hydropolitics approach can spot inequitable outcomes. Sustainability, 10(10), p.3640.

Hussein, H., 2019. Yarmouk, Jordan, and Disi basins: Examining the impact of the discourse of water scarcity in Jordan on transboundary water governance. Mediterranean Politics, 24(3), pp.269-289.

Hussein, H., Natta, A., Yehya, A.A.K. and Hamadna, B., 2020. Syrian refugees, water scarcity, and dynamic policies: How do the new refugee discourses impact water governance debates in Lebanon and Jordan?. Water, 12(2), p.325.

Hutton, G. and Chase, C., 2016. The knowledge base for achieving the sustainable development goal targets on water supply, sanitation, and hygiene. International journal of environmental research and public health, 13(6), p.536.

Ike, M., Donovan, J.D., Topple, C. and Masli, E.K., 2019. The process of selecting and prioritising corporate sustainability issues: Insights for achieving the Sustainable Development Goals. Journal of Cleaner Production, 236, p.117661.

Jahn, J. and Brühl, R., 2018. How Friedman's view on individual freedom relates to stakeholder theory and social contract theory. Journal of Business Ethics, 153(1), pp.41-52.

Jawahar, I.M. and McLaughlin, G.L., 2001. Toward a descriptive stakeholder theory: An organizational life cycle approach. Academy of Management Review, 26(3), pp.397-414.

Jayaram, J. and Avittathur, B., 2015. Green supply chains: A perspective from an emerging economy. International Journal of Production Economics, 164, pp.234-244.

Jayasinghe, K. and Thomas, D., 2009. The preservation of indigenous accounting systems in a subaltern community. Accounting, Auditing & Accountability Journal, 22(3), pp.351-378.

Jia, P., Diabat, A. and Mathiyazhagan, K., 2015. Analyzing the SSCM practices in the mining and mineral industry by ISM approach. Resources Policy, 46, pp.76-85.

Jiries, A., El-Hasan, T., Al-Hweiti, M. and Seiler, K.P., 2004. Evaluation of the effluent water quality produced at phosphate mines in central Jordan. Mine Water and the Environment, 23(3), pp.133-137.

Johnson, P. and Duberley, J., 2003. Reflexivity in Management Research. Journal of Management Studies, 40(5), pp.1279-1303.

Johnson, P., Buehring, A., Cassell, C. and Symon, G., 2006. Evaluating qualitative management research: Towards a contingent criteriology. International Journal of Management Reviews, 8(3), pp.131-156.

Jones, T.M. and Wicks, A.C., 1999. Convergent Stakeholder Theory. Academy of Management Review, 24(2), pp.206-221.

Jordan Phosphate Mines Company (JPMC), 2018. Mining and Mines [Online], Jordan Phosphate Mines Company (PLC). [Viewed 24th November 2020]. Available at: http://www.jpmc.com.jo/Default/Ar.

Jordanian National Government, 2020. Government Entities [Online], The Hashemite Kingdom Jordan, Jordanian e-Government. [Viewed 24th November 2020]. Available at: https://portal.jordan.gov.jo/wps/portal/Home#/.

Jørgensen, M.W. and Phillips, L.J., 2002. Discourse Analysis as Theory and Method. Sage Publications.

Kemp, D., Bond, C.J., Franks, D.M. and Cote, C., 2010. Mining, water and human rights: making the connection. Journal of Cleaner Production, 18(15), pp.1553-1562.

Kemp, D., Owen, J.R. and Van de Graaff, S., 2012. Corporate social responsibility, mining and "audit culture". Journal of Cleaner Production, 24, pp.1-10.

Kemp, R. and Martens, P., 2007. Sustainable development: how to manage something that is subjective and never can be achieved?. Sustainability: science, practice and Policy, 3(2), pp.5-14.

Killian, S. and O'Regan, P., 2016. Social accounting and the co-creation of corporate legitimacy. Accounting, Organizations and Society, 50, pp.1-12.

Kim, A., Barbara, C., Margaret, H.B., 2013. Carriers of water: Aboriginal women's experiences, relationships, and reflections. Journal of Cleaner Production, 60, pp.11-17.

Kirchoff, J.F., Omar, A. and Fugate, B.S., 2016. A behavioral theory of sustainable supply chain management decision making in non-exemplar firms. Journal of supply chain management, 52(1), pp.41-65.

Kitzinger, J., 1995. Qualitative research: introducing focus groups. Bmj, 311(7000), pp.299-302.

Kook, R., Harel-Shalev, A. and Yuval, F., 2019, January. Focus groups and the collective construction of meaning: Listening to minority women. In Women's Studies International Forum (Vol. 72, pp. 87-94). Pergamon.

Krajnc, D. and Glavič, P., 2005. How to compare companies on relevant dimensions of sustainability. Ecological economics, 55(4), pp.551-563.

Kramer, M.R. and Porter, M., 2011. Creating Shared Value. Harvard Business Review.

Laclau, E., Mouffe, C., 1985. Hegemony and Socialist Strategy: Towards a Radical Democratic Politics,2nd ed. New York:Verso Trade.

Langhelle O, Blindheim BT, Øygarden O. 2008. Framing Oil and Gas in the Arctic from a Sustainable Development Perspective. In Arctic Oil and Gas – Sustainability at Risk?, Mikkelsen A, Langhelle O (eds.). London and New York: Routledge, pp.15-44.

Lanka, S.V., Khadaroo, I. and Böhm, S., 2017. Agroecology accounting: biodiversity and sustainable livelihoods from the margins. Accounting, Auditing & Accountability Journal, 30(7), pp.1592-1613.

Laurence, D., 2011. Establishing a sustainable mining operation: an overview. Journal of Cleaner Production, 19(2-3), pp.278-284.

Leung, L., 2015. Validity, Reliability, and Generalizability in Qualitative Research. Journal of Family Medicine and Primary Care, 4(3), p.324.

Lewis, B. and Flynn, S., 2016. Mapping Mining to the Sustainable Development Goals: An Atlas [Online]. Switzerland: World Economic Forum. [Viewed 6th May 2017] Available at: http://www.indiaenvironmentportal.org.in/files/file/Mapping_Mining_SDGs_An_Atlas.pdf

Liphadzi, S.M. and Vermaak, A.P., 2017. Assessment of employees' perceptions of approaches to sustainable water management by coal and iron ore mining companies. Journal of Cleaner Production, 153, pp.608-625.

Lozano, R., 2013. Sustainability inter-linkages in reporting vindicated: a study of European companies. Journal of Cleaner Production, 51, pp.57-65.

Magness, V., 2008. Who are the stakeholders now? An empirical examination of the Mitchell, Agle, and Wood theory of stakeholder salience. Journal of business ethics, 83(2), pp.177-192.

Mancini, L. and Sala, S., 2018. Social impact assessment in the mining sector: Review and comparison of indicators frameworks. Resources Policy, 57, pp.98-111.

Mantere, S., & Vaara, E. 2008. On the problem of participation in strategy: A critical discursive perspective. Organization Science, 19(2), 341–358

Mao, Z., Xue, X., Tian, H. and Michael, A.U., 2019. How will China realize SDG 14 by 2030? A case study of an institutional approach to achieve proper control of coastal water pollution. Journal of Environmental Management, 230, pp.53-62.

Marston, A. and Perreault, T., 2017. Consent, coercion and cooperativismo: Mining cooperatives and resource regimes in Bolivia. Environment and Planning A: Economy and Space, 49(2), pp.252-272.

Masharqa, K., 2012. Embodying the Everyday Practices of Urban Water: The Discourse of Water Scarcity and Women's Subjectivities in Amman, Jordan. Master Dissertation. The American University in Cairo.

McAreavey, R. and Das, C., 2013. A delicate balancing act: Negotiating with gatekeepers for ethical research when researching minority communities. International Journal of Qualitative Methods, 12(1), pp.113-131.

McGahan, A.M., 2020. Where does an organization's responsibility end?: Identifying the boundaries on stakeholder claims. Academy of Management Discoveries, 6(1), pp.8-11.

McWilliams, A. and Siegel, D., 2001. Corporate social responsibility: A theory of the firm perspective. Academy of management review, 26(1), pp.117-127.

McWilliams, A., Siegel, D.S. and Wright, P.M., 2006. Corporate social responsibility: Strategic implications. Journal of management studies, 43(1), pp.1-18.

Mehta, L., 2016. Why invisible power and structural violence persist in the water domain. IDS Bulletin, 47(5), pp.31-42.

Mercer-Mapstone, L., Rifkin, W., Louis, W. and Moffat, K., 2017. Meaningful dialogue outcomes contribute to laying a foundation for social licence to operate. Resources Policy, 53, pp.347-355.

Merkl-Davies, D., Brennan, N. and Vourvachis, P., 2011, September. Text analysis methodologies in corporate narrative reporting research. In 23rd CSEAR International Colloquium (pp. 1-45). St Andrews.

Mertens, D.M. and Hesse-Biber, S., 2012. Triangulation and Mixed Methods Research: Provocative Positions. Journal of Mixed Methods Research, 6(2), pp.75-79.

Mertens, D.M., Ginsberg, P.E., 2009. The Handbook of Social Research Ethics. Sage Publications.

Miettunen, P., 2013. Our Ancestors Were Bedouin: Memory, Identity and Change: The Case of Holy Sites in Southern Jordan (Doctoral dissertation, University of Helsinki).

Milne, M.J., Patten, D.M., 2002. Securing organizational legitimacy: An experimental decision case examining the impact of environmental disclosures. Accounting, Auditing & Accountability Journal, 15(3), pp.372-405.

Ministry of Energy and Mineral Resources (MEMR), 2020. Government Entities [Online], The Hashemite Kingdom Jordan, Jordanian e-Government. [Viewed 11th November 2020]. Available at: URL.https://portal.jordan.gov.jo/wps/portal/Home/GovernmentEntities/Ministries/Ministry/ministry%20of%20energy%20and%20mineral%20resources/ministry%20of%20energy%20an

d%20mineral%20resources?entityType=ministry&lang=en&nameEntity=Ministry+of+Energy+and+Mineral+Resources

Ministry of Environment (MoE), 2003. Regulations, Environmental Impact Assessment, [Online]. Ministry of Environment (MoE) [Viewed 26th September 2019]. Available at: URL.http://www.moenv.gov.jo/En/LegislationAndPolicies/Legislation/Systems/Pages/EnvironmentalAssessmentSystem.aspx.

Ministry of Environment (MoE), 2016. National Strategy and Action Plan for Sustainable Consumption and Production in Jordan 2016 -2025 [Online]. Jordan: Ministry of Environment (MoE) [Viewed 26th September 2019]. Available at: URL.https://wedocs.unep.org/bitstream/handle/20.500.11822/34027/NSAP.pdf?sequence=1&isAllowed=y .

Ministry of Environment (MoE), 2020. Government Entities [Online], The Hashemite Kingdom Jordan, Jordanian e-Government. [Viewed 24th November 2020]. Available at: URL.https://portal.jordan.gov.jo/wps/portal/Home/GovernmentEntities/Ministries/Ministry/ministryofenvironment/ministryofenvironment?entityType=ministry&lang=en&nameEntity=Ministry+of+Environment .

Ministry of Planning & International Cooperation (MoPIC), 2017. Jordan's Way to Sustainable Development: First National Voluntary review on the implementation of the 2030 Agenda [Online]. Jordan: Ministry of Planning & International Cooperation (MoPIC). [Viewed 26th September 2019]. Available at: URL. https://sustainabledevelopment.un.org/content/documents/16289Jordan.pdf

Ministry of Planning and International Cooperation (MoPIC). 2020. Government Entities [Online], The Hashemite Kingdom Jordan, Jordanian e-Government. [Viewed 24th November 2020]. Available at: URL.https://portal.jordan.gov.jo/wps/portal/Home/GovernmentEntities/Ministries/Ministry/ministry of planning and international cooperation/ministry of planningandinternationalcooperation?entityType=ministry&lang=en&nameEntity=Ministry+of+Planning+and+Inter.

Ministry of Water & Irrigation (MWI), 2016. National Water Strategy 2016 - 2025. [Online]. Jordan: Ministry of Water & Irrigation (MWI). [Viewed 26th September 2019]. Available at: URL. https://doi.org/http://dx.doi.org/10.1001/jama.258.11.1487

Ministry of Water and Irrigation (MWI), 2017. Jordan Water Sector- Facts and Figures. [Online]. Jordan: Ministry of Water & Irrigation (MWI). [Viewed 26th September 2019]. Available at: http://www.mwi.gov.jo/ebv4.0/root_storage/ar/eb_list_page/%D9%82%D8%B7%D8%A7%D8%B9_%D8%A7%D9%84%D9%85%D9%8A%D8%A7%D9%87_%D8%AD%D9%82%D8%A7%D8%A6%D9%82_%D9%88%D8%A7%D8%B1%D9%82%D8%A7%D9%85_-2017.pdf

Ministry of Water and Irrigation (MWI), 2018. Red Sea-Dead Sea Project (RSDS). [Online]. Jordan: Ministry of Water & Irrigation (MWI). [Viewed 26th September 2019]. Available at: http://www.mwi.gov.jo/AR/List/_%D8%A7%D9%84%D9%85%D8%B4%D8%A7%D8%B1%D9%8A%D8%B9

Ministry of Water and Irrigation (MWI), 2019. Water Balance. [Online]. Jordan: Ministry of Water & Irrigation (MWI). [Viewed 26th September 2019]. Available at: http://www.mwi.gov.jo/ebv4.0/root_storage/ar/eb_list_page/%D8%A7%D9%84%D9%85%D9%88%D8%A7%D8%B2%D9%86%D8%A9_%D8%A7%D9%84%D9%85%D8%A7%D8%A6%D9%8A%D8%A9_2019.pdf

Ministry of Water and Irrigation (MWI). 2020. Government Entities [Online], The Hashemite Kingdom Jordan, Jordanian e-Government. [Viewed 24th November 2020]. Available at: URL.https://portal.jordan.gov.jo/wps/portal/Home/GovernmentEntities/Ministries/Ministry/MinistryofWaterandIrrigation/!ut/p/z0/04_Sj9CPykssy0xPLMnMz0vMAfIjo8ziHU1cQ0wN3B09A42CTAwcffycXd19grwCg4z0g1Pz9L30o_ArAppiVOTr7JuuH1WQWJKhm5mXlq8f4ZuZl1lcUlSpkJ-mEJ5Yk .

Mitchell, R.K., Agle, B.R. and Wood, D.J., 1997. Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. Academy of Management Review, 22(4), pp.853-886.

Mitchell, R.K., Buren, H.J.V., Greenwood, M. and Freeman, R.E., 2015. Stakeholder Inclusion and Accounting for Stakeholders. Journal of Management Studies, 52(7), pp.851-877.

Mitnick, B.M., 1975. The theory of agency. Public Choice, 24(1), pp.27-42.

Monteiro, N.B.R., da Silva, E.A. and Neto, J.M.M., 2019. Sustainable development goals in mining. Journal of Cleaner Production, 228, pp.509-520.

Moon, K. and Blackman, D., 2014. A guide to understanding social science research for natural scientists. Conservation Biology, 28(5), pp.1167-1177.

Moran-Ellis, J., Alexander, V.D., Cronin, A., Dickinson, M., Fielding, J., Sleney, J. and Thomas, H., 2006. Triangulation and integration: processes, claims and implications. Qualitative research, 6(1), pp.45-59.

Morgan, D.L. and Krueger, R.A., 1993. When to use focus groups and why. Successful focus groups: Advancing the state of the art, 1, pp.3-19.

Morgan, D.L. and Spanish, M.T., 1984. Focus groups: A new tool for qualitative research. Qualitative sociology, 7(3), pp.253-270.

Morse, J.M., Barrett, M., Mayan, M., Olson, K. and Spiers, J., 2002. Verification strategies for establishing reliability and validity in qualitative research. International journal of qualitative methods, 1(2), pp.13-22.

Morsing, M. and Schultz, M., 2006. Corporate social responsibility communication: stakeholder information, response and involvement strategies. Business ethics: A European review, 15(4), pp.323-338.

Mouffe, C. ed., 2014. Gramsci and Marxist Theory (RLE: Gramsci). Routledge.

Mudd, G.M., 2007. Global trends in gold mining: Towards quantifying environmental and resource sustainability. Resources Policy, 32(1-2), pp.42-56.

Mudd, G.M., 2010. The environmental sustainability of mining in Australia: key mega-trends and looming constraints. Resources Policy, 35(2), pp.98-115.

Musante, K. and DeWalt, B.R., 2010. Participant Observation: A Guide for Fieldworkers. Rowman Altamira.

Mutti, D., Yakovleva, N., Vazquez-Brust, D. and Di Marco, M.H., 2012. Corporate social responsibility in the mining industry: Perspectives from stakeholder groups in Argentina. Resources Policy, 37(2), pp.212-222.

Myers, M., 2009. Qualitative Research in Business & Management, Sage Publications.

Noble, H. and Smith, J., 2015. Issues of validity and reliability in qualitative research. Evidence-based nursing, 18(2), pp.34-35.

Northey, S.A., Mudd, G.M., Saarivuori, E., Wessman-Jääskeläinen, H. and Haque, N., 2016. Water footprinting and mining: where are the limitations and opportunities?. Journal of Cleaner Production, 135, pp.1098-1116.

Northey, S.A., Mudd, G.M., Werner, T.T., Haque, N. and Yellishetty, M., 2019. Sustainable water management and improved corporate reporting in mining. Water Resources and Industry, 21, p.100104.

Nwagbara, U. and Belal, A., 2019. Persuasive language of responsible organisation? A critical discourse analysis of corporate social responsibility (CSR) reports of Nigerian oil companies. Accounting, Auditing & Accountability Journal, 32(8), pp.2395-2420.

O'Donovan, G., 2002. Environmental disclosures in the annual report: Extending the applicability and predictive power of legitimacy theory. Accounting, Auditing & Accountability Journal, 15(3), pp.344-371.

O'Dwyer, B., 2002. Managerial perceptions of corporate social disclosure: An Irish story. Accounting, Auditing & Accountability Journal, 15(3), pp.406-436.

Olsen, T.D., 2017. Political stakeholder theory: The state, legitimacy, and the ethics of microfinance in emerging economies. Business Ethics Quarterly, 27(1), pp.71-98.

Onn, A.H. and Woodley, A., 2014. A discourse analysis on how the sustainability agenda is defined within the mining industry. Journal of Cleaner Production, 84, pp.116-127.

Oppermann, M., 2000. Triangulation—A methodological discussion. International Journal of Tourism Research, 2(2), pp.141-145.

Owen, J.R. and Kemp, D., 2013. Social licence and mining: A critical perspective. Resources policy, 38(1), pp.29-35.

Klein, P.G., Mahoney, J.T., McGahan, A.M. and Pitelis, C.N., 2019. Organizational governance adaptation: Who is in, who is out, and who gets what. Academy of Management Review, 44(1), pp.6-27.

Parmar, B.L., Freeman, R.E., Harrison, J.S., Wicks, A.C., Purnell, L. and De Colle, S., 2010. Stakeholder theory: The state of the art. Academy of Management Annals, 4(1), pp.403-445.

Pedrini, M. and Ferri, L.M., 2019. Stakeholder management: a systematic literature review. Corporate Governance: The International Journal of Business in Society, 19(1), pp.44-59

Pereira Eugénio, T., Costa Lourenço, I., Morais, A.I., 2013. Sustainability strategies of the company TimorL: extending the applicability of legitimacy theory. Management of Environmental Quality: An International Journal, 24(5), pp.570-582.

Phillips, R., Freeman, R.E. and Wicks, A.C., 2003. What stakeholder theory is not. Business ethics quarterly, 13(4), pp.479-502.

Pizzi, S., Caputo, A., Corvino, A. and Venturelli, A., 2020. Management research and the UN sustainable development goals (SDGs): A bibliometric investigation and systematic review. Journal of Cleaner Production, p.124033.

Ponterotto, J.G., 2005. Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. Journal of counseling psychology, 52(2), p.126.

Porter, M. and Kramer, M., 2011. Creating Shared Value. Harvard Business Review, 89 (1/2): 62-77.

Porter, M.E., 1997. Competitive strategy. Measuring Business Excellence.

Post, J.E., Preston, L.E. and Sauter-Sachs, S., 2002. Redefining the corporation: Stakeholder management and organizational wealth. Stanford University Press.

Prno, J. and Slocombe, D.S., 2012. Exploring the origins of 'social license to operate'in the mining sector: Perspectives from governance and sustainability theories. Resources policy, 37(3), pp.346-357.

Prno, J., 2013. An analysis of factors leading to the establishment of a social licence to operate in the mining industry. Resources Policy, 38(4), pp.577-590.

Provasnek, A.K., Sentic, A. and Schmid, E., 2017. Integrating eco-innovations and stakeholder engagement for sustainable development and a social license to operate. Corporate Social Responsibility and Environmental Management, 24(3), pp.173-185.

Qu, S., 2011. Q., & Dumay, J., (2011). The Qualitative Research Interview. Qualitative research in accounting & management, 8(3), pp.238-264.

Rahdari, A.H. and Rostamy, A.A.A., 2015. Designing a general set of sustainability indicators at the corporate level. Journal of Cleaner Production, 108, pp.757-771.

Rajaram, V., Dutta, S. and Parameswaran, K. eds., 2005. Sustainable mining practices: A global perspective. CRC Press.

Ranängen, H. and Lindman, Å., 2017. A path towards sustainability for the Nordic mining industry. Journal of Cleaner Production, 151, pp.43-52.

Ranängen, H., Cöster, M., Isaksson, R. and Garvare, R., 2018. From global goals and planetary boundaries to public governance—a framework for prioritizing organizational sustainability activities. Sustainability, 10(8), p.2741.

Reed, M.S., 2008. Stakeholder participation for environmental management: a literature review. Biological conservation, 141(10), pp.2417-2431.

Reed, M.S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C.H. and Stringer, L.C., 2009. Who's in and why? A typology of stakeholder analysis methods for natural resource management. Journal of environmental management, 90(5), pp.1933-1949.

Rimawi, O., Jiries, A., Zubi, Y. and El-Naqa, A., 2009. Reuse of mining wastewater in agricultural activities in Jordan. Environment, development and sustainability, 11(4), pp.695-703.

Rodrigue, M., 2014. Contrasting realities: corporate environmental disclosure and stakeholder-released information. Accounting, Auditing & Accountability Journal, 27(1), pp.119-149.

Rodrigues, M. and Mendes, L., 2018. Mapping of the literature on social responsibility in the mining industry: A systematic literature review. Journal of Cleaner Production, 181, pp.88-101.

Rosati, F. and Faria, L.G., 2019. Addressing the SDGs in sustainability reports: The relationship with institutional factors. Journal of Cleaner Production, 215, pp.1312-1326.

Rosati, F. and Faria, L.G.D., 2019. Business contribution to the Sustainable Development Agenda: Organizational factors related to early adoption of SDG reporting. Corporate Social Responsibility and Environmental Management, 26(3), pp.588-597.

Ross, A., 2009. Modern interpretations of sustainable development. Journal of Law and Society, 36(1), pp.32-54.

Rozema, J.G., Bond, A.J., Cashmore, M. and Chilvers, J., 2012. An investigation of environmental and sustainability discourses associated with the substantive purposes of environmental assessment. Environmental Impact Assessment Review, 33(1), pp.80-90.

Rubin, H.J., Rubin, I.S., 1995. Foundations of Qualitative Interviewing, in: Qualitative Interviewing: The Art of Hearing Data. Sage Publications.

Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., 2019. Transformations to achieve the Sustainable Development Goals Includes the SDG Index and Dashboards. Sustainable Development Report 2019. New York: USA.

Sachs, J.D., 2012. From millennium development goals to sustainable development goals. The lancet, 379(9832), pp.2206-2211.

Salvia, A.L., Leal Filho, W., Brandli, L.L. and Griebeler, J.S., 2019. Assessing research trends related to Sustainable Development Goals: Local and global issues. Journal of cleaner production, 208, pp.841-849.

Sampson, H., 2004. Navigating the Waves: the usefulness of a pilot in qualitative research. Qualitative Research, 4(3), pp.383-402.

Saner, R., Yiu, L. and Kingombe, C., 2019. The 2030 Agenda compared with six related international agreements: valuable resources for SDG implementation. Sustainability Science, 14(6), pp.1685-1716.

Sauer, P.C. and Seuring, S., 2017. Sustainable supply chain management for minerals. Journal of Cleaner Production, 151, pp.235-249.

Saunders, M., Lewis, P., Thornhill, A., 2008. Research Methods for Business Students. Pearson Education.

Schlumberger, O. and Bank, A., 2001. Succession, legitimacy, and regime stability in Jordan. The Arab Studies Journal, 9(2/1), pp.50-72.

Scott, W.R., 1995. Introduction: institutional theory and organizations, in: The Institutional Construction of Organizations. Sage Publications.

Shamayleh, M.A., 2019, The Water Crisis in Jordan: A Habermasian Analysis of how Power and Interests Guide Policy towards Colonization and Unsustainable Water Management. (Doctoral dissertation, University of Newcastle).

Siddiqui, J. and Uddin, S., 2016. Human rights disasters, corporate accountability and the state. Accounting, Auditing & Accountability Journal, 29(4), pp.679-704.

Siddiqui, J., Mehjabeen, M. and Stapleton, P., 2021. Emergence of corporate political activities in the guise of social responsibility: dispatches from a developing economy. Accounting, Auditing & Accountability Journal, 34(5), pp.1137-1162.

Siew, R.Y., 2015. A review of corporate sustainability reporting tools (SRTs). Journal of Environmental Management, 164, pp.180-195

Signori, P., Flint, D.J. and Golicic, S., 2015. Toward sustainable supply chain orientation (SSCO): mapping managerial perspectives. International Journal of Physical Distribution & Logistics Management, 45(6), p.536.

Silva, S., Nuzum, A.K. and Schaltegger, S., 2019. Stakeholder expectations on sustainability performance measurement and assessment. A systematic literature review. Journal of Cleaner Production, 217, pp.204-215.

Simon, R., 2015. Gramsci's Political Thought: An Introduction. Lawrence & Wishart.

Singh, R.K., Murty, H.R., Gupta, S.K. and Dikshit, A.K., 2009. An overview of sustainability assessment methodologies. Ecological indicators, 9(2), pp.189-212.

Singleton, R.A., Straits, B.C., 2005. Approaches to Social Research, Oxford University Press, New York:USA.

Smart Oruh, E., Nwagbara, U., Mordi, C. and Mushfiqur, R., 2020. Legitimisation strategies and managerial capture: a critical discourse analysis of employment relations in Nigeria. The International Journal of Human Resource Management, 31(22), pp.2866-2892.

Sobkowiak, M., Cuckston, T. and Thomson, I., 2020. Framing sustainable development challenges: accounting for SDG-15 in the UK. Accounting, Auditing & Accountability Journal, 33(7), pp.1671-1703.

Sowter, A., 2016. Water, Place and Learning: A Case Study from the Occupied Palestinian Territories (Doctoral dissertation, University of Bath).

Spence, C., 2007. Social and environmental reporting and hegemonic discourse. Accounting, Auditing & Accountability Journal, 20(6), pp.855-882.

Spicer, A., Dunfee, T. W., & Bailey, W. J., 2004. Does national context matter in ethical decision making? An empirical test of integrative social contracts theory. Academy of Management Journal, 47(4), pp. 610–620.

Spivak, G.C., 1994. Can the Sublatern Speak, in: Colonial Discourse and Post-Colonial Theory. Routledge.

Suchman, M.C., 1995. Managing legitimacy: Strategic and institutional approaches. Academy of management review, 20(3), pp.571-610.

Tarawneh, K., 2016. A Comprehensive Outlook of Mining Industry in Jordan, Opportunities and Threats. Open Journal of Geology, 6(09), p.1137.

Tashman, P. and Raelin, J., 2013. Who and what really matters to the firm: Moving stakeholder salience beyond managerial perceptions. Business Ethics Quarterly, 23(4), pp.591-616.

The Heritage Foundation, 2021. Economic Freedom Index 2021[Online]. [Viewed 15th of May 2021]. Available at: https://www.heritage.org/index/about, 2021.

Tost, M., Hitch, M., Chandurkar, V., Moser, P. and Feiel, S., 2018. The state of environmental sustainability considerations in mining. Journal of cleaner production, 182, pp.969-977.

U.S. Department of the Interior, 2019. Geological Survay Minerals Yearbook, Mineral Commodity Summaries 2019 [Online]. Virginia: U.S.A. [Viewed 15th of January 2019]. Available at: URL.https://www.usgs.gov/centers/nmic/africa-and-middle-east#jo.

Uddin, S., Siddiqui, J. and Islam, M.A., 2018. Corporate social responsibility disclosures, traditionalism and politics: A story from a traditional setting. Journal of Business Ethics, 151(2), pp.409-428.

UN Water. 2019. Water in the 2030 Agenda for Sustainable Development [Online]. [Viewed 24th of September 2020]. Available at: URL. http://www.unwater.org/sdgs/en/.

Unerman, J., Bebbington, J., O'Dwyer, B., 2007. Sustainability Accounting and Accountability. Routledge

United Nations, 2016. Sustainable Development GOALS - 17 Goals to Transform Our World. United Nations Development Program (UNDP), Jordan.

United Nations, 2017. United Nations Global Compact (UNGC), Jordan.

United Nations. 1993. Earth Summit: Agenda 21, the United Nations programme of action from Rio. United Nations: New York.

USAID, 2018. Water Management Initiative (WMI) [Online]. Amman: Jordan. [Viewed 24th of September 2020]. Available at: URL. https://www.globalwaters.org/sites/default/files/jordan-wmi-midterm-evaluation.pdf

Van der Waal, J.W. and Thijssens, T., 2020. Corporate involvement in sustainable development goals: Exploring the territory. Journal of Cleaner Production, 252, p.119625.

Van Dijk, T.A., 1998. Ideology, A Multidisciplinary Approach. Sage Publications.

van Leeuwen, T., 2013. The Language of Corporate Annual Reports: A Critical Discourse Analysis. In the Routledge Companion to Accounting Communication. London and New York: Routledge, pp. 45-57.

Van Zanten, J.A. and Van Tulder, R., 2018. Multinational enterprises and the Sustainable Development Goals: An institutional approach to corporate engagement. Journal of International Business Policy, 1(3), pp.208-233.

Veleva, V. and Ellenbecker, M., 2001. Indicators of sustainable production: framework and methodology. Journal of cleaner production, 9(6), pp.519-549.

Vintró, C., Sanmiquel, L. and Freijo, M., 2014. Environmental sustainability in the mining sector: evidence from Catalan companies. Journal of cleaner production, 84, pp.155-163.

Whitmore, A., 2006. The emperors new clothes: Sustainable mining?. Journal of Cleaner Production, 14(3-4), pp.309-314.

Wodak, R., Meyer, M., 2009. Methods Critical Discourse Analysis, Saga Publications.

Wood, D.J., Mitchell, R.K., Agle, B.R. and Bryan, L.M., 2021. Stakeholder identification and salience after 20 years: Progress, problems, and prospects. Business & Society, 60(1), pp.196-245.

Worrall, R., Neil, D., Brereton, D. and Mulligan, D., 2009. Towards a sustainability criteria and indicators framework for legacy mine land. Journal of cleaner production, 17(16), pp.1426-1434.

Yakovleva, N., Kotilainen, J. and Toivakka, M., 2017. Reflections on the opportunities for mining companies to contribute to the United Nations Sustainable Development Goals in sub–Saharan Africa. The Extractive Industries and Society, 4(3), pp.426-433.

Yusof, N.A., Abidin, N.Z., Zailani, S.H.M., Govindan, K. and Iranmanesh, M., 2016. Linking the environmental practice of construction firms and the environmental behaviour of practitioners in construction projects. Journal of Cleaner Production, 121, pp.64-71.

Yin, R., 2009. Case Study Research:Design and Methods, Sage Publications.

Zhang, A., Moffat, K., Lacey, J., Wang, J., González, R., Uribe, K., Cui, L. and Dai, Y., 2015. Understanding the social licence to operate of mining at the national scale: a comparative study of Australia, China and Chile. Journal of Cleaner Production, 108, pp.1063-1072.

Zisopoulos, F.K., Overmars, L. and van der Goot, A.J., 2017. A conceptual exergy-based framework for assessing, monitoring, and designing a resource efficient agri-food sector. Journal of Cleaner Production, 158, pp.38-50.

Zohrabi, M., 2013. Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings. Theory and Practice in Language Studies, 3(2), pp.254-262.

Zorzini, M., Hendry, L., Huq, F. and Stevenson, M., 2015. Socially responsible sourcing: reviewing the literature and its use of theory. International Journal of Operations and Production Management, 35(1), pp.60-109.

Zotzmann, K. and O'Regan, J.P., 2016. Critical discourse analysis and identity. In The Routledge handbook of language and identity (pp. 139-154). Routledge.

Appendix

Appendix I Ethical Application

Application 022947

Section A: Applicant details

Date application started:
Mon 10 September 2018 at 12:49

First name:
Ola

Last name:
Al Haddid

Email:
otnalhaddid1@sheffield.ac.uk

Programme name:
Research Postgraduate Programme

Module name:
Phd Management
Last updated:
03/06/2019

Department:
Management School

Applying as:
Postgraduate research

Research project title:
An investigation into the impact of the mining industry on SDG 6-Cleaner Water and Sanitation in Jordan

Has your research project undergone academic review, in accordance with the appropriate process?
Yes

Similar applications:
- not entered -

Section B: Basic information

Supervisor

Name	Email
Sonal Choudhary	s.choudhary@sheffield.ac.uk

Proposed project duration

Start date (of data collection):
Mon 1 July 2019

Anticipated end date (of project)
Thu 30 September 2021

3: Project code (where applicable)

Project externally funded?
- not entered -

Project code
- not entered -

Suitability

Takes place outside UK?
Yes

Involves NHS?
No

Health and/or social care human-interventional study?
No

ESRC funded?
No

Likely to lead to publication in a peer-reviewed journal?
Yes

Led by another UK institution?
No

Involves human tissue?
No

Clinical trial or a medical device study?
No

Involves social care services provided by a local authority?
No

Involves adults who lack the capacity to consent?
No

Involves research on groups that are on the Home Office list of 'Proscribed terrorist groups or organisations?
No

Indicators of risk

Involves potentially vulnerable participants?
No
Involves potentially highly sensitive topics?
No

Section C: Summary of research

1. Aims & Objectives

In the study, the aim is to investigate the impact of the mining industry on SDG 6- Cleaner Water and Sanitation in Jordan. Therefore, the study investigates water- the source of life- a finite and irreplaceable resource, as well as fundamental to sustain individual, societal and industrial well-being. Water -sustainability represents a critical issue, which challenges endeavours towards sustainable development (SD), particularly in the water-intense extractive industry. In the mining industry, extractive organisations cause substantial water issues, such as over-consumption, contamination, and loss (Gunson et al., 2012; Mudd, 2010; Northey et al., 2016). The organisations extractive practices cause a detrimental impact on stakeholders, such as local communities-water cleanliness and sanitation.

On account of water-sustainability issues retaining a global trait, organisations face consistent challenges regarding their un-sustainable operations, in particular committing, engaging, and communicating accountability towards stakeholder. To resolve the issue, the United Nations set 17 Sustainability Development Goals (SDG) to achieve sustainable development in 2015. Among those goals, SDG 6-Cleaner Water and Sanitation focuses on improving water quality and hygiene for stakeholders.

The water-sustainability issues take on increasing significance in water-scarce countries, such as Jordan. As the fourth driest country in the world, water provision suffers from the pressure exerted by the extractive organisation in Jordan. In

the mining industry, extractive organisation detrimentally affects stakeholders water-provisions, which causes the deprivation of the means of livelihood, resettlement of local communities and withdrawal of health. Therefore, the objectives of the current research study are:
1. Examine the understanding of the Jordanian government and the mining industry regarding Goals 6- Cleaner Water and Sanitation.
2. Examine the Jordanian government and the mining industry policies and practices regarding Cleaner Water and Sanitation.
3. Examine the understanding of key stakeholders regarding the impact of the mining industry on Cleaner Water and Sanitation.

2. Methodology

To investigate the mining industry, the study embraces an explanatory- case study design, which focuses on the understanding of extractive organisations and their diverse stakeholders regarding cleaner water and sanitation. Therefore, the study comprises two case studies, specifically Two extractive organisation A/B in the mining industry.

In light of this case study, the researcher intends to conduct semi-structured interviews and focus groups with multiple stakeholders, due to the rising influence of different stakeholders on the mining industry. In doing so, the study surfaces the interest and issues of multiple stakeholders in regard to cleaner water and sanitation, thus providing a holistic perspective.

From a multi-stakeholders' perspective, the study intends to conduct interviews with primary stakeholders, such as 3 employees from each extractive organisation, 1 shareholder from each extractive organisation, 2 municipality-mayors from the local authority among others. In addition, the study intends to interview secondary stakeholders, such as 3 government officials from different ministries, 1 member of an international organisation, and 1 non-governmental organisation (NGOs) among others. In total, the study intends to conduct 20 individual semi-structured interviews. Please refer to Supporting Documentation in sub-section Additional Documentation for semi-structured interview participants.

To achieve a holistic perspective, the study intends to conduct a face-to-face recorded a semi-structured interview with participants individually or collectively(please refer to Supporting Documentation in sub-section Additional Documentation). The participants might be uncomfortable with recording, thus the study intends to adjust to hand-written transcription. In the study, the researcher intends to conduct 20 individual -interviews until the study reaches data saturation, thereby, the point at which interviews transcripts no longer generates new discourse –narrative insights. The semi-structured interview discussion should last from 40 to 60 minutes. Furthermore, the semi-structured interviews would be conducted during working hours, as well as on organisation premises.

In addition, the study intends to conduct a face-to-face recorded focus group discussion with 4 sub-groups from the local community to explores and clarify participants' perceptions, experience, and opinions. In particular, the study intends to conduct a focus group with Bedouin, farmers, townsmen, and woman. In regard to cleaner water and sanitation, the study focuses on what participants' think? How do they think? and Why they think?.

In the study, local community members might be hesitant to participate in an individual semi-structured interview, due to the rigid nature of the interviews. Therefore, focus groups composed of familiar participants encourages participants to discuss sensitive topics in depth, breadth and duration. In doing so, focus groups facilitate the discussion of sensitive topics, such as cleaner water and sanitation. Therefore, the focus groups would be conducted with members of the local community, such as Bedouin, farmers, townsmen, and woman.

In light of this perspective, the researcher intends to conduct four-focus groups with 4-5 individuals to focus the discussion on the topic of cleaner water and sanitation. Furthermore, small-focus groups have an advantage of structured and directed discussion, thus reducing participants digressing off topic. Consequently, the focus group discussion should last from 2 to 3 hours- approximately.

In the study, the researcher intends to surface extractive organisations and their diverse stakeholder's perception, experience and opinions on cleaner water and sanitation. Therefore, the study intends to surface water, water scarcity, sustainability, water sustainability, sustainable development goals (SDGs), SDG 6- Cleaner Water and Sanitation, sustainability assessment, and water- sustainability assessment themes. To surface those themes, the study utilises general interview and focus group guiding -questions discussing water, sustainability, sustainable development goals (SDGs), and sustainability assessment.

3. Personal Safety

Have you completed your departmental risk assessment procedures, if appropriate?

Not applicable

Raises personal safety issues?

Yes

In the study, the researcher would be required to ensure personal safety during the semi-structured interviews and

focus- groups discussions on the water-statuses in Jordan. Jordan- a politically stable country-absence of violent conflicts exemplifies a secure country for travel with regards to personal safety. Furthermore, the researcher -as a native- embodies a familiarity with the language, traditions and customs of the country.
An important point to mention is that the study obtains funding from an external body namely Princess Sumaya University for Technology (PSUT) in Amman, Jordan. Therefore, the researcher would be informing and reporting the impending interviews to both the external -funding and supervisory teams at the universities. Furthermore, the research intends to utilize a research interview and focus group schedule to inform both institutions of the scheduled interview via google docs., namely Princess Sumaya University for Technology (PSUT), The University of Sheffield (UOS)- supervision team, and family members. The research interview schedule encompasses interview date, time, location, and contact information among others.
Furthermore, the study intends to conduct both semi-structured interviews and focus- groups during working hours. However, the researcher intends to conduct the study in two locations depending on participants, for instance, local communities would be invited to conduct a focus group discussion on the external-funding body premises, namely Princess Sumaya University for Technology (PSUT). On the other hand, the study intends to conduct individual semi-structured interviews with extractive organisations on organisation premises in the mining industry.

Section D: About the participants

1. Potential Participants

In the study, the researcher intends to interview two organization correspond to the target population representing the mining industry in Jordan. Thereby, the study comprises two case studies, specifically two organisation A/B in the mining industry. Furthermore, the study intends to interview primary and secondary stakeholders.

From multi-stakeholders' perspective, the study intends to interview primary stakeholders, such as 3 employees from each extractive organisation, 1 shareholder from each extractive organisation, 2 municipality-mayors from the local authority among others. In addition, the study intends to interview secondary stakeholders, such as 3 government officials from different ministries, 1 member of an international organisation, and 1 non-governmental organisation (NGOs) among others. In total, the study intends to conduct 20 individual semi-structured interviews. Please refer to Supporting Documentation in sub-section Additional Documentation for semi-structured interview participants.

Therefore, the interview sample comprises interviewees from different designations and sectors. To avoid participatory bias, the study categorised the stakeholders in accordance with top or bottom accountability. For instance, bottom accountability would be represented by 'accountee' in operational designations, such as higher -education academic and news-publishing journalist. However, top accountability would be represented by 'accountor ' in executive designations, such as executive- government officials.

In doing so, the study intends to conduct face-to-face recorded semi-structured interviews and focus group discussion on the water status in Jordan. The participants might be uncomfortable with recording, thus the study intends to adjust to hand-written transcription.

In the study, the research intends to conduct 20 individual interviews with multiple stakeholders- until the study reaches data saturation, thus the point at which interviews transcripts no longer generates new discourse –narratives insights. The semi-structured interview discussion should last from 40 to 60 minutes. Furthermore, the semi-structured interviews would be conducted during working hours, as well as on organisation premises.

In addition, the study intends to conduct a face-to-face recorded 4 focus group discussion with 4 sub-groups from the local community, such as Bedouin, farmers, townsmen, and woman. In the study, local community member might be hesitant to participate, therefore focus groups encourages participants to disclose in depth, breadth and time. Furthermore, focus groups facilitate the discussion of sensitive topics, such as cleaner water and sanitation. Accordingly, the researcher intends to conduct four-focus groups with 4-5 individuals for 2 to 3 hours- approximately.

2. Recruiting Potential Participants

The study obtains funding from an external body namely Princess Sumaya University for Technology (PSUT) in Amman, Jordan. The external-funding body collaborates with a number of stakeholders, such as extractive organisations, international organisations and NGOs. Therefore, the external-funding body would assist and facilitate access to interviewees during fieldwork.

In the study, the researcher intends to contact the interviewees via email-invites, which encompasses an information and consent sheet. In doing so, the study intends to schedule dates and times for the interviews before fieldwork, such as senior management, government officials, and international organisation. To confirm participation, the study intends to contact participants via phone call. During the phone call, the researcher intends to ask participants if they agree to participate in an audio-recorded interview. In order to convince participants, the study intends to inform participants of the confidentiality policy regarding the interview. Subsequently, the study intends to send a follow-up email confirming the dates and times of the interviews. Furthermore, the study intends to present a participant with the information and

consent sheet via email.

However, the study might face challenges in contacting stakeholders, which lack access to emails, such as local communities. As a native, the researcher intends to utilise 'snowballing techniques' to overcome challenges related to access to participants during fieldwork. For instance, the study intends to interview non-governmental organisations (NGOs) with contact with local communities, thereby, acquiring referrals to prospective interviewees from the local community, specifically local community members possessing a phone number.

Therefore, the research intends to contact those interviewees via phone calls. During the phone call, the researcher intends to: First, explain and discuss the research focus with the participants. Second, ask participants if they agree to participate in an audio-recorded interview. Third, inform participants of the confidentiality policy regarding the interview. Subsequently, the study intends to present the participant with the information and consent sheet during the interview.

In the study, the participant might request the interview questions to prepare for the interview. Therefore, the study intends to provide participants with the interview question prior to the interview, if requested. Furthermore, the study intends to obtain verbal- content from participants on audio-record during the interview. In doing so, the study assures participants comprehension and agreement to commence with the interview.

An important point to be emphasised, the study intends to conduct the semi-structured interviews in Arabic, the native language of participants. Therefore, the study intends to translate the information and consent sheet in Arabic. In doing so, the study facilitates communication in a familiar and comfortable language for the participants, so it helps to gather thorough and insightful knowledge.

2.1. Advertising methods

Will the study be advertised using the volunteer lists for staff or students maintained by CiCS? No

- not entered -

3. Consent

Will informed consent be obtained from the participants? (i.e. the proposed process) Yes

In the study, the research intends to obtain informed consent through a consent sheet. Furthermore, the study intends to obtain verbal- consent during both the interviews and focus groups.

4. Payment

Will financial/in kind payments be offered to participants? No

5. Potential Harm to Participants

What is the potential for physical and/or psychological harm/distress to the participants?

The study investigates sustainability and SDG-6 in the mining industry, thereby, focuses on extractive organisations' and their stakeholder's perceptions, opinions and experiences on cleaner water and sanitation. In terms of psychological harm, the participants might be uncomfortable/distressed with the semi-structured interview question and the focus group topics.
Furthermore, the study encounters physical harm for both research and participants, such as conducting the study out-of-work hours and insecure location.

How will this be managed to ensure appropriate protection and well-being of the participants?

To ensure the protection and well-being of participants, the study intends to provide interviewees with information and consent sheets before the interview. Therefore, the researcher would describe and explain to participants the parameters of the research-study in layman terms.

An important point to mention is that the study obtains funding from an external body namely Princess Sumaya University for Technology (PSUT) in Amman, Jordan. Therefore, the researcher would be informing and reporting the impending interviews and focus groups to both the external -funding and the supervisory team at both universities. Furthermore, the research intends to utilize a research interview schedule to inform both institutions of the scheduled interview via google docs., namely Princess Sumaya University for Technology (PSUT), The University of Sheffield (UOS)-supervision team, and family members. The research interview schedule encompasses interview date, time, location, and contact information among others. In doing so, the study avoids any potential physical harm happening to the researcher.

Furthermore, the study intends to conduct both semi-structured interviews and focus groups during working hours. However, the researcher intends to conduct the study in two locations depending on participants, for instance, the 4 focus group discussions with local communities-members would be conducted on the external-funding body premises, namely Princess Sumaya University for Technology (PSUT). To gain access to the premises, the study would be informing the external funding-body of the focus group schedule, specifically names of participants, location, date and time. In

doing so, the study would be facilitating the participant's access to the external-funding body premises. Thus, the study avoids any potential physical harm happening to the researcher and participants.

On the other hand, the study intends to conduct the semi-structured interviews on organisation premises, such as extractive organisation, government, local authority and NGOs. In doing so, the study ensures appropriate protection and well-being of both the researcher and participants.

In terms of psychological harm, the participants might be uncomfortable/distressed with the semi-structured interview question and the focus group topics. Therefore, the study intends to clarify and explain that participants retain the right to withdraw from the study- at any time, with no questions asked. If the questions asked during the interview and focus group causes distress or discomfort, the study intends to proceed to another topic.

Furthermore, the study provides participants with a copy of the transcripts after the interview. Therefore, the study invites participants to highlight and discuss issues - and/ or make adjustments as appropriate. Furthermore, the study pseudonyms the interview transcripts, thus concealing participants' real-identify through random-code assigned as a means of participants'-identification in the study. In doing so, the avoids any potential psychological harm happening to the participants.

Section E: About the data

1. Data Processing

Will you be processing (i.e. collecting, recording, storing, or otherwise using) personal data as part of this project? (Personal data is any information relating to an identified or identifiable living person).
Yes

Which organisation(s) will act as Data Controller?

University of Sheffield only

2. Legal basis for processing of personal data

The University considers that for the vast majority of research, 'a task in the public interest' (6(1)(e)) will be the most appropriate legal basis. If, following discussion with the UREC, you wish to use an alternative legal basis, please provide details of the legal basis, and the reasons for applying it, below:

The study would be abiding the by The University of Sheffield- 'a task in the public interest' (6(1)(e)) for an appropriate legal basis.

Will you be processing (i.e. collecting, recording, storing, or otherwise using) 'Special Category' personal data?
No

3. Data Confidentiality

What measures will be put in place to ensure confidentiality of personal data, where appropriate?

In light of data confidentiality, the study intends to disseminate information related to the extent to which interviewee's data will remain confidential in information and consent sheets. Therefore, personal information- data would be managed according to the data protection principles.

In the study, the researcher intends to anonymise identifiable-participant and organisations- information through omitting or pseudonymising identifiable- information in the interview and focus groups transcripts. For instance, the researcher intends to conceal participants' real-identity through assigning random-codes, as well as a mean of participants'-identification in the study. Similarly, the study intends to anonymize the names of organisations through assigning random-codes, as well as a mean of participants'-identification in the study.

In other words, the study intends to omit interviewees-personal data from the transcripts, such as interviewee's name, position title and contact information. Thereby, the study pseudonyms identifiable-participant or organisations-information in the interviews. In doing so, the study would ensure the anonymity of the interviewees in the transcript, dissertation and future publications.

4. Data Storage and Security

In general terms, who will have access to the data generated at each stage of the research, and in what form

In the study, the supervisors- team would have access to the data generated at each stage of the study. However, the external-funding body would have access to the 'anonymised' data generated in the dissertation, namely Princess Sumaya University for Technology (PSUT) Amman, Jordan. Since the external -funding body requires a copy of the

dissertation, thus the data generated would pseudonymised and anonymized for the dissertation submission. Moreover, the study intends to disseminate information related to the extent to which interviewee's data will remain secured in the information and consent sheets. Therefore, personal information- data would be managed according to data protection principles.

In the course of data collection, the study intends to ensure a strong password-lock for portable devices, such as a laptop. Furthermore, the study would encrypt interviewees' personal information, specifically information sheet, consent sheets, correspondence, recording, and transcripts. In terms of storage, the study intends to store interview and focus group data on the UoS -google drive. Moreover, the study intends to lock paper-printouts containing personal information in a safety locker.

In the course of data analysis, the study intends to inquire whether the interviewees would be comfortable with recording the interview in the information and consent sheets. If participants express discomfort with recording, thus the study intends to adjust to hand-written notes/transcription. In the study, interviewees would have access to both audio recording and hand-written data for six months after the interview. If requested, the study would provide the interviewees' with audio recording, as well as pseudonymised and anonymized transcript of the interview.

In disposing of personal data, the study intends to dispose/ delete of the personal audio-recorded data securely, after the fulfilment of the PhD dissertation. Similarly, the study intends to shred the paper -printouts transcripts after the fulfilment of the PhD dissertation.

What steps will be taken to ensure the security of data processed during the project, including any identifiable personal data, other than those already described earlier in this form?

In the study, the descriptive-data would be anonymized and pseudonymised in the semi-structured interview, specially collected, stored, utilized, disclosed and destroyed data. However, the study abides by the General Data Protection Regulation (GDPR) and the Common Law Duty of Confidentiality.

Will all identifiable personal data be destroyed once the project has ended?
Yes

Please outline when this will take place (this should take into account regulatory and funder requirements).

In disposing of personal data, the study intends to dispose of the personal data securely, after the fulfilment of PhD requirement in the university. Therefore, the study intends to send devices with personal information to the Estates and Facilities Management for elimination. Furthermore, the study intends to lock paper-printouts containing personal information away. Moreover, the study does not intend to retain personal information data for longer than necessary, thus study would shred the paper -printouts, after the fulfilment of PhD requirement in the university.

Section F: Supporting documentation

Information & Consent

Participant information sheets relevant to project?
Yes

Document 1060106 (Version 4) — All versions
Information Sheet/ Focus Groups and Interview

Consent forms relevant to project?
Yes

Document 1060105 (Version 4) — All versions
Consent Sheet

Additional Documentation

Document 1060107 (Version 2) — All versions
Study schedule, questions and participants

External Documentation

- not entered -

Section G: Declaration

Signed by:
Ola Al Haddid
Date signed:
Tue 28 May 2019 at 13:25

Offical notes

- not entered -

3323

3324 Appendix Ⅱ Semi-Structured Interviews Focus Groups / Participants

Accountability	**Stakeholders**				**Designation**	**Code**	**Sector**	**No. of Interviews**	**Length of Interview**
Top	**Industry**	**Mining Companies**	Extractive Organisation A	Senior Management	Chief Sustainability/CSR Officer	EO-A1	Public Sector	1	45-60 min
				Middle Management	Water Manager	EO-B2		1	
				Employees	Water Resources Engineer Mechanical Engineer	EO-A3		1	
			Extractive Organisation B	Senior Management	Board of Directors (BOD) -Member	EO-B1		1	
				Middle Management	CSR Manager	EO-B2		1	
				Employees	Water Research and Quality Engineer	EO-B3		1	
	Primary	**Government** Water and Irrigation Ministry (3) Ministry of Environment (1) Ministry of Energy and Mineral Resources (2) Ministry of Planning and International Cooperation (1)			Executive: -Minster -Water demand director -Water resource monitor director	MWI MoE MEMR MOPIC	Public Sector	7	45-60 min
	Secondary	**Non-Governmental Organization (NGOs)**			Executive: -General Director -Director of SDGs programme	NGO-A NGO-B	NGOs Sector	2	45-60 min

	Secondary	**International Organizations** The United Nations -UNDP	Executive: Sustainability-SDGs Director in Jordan	IO	International Governance Sector	1	45-60 min
	Primary	**Local Authority** Municipality – South of Jordan	Mayor-People Representative	LA	Public Sector	2	45-60 min
Bottom	Primary	**Bedouin Tribes** Local Community	Citizens	FG-B	Local Community	4 Focus Groups / 4-6 Individuals	2-3 hours
	Primary	**Farmers** Local Community	Citizens	FG-F			
	Primary	**Townsmen** Local Community	Citizens	FG-T			
	Primary	**Woman** Local Community	Citizens	FG-W			
	Secondary	**Academics**	Lecture	AR-1 AR-2	Higher Education Sector	2	45-60 min
	Secondary	**Journalists**	Reporter	JR	Publishing and Journalism Sector	1	45-60 min

3330 Appendix Ⅲ Semi-Structured Interview and Focus Group Guide/ Protocol

First Sub-Research Question	What might be the challenges for the national government and extractive organisations regarding access to clean and sanitary water in Jordan?				
Participants /Themes	Water	Water issue	Accountability	Water sustainability	SDG6-Cleaner water and Sanitation
Mining Companies	Obviously, your organisation utilises natural resources to sustain their extractive operation, such as water ……. 1-Can you tell me about the significance of water for your extractive operation? 2-If any, what issues does the organisation face regarding water? 3-What are your priority water- issues?	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 4-In your opinion, what causes the water issue? 5-Who is impacted by the water issue? 6- How does the water issue impact stakeholders?	7- In your opinion, who is responsible for the water issue? 8-Who is accountable for mitigating the water issue? and Why?	Water-sustainability - is a topical subject …. 9-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 10-What is your organisation doing to mitigate the water issue? and Why? 11-If any, what water-sustainable practices does the organisation perform? 12-Who does the organisation water-sustainable practices	Obviously, UN -sustainable development Agenda for 2030 …….is a topic of current interest ….. 15-What is the organisation understanding of the UN -sustainable development Agenda for 2030? 16-If any, what are your priority SDGs? 17-In your opinion, how does this /those SDGs adequately address the water issue? why? 18- How can the organisation contribute towards the attainment of agenda 2030, specifically this/ those SDGs? 19-Thank you, is there anything else you would like

				impact? 13- How does the organisation water-sustainable practices impact stakeholders? 14- What are the challenges faced regarding mitigating the water issue?	to discuss?
Government	Obviously, your ministry is responsible for ……. 1- Can you tell me about the significance of water for the national economic, social and environmental development? 2-What is the water states in Jordan? 3-If any, what issues does Jordan- face regarding the water states? 4-What are your priority water- issues in Jordan?	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 5-In your opinion, what causes the cleaner water and sanitation issue? 6- Who is impacted by the cleaner water and sanitation issue? 7-How does the cleaner water and sanitation issue impact stakeholders?	8-In your opinion, who is responsible for the cleaner water and sanitation issue? 9-Who is accountable for mitigating the cleaner water and sanitation issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 10-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 11- What is your institution doing to mitigate the cleaner water and sanitation issue? Why? 12- What are the challenges	Obviously, UN -sustainable development Agenda for 2030 …….is a topic of current interest ….. 13-What is your understanding of the UN - sustainable development Agenda for 2030? 14-What are your priority SDGs in Jordan? 15- What is your understanding of SDG 6 cleaner water and sanitation? 16-In your opinion, how does SDG 6 adequately address the water issue?

				faced regarding mitigating the cleaner water and sanitation issue?	why? 17- How can your institution contribute towards the attainment of SDG 6-cleaner water and sanitation? 18-Thank you, is there anything else you would like to discuss?
Second Sub-Research Question	What might be the challenges for relevant stakeholders regarding access to clean and sanitary water in Jordan?				
Participants /Themes	Water	Water issue	Accountability	Water sustainability	SDG6-Cleaner water and Sanitation
Non-Governmental Organization (NGOs)	Obviously, your institution is responsible for ……. 1- Can you tell me about the significance of water for the national economic, social and environmental development? 2-What is the water states in Jordan? 3-If any, what are the water issues in Jordan? Why do you think so?	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 5-In your opinion, what causes the cleaner water and sanitation issue? 6- Who is impacted by the cleaner water and sanitation issue? 7-How does the cleaner water and sanitation issue	8- In your opinion, who is responsible for the cleaner water and sanitation issue? 9-Who is accountable for mitigating the cleaner water and sanitation issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 10-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 11- What is your institution	Obviously, UN -sustainable development Agenda for 2030 …….is a topic of current interest ….. 13-What is your understanding of the UN -sustainable development Agenda for 2030? 14-What are your priority SDGs? 15- What is your understanding of SDG 6

	4- What are your priority water issues?	impact stakeholders?		doing to mitigate the cleaner water and sanitation issue? Why? 12- What are the challenges faced regarding mitigating the cleaner water and sanitation issue?	cleaner water and sanitation? 16-In your opinion, how does SDG 6 adequately address the water issue? why? 17- How can your institution contribute towards the attainment of SDG 6-cleaner water and sanitation? 18-Thank you, is there anything else you would like to discuss?
International Organizations	Obviously, your institution is responsible for ……. 1- Can you tell me about the significance of water for the national economic, social and environmental development? 2-What is the water states in Jordan? 3-If any, what are the water issues in Jordan? Why do you think so? 4- What are your priority	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 5-In your opinion, what causes the cleaner water and sanitation issue? 6- Who is impacted by the cleaner water and sanitation issue? 7-How does the cleaner water and sanitation issue impact stakeholders?	8- In your opinion, who is responsible for the cleaner water and sanitation issue? 9-Who is accountable for mitigating the cleaner water and sanitation issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 10-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 11- What is your institution doing to mitigate the cleaner water and sanitation issue?	Obviously, UN -sustainable development Agenda for 2030 …….is a topic of current interest ….. 13-What is your understanding of the UN -sustainable development Agenda for 2030? 14-What are your priority SDGs, specifically in Jordan? 15- What is your understanding of SDG 6 cleaner water and

	water issues?			Why? 12- What are the challenges faced regarding mitigating the cleaner water and sanitation issue?	sanitation? 16-In your opinion, how does SDG 6 adequately address the water issue? why? 17- How can your institution contribute towards the attainment of SDG 6-cleaner water and sanitation? 18-Thank you, is there anything else you would like to discuss?
Local Authority	Obviously, your municipality is responsible for ……. 1- Can you tell me about the significance of water for the municipality economic, social and environmental development? 2-What is the water states in the municipality? 3-If any, what are the water issues faced by the municipality? Why do you think so?	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 5-In your opinion, what are the causes of the water issue in the municipality? 6- Who is impacted by the water issue? 7-How does the water issue impact stakeholders?	8- In your opinion, who is responsible for the water issue? 9-Who is accountable for mitigating the water issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 10-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 11- What is your municipality doing to mitigate the water issue? Why?	Obviously, UN -sustainable development Agenda for 2030 …….is a topic of current interest, specifically the SDGs….. 13-What is your understanding of the UN - sustainable development Agenda for 2030? 14- In your opinion, what are the priority SDGs for Jordan? 15- What is your understanding of SDG 6 cleaner water and

	4- What are your priority water -issues?			12- What are the challenges faced regarding mitigating the water issue?	sanitation? 16-In your opinion, how does SDG 6 adequately address the water issue? why? 17- How can responsible and accountable bodies contribute towards the attainment of SDG 6-cleaner water and sanitation? 18-Thank you, is there anything else you would like to discuss?
Bedouin Tribes	Obviously, bedouin tribes constitute the vast majority of the population in Jordan. Furthermore, Badoni tribes are the water keepers in arid areas ……. 1- Can you tell me about the significance of water for you? In particular, how water constitutes an important element for you? 2-In your opinion, what is the water states in Jordan? 3-If any, what are the water	In Jordan, water issues - constitute a significant topic- area. Therefore, could you tell me…… 4- What are your priority water -issues? 5-In your opinion, what are the causes of the water issue? 6- How are you impacted by the water issue?	7- In your opinion, who is responsible for the water issue? 8-Who is accountable for mitigating the water issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 9-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 10- What are the responsible and accountable bodies doing to mitigate the water	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 11- In your opinion, how can these responsible and accountable bodies contribute towards water sustainability, specifically regarding cleaner water and sanitation? 12-Thank you, is there anything else you would like to discuss?

	issues you face due to the water states in Jordan? Why do you think so?			issue? Why?	
Farmers	Obviously, farmers utilise multiple natural resources to grow agriculture, such as water … 1- Can you tell me about the significance of water for you? In particular, how water constitutes an important element for you? 2-In your opinion, what is the water states in Jordan? 3-If any, what are the water issues you face due to the water states in Jordan? Why do you think so?	In Jordan, water issues - constitute a significant topic- area. Therefore, could you tell me…… 4- What are your priority water -issues? 5-In your opinion, what are the causes of the water issue? 6- How are you impacted by the water issue?	7- In your opinion, who is responsible for the water issue? 8-Who is accountable for mitigating the water issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 9-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 10- What are the responsible and accountable bodies doing to mitigate the water issue? Why?	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 11- In your opinion, how can these responsible and accountable bodies contribute towards water sustainability, specifically regarding cleaner water and sanitation? 12-Thank you, is there anything else you would like to discuss?
Townsmen	Obviously, you utilise water for multiple reasons….. 1- Can you tell me about the significance of water for you? In particular, how water constitutes an	In Jordan, water issues - constitute a significant topic- area. Therefore, could you tell me…… 4- What are your priority water -issues?	7- In your opinion, who is responsible for the water issue? 8-Who is accountable for mitigating the water issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 9-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 11- In your opinion,

	important element for your family? In relation to the water states in Jordan? 2-In your opinion, what is the water states in Jordan? 3-If any, what are the water issues you face due to the water states in Jordan? Why do you think so?	5-In your opinion, what are the causes of the water issue? 6- How are you impacted by the water issue?		meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 10- What are the responsible and accountable bodies doing to mitigate the water issue? Why?	how can these responsible and accountable bodies contribute towards water sustainability, specifically regarding cleaner water and sanitation? 12-Thank you, is there anything else you would like to discuss?
Woman	Obviously, women encompass 'water knowledge", due to their primary role of accessing, managing and sustaining water resources…… 1- Can you tell me about the significance of water for you? In particular, how water constitutes an important element in your family? In relation to the water states in Jordan? 2-In your opinion, what is the water states in Jordan? 3-If any, what are the water	In Jordan, water issues - constitute a significant topic- area. Therefore, could you tell me…… 4- What are your priority water -issues? 5-In your opinion, what are the causes of the water issue? 6- How are you impacted by the water issue?	7- In your opinion, who is responsible for the water issue? 8-Who is accountable for mitigating the water issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 9-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 10- What are the responsible and accountable bodies doing to mitigate the water issue? Why?	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 11- In your opinion, how can these responsible and accountable bodies contribute towards water sustainability, specifically regarding cleaner water and sanitation? 12-Thank you, is there anything else you would like to discuss?

	challenges you face due to the water states in Jordan? Why do you think so?				
Academics	Obviously, you're an expert in ……. thus, knowledgeable about …. 1- Can you tell me about the significance of water for the national economic, social and environmental development? 2-What is the water states in Jordan? 3-If any, what are the water issues in Jordan? Why do you think so? 4-In your opinion, what are the priority water issues in Jordan?	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 5-In your opinion, what causes the cleaner water and sanitation issue? 6- Who is impacted by the cleaner water and sanitation issue? 7-How does the cleaner water and sanitation issue impact stakeholders?	8- In your opinion, who is responsible for the cleaner water and sanitation issue? 9-Who is accountable for mitigating the cleaner water and sanitation issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 10-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 11- What are responsible and accountable bodies doing to mitigate the cleaner water and sanitation issue? Why? 12- In your opinion, what are the challenges faced regarding mitigating the cleaner water and sanitation issue?	Obviously, the UN - sustainable development Agenda for 2030 …….is a topic of current interest …. 13-What is your understanding of the UN - sustainable development Agenda for 2030? 14-In your opinion, what are the priority SDGs for Jordan? 15- What is your understanding of SDG 6 cleaner water and sanitation? 16-In your opinion, how does SDG 6 adequately address the water issue? why? 17- How can responsible and accountable bodies contribute towards the attainment of SDG 6-cleaner water and sanitation?

					18-Thank you, is there anything else you would like to discuss?
Journalist	Obviously, your institution is responsible for ……. 1- Can you tell me about the significance of water for the national economic, social and environmental development? 2-What is the water states in Jordan? 3-If any, what are the water issues in Jordan? Why do you think so? 4- in your opinion, what are the priority water issues in Jordan?	Cleaner water and sanitation -is an important issue in Jordan. Therefore, could you tell me…… 5-In your opinion, what causes the cleaner water and sanitation issue? 6- Who is impacted by the cleaner water and sanitation issue? 7-How does the cleaner water and sanitation issue impact stakeholders?	8- In your opinion, who is responsible for the cleaner water and sanitation issue? 9-Who is accountable for mitigating the cleaner water and sanitation issue in Jordan? and Why?	Water-sustainability - is a topical subject …. 10-What is your opinion on water sustainability, specifically cleaner water and sanitation? which is meeting the needs of the present without compromising the ability of future generations to meet their own cleaner water and sanitation needs. 11- What are responsible and accountable bodies doing to mitigate the cleaner water and sanitation issue? Why? 12- What are the challenges faced regarding mitigating the cleaner water and sanitation issue?	Obviously, UN -sustainable development Agenda for 2030 …….is a topic of current interest ….. 13-What is your understanding of the UN - sustainable development Agenda for 2030? 14- In your opinion, what are the priority SDGs for Jordan? 15- What is your understanding of SDG 6 cleaner water and sanitation? 16-In your opinion, how does SDG 6 adequately address the water issue? why? 17- How can responsible and accountable bodies contribute towards the attainment of SDG 6-cleaner water and sanitation?

					18-Thank you, is there anything else you would like to discuss?

3346 Appendix Ⅳ Textual Sources and Analysis -Corporate Narrative

Extractive Organisations A-*Potash*									
Text	Text-Descriptive	Genres	Motives/Interests	Actions	Agent	Audience	Context	Corporate Narrative	Corporate Narrative-Descriptive
Annual Statement	The extractive organisation collaborates to address water shortages with the national government. Therefore, the extractive organisation finances a water-supply solution, which focuses on water-harvesting.	Sustainable Development, Water, Local community, SDG 6-Cleaner water and Sanitation	First, addressing the drinking water -needs of local communities in the southern regions of Jordan. The second, addressing the water -need for irrigation in agriculture. Third, supplementing the organisations' water -needs in the industry.	Financing a water-supply solution.	Extractive organisation	Local community, agricultural farmers.	Personalized	Responsibility	The extractive organisation – statements entail providing goods and services (economic responsibility), as well as returning to the national and local community (social and environmental responsibility)
Annual Statement	The extractive organisation highlights adherence to national law, as well as affiliative association. Therefore, the extractive organisation	Sustainable Development, Environment, Water, SDG 6-Cleaner water and Sanitation	To sustain the environment natural resources. Thereby mitigating physical water risk.	Financial Contribution-Philanthropy	Extractive organisation	Environment	Personalized	Commitment	The extractive organisation – statements intend to demonstrate consistency between discourse and social practice. That is, the statements demonstrate consistent compliance with

	philanthropic pursues of environmental responsibility through donations towards environmental protection, water and sanitation. Furthermore, extractive organisation mentions environmental-risk audits.								both mandatory and voluntary standards of institutions. Furthermore, statements of reference to membership with associations.
Annual Statement	The extractive organisation discloses adherence to national and international environmental standards and regulations. Thereby, the extractive organisation maximizing efficiency and minimizing the environmental impact.	Sustainable Development, Environment	To maximizing efficiency and minimizing the environmental impact.	Following national and international environmental standards and regulations. That is, adopting sustainable environmental practices.	Extractive organisation	Local community, Environment, Water - resources	Impersonalized	Compliance	The extractive organisation – statements entail adhering to laws, legislation, and regulations of institutions, such as local, and national institutions. However, statements might also- entail adhering to international standards institutions. Therefore, the organisation narrates a forefront perspective towards

									sustainable development (SD). Thereby, the statement entails going beyond compliance.
Annual Statement	The extractive organisation discloses natural -environmental calamity, thereby afore majeure affecting local communities and the natural environment.	Environment Local community	Risk assessment	Minimize and Mitigation of risk	Extractive organisation	Environment, Local community	Impersonalized	Transparent	The extractive organisation – statements entail consultation with stakeholders. Thereby, the statement establishes a relationship of openness, honesty and trust with stakeholders. Furthermore, the statement adheres to the standards of reputable membership associations. Therefore, the statements entail reporting standards, such as the GRI.
Annual Statement	The extractive organisation discloses water sustainable practices as cost-effective, as well as less harmful	Environment	Cost-effective practices and solutions.	Adopting water sustainable practices and solutions.	Extractive organisation	Environment, Local community	Personalized	Strategic	The extractive organisation – statements convey the 'good –business sense' regarding economic practice, as well as social and

	to the environment.								environmental practices. Thereby the statement having befits between the organisation, as well as society and the environment.
CSR report	The organisation discloses environmental-water expenditures, because of water depicting an economic good, as well as environmental and social responsibility.	Environment, Water	Mitigating physical water risk, as well as gaining a social license to operate (SLO)	Financial Contribution-Philanthropy	Extractive organisation	Local community, Environment, Water - resources	Personalized	Accountable	The extractive organisation – statements convey a commitment to stakeholders socio-economic, and environmental values. Furthermore, the statement conveys a deep- feel of responsibility towards stakeholders.
CSR report	The extractive organisation narrates the knowledge of sustainable development. Furthermore, the extractive organisation utilises the knowledge to support its process and practices.	Sustainable Development, Environment, Water	Best –practice	Water sustainable practices, such as resue and recycle. In addition, financial Contribution-Philanthropy	Extractive organisation	Local community, Environment, Water - resources	Impersonalized	Knowledgeable	The extractive organisation-statement demonstrates awareness and understanding of 'novel'-'progressive' ideas, concepts and initiatives. Therefore, the statement demonstrates a forward perspective,

									thereby moving beyond compliance.
Extractive Organisations B- *Phosphate*									
Annual Statement	The extractive organisation narrates the requirement to conserve through the water-related practice, especially local community water- resources.	Sustainable Development, Environment, Water	To maximizing efficiency, and reduce expenses, as well as compete in the international market.	The adopting of water–supply sustainable practices.	Extractive organisation	Local community, Water - resources	Impersonalized	Responsibility	The extractive organisation – statements entail providing goods and services (economic responsibility), as well as returning to the national and local community (social and environmental responsibility)
Annual Statement	The organisation discloses environmental-water expenditures, because of water depicting an economic good, as well as environmental and social responsibility.	Sustainable Development, Environment, Water, SDG 6-Cleaner water and Sanitation	To sustain the environment natural resources. Additionally, mitigation of physical water-risk	Financial Contribution-Philanthropy	Extractive organisation	Environment	Personalized	Commitment	The extractive organisation – statements demonstrate consistency between discourse and social practice. That is, the statements demonstrate consistent compliance with both mandatory and voluntary standards of institutions. Furthermore, statements of reference to membership with associations.

Annual Statement	The extractive organisation narrates the adoption of water-related practices from the supply side. However, the organisation explains that the water-related practices maximizing efficiency, and reduce expenses, as well as gains entry into the international market.	Environment, Water	To maximizing efficiency, and reduce expenses, as well as compete in the international market.	The adopting of water–supply sustainable practices.	Extractive organisation	Local community, Environment, Water - resources	Personalized	Strategic	The extractive organisation – statements convey the 'good –business sense' regarding economic practice, as well as social and environmental practices. Thereby the statement having befits between the organisation, as well as society and the environment.

3355 Appendix V First Observation Record: National Government

Conference- Title: Water-SDG Conference				**Date: 17th of July 2019**
Time	**Context**	**Agent**	**Communicative Action**	**Narratives**
10:00-10:10	Welcoming Speech	**RSS**-Water and Environment Institute	In the speech, water was established as a significant natural resource for the sustainability of individuals, industries and the country. Furthermore, the conference highlighted the water scarcity issue in Jordan. To resolve the issue, the conference focused on 'treated water', due to the lack of underground water, as well as the reliance on raining water in Jordan. As a result of the scarcity of water, the conference emphasised that 'treated-water' permits sustainable 'water resources', specifically for the growth of agriculture -underdeveloped industry. Additionally, the speech emphasised the water scarcity issue, due to climate change, environmental -nature, socio-economic and geopolitical circumstances. As a result, the external -factors caused the reduction in water-dam reserve levels. An important point to mention, the speech highlighted the highly salt-level content in water provisions, specifically in the south of Jordan. The speech emphasised that lack of water resources signifies a primary challenge/issue, particularly for the economic development of industries. As a result, the speech addressed the notion of sustainable development- Bruntland report definition. In conclusion, the speaker highlighted that 'treated-sewage water' would provide a water-sustainable solution for the sustainable development/ growth of under-development industries, specifically agriculture.	Water scarcity Sustainable solution External Environment-factors Sustainable development
10:10-10:20	RSS Speech - Water and Environment Institute	**RSS** -Vice President of Consulting and Studies [redacted]	In the speech, the speaker introduces the collaboration on the 'treated water' project between the Royal Scientific Society (RSS), as well as the [redacted] (funder) and the International water management institute (IWMI). Furthermore, the speaker highlights the importance of the 'treated water' project -as a sustainable solution for the water issue. The 'treated water' projects encompass pillars of environmental, social and economic development. Subsequently, the speaker mentions the role of the Royal Scientific Society (RSS) in addressing the national issue – water scarcity. To address the national issue, the Royal Scientific Society (RSS) embraces and implements the sustainable solution, thereby endeavouring towards the path of sustainable development (SD). In detail, the 'treated water' project -timeline (30 weeks) across two areas in the south of Jordan. Furthermore, the partners intend to study the impact of 'treated water' on social -health, economic-employment, and environmental- soil and climate change. To implement this project, the speaker highlighted the importance of aligning the goals and objectives of the participants. Moreover, the speaker emphasised the importance of multiple stakeholders -participation, such as governmental	Collaboration Sustainable development Engagement

			ministries, local communities, universities, and farmers. Finally, the speaker highlights the accountability of RSS by referring to institutions -leader and vision. Therefore, the RSS institution continuously endeavours towards sustainable development, particularly to meet Jordanians current and future needs. An important point to mention, the speaker communicated the accountability of the RSS towards the water issue.	Collaboration Accountability
10:20-10:30	A brief introduction of "Sustainable and safe usage of treated' wastewater' in the WANA region: Regional Perspective"	**IWMI**-Regional President [redacted]	In the speech, the speaker highlighted an escalating increase in population, which caused an increase in production to meet present needs. Subsequently, these factors have caused a decrease in water provisions. Furthermore, the IWMI has classified Arab countries as -arid areas. Therefore, Arab countries lack 'drinking' water provisions to meet present and future needs, such as Jordan. For instance, Arab access 500m^2 per year. Thus, Arab access less than the average individual, which is 1000m^2. Thereby, Arab countries suffer from natural resources -poverty, specifically 'drinking' water. To resolve the issue, the treatment of wastewater provides a sustainable solution, which could be utilised for irrigating agriculture. Furthermore, the speaker highlighted supplementary sustainable solutions, such as the treatment of industrial, high-salt, sewage, and seawater. Therefore, IWMI water-sustainable projected endeavours to mitigate the water scarcity issue. The IWMI intends to embrace untraditional methods or sustainable solutions. Thereby, IWMI endeavours to contribute towards SDG 6 cleaner water and sanitation, particularly IWMI intends to expand the sustainable and safe usage of 'treated wastewater'. • The wastewater treatment -project started in 2018 and ends in 2021. An important point to mention, the speaker emphasises the partnership with RSS. Furthermore, the speaker highlighted that the wastewater treatment -project – is founded on 'stakeholder engagement'. Thereby, stakeholder collaborates and engage in the decision -making processes, such as water ministry, water and irrigation ministry, environment ministry, health ministry, and local communities. The wastewater treatment -project – a water sustainable -solution, such as usage of natural water- resources. Thus, IWMI endeavours to facilitate safe usage of water- resources. IWMI developed a 'knowledge-resource book' at the local, national, and regional.	Sustainable development Sustainable solution SDG 6 cleaner water and sanitation Partnership

			The focal focuses on the wastewater treatment -project – is the local statues. For instance, the lack of rain and underground water in Jordan. Furthermore, escalating usage of water, especially agriculture -underdeveloped industry. In addition, the IWMI presents the results of the wastewater treatment -project in the Science Forum Dialog -encompassing decision-makers, such as the Arab council and FAO. Therefore, IWMI would be able to exchange experience, thereby generate recommendations. Another important point mention, the IWMI emphasised the woman's role in contributing to water-sustainable solutions. Therefore, the IWMI 'stakeholder engagement' encompassed women. Finally, the speaker emphasised that treated 'wastewater' does not pose a threat. However, wastewater could be utilised as a sustainable solution for water issues in Jordan.	
10:30-10:40	Water and Irrigation Ministry-General Secretary Speech	**Water and Irrigation Ministry-[redacted]**	In the speech, the speaker highlighted 'stakeholder engagement', specifically in the decision-making process. Furthermore, the speaker mentioned the partnership and collaboration with stakeholders, such as the IWMI and RSS. In Jordan, the speaker emphasised the criticality of the water scarcity issue. Therefore, the water provisions are suffering due to water scarcity, specifically under-ground water. Thereby, the speaker emphasized the importance of water-a sustainable solutions, specifically for the agriculture industry. In doing so, the speaker suggested water-sustainable solutions, such as desalination of underground water, water-harvesting, expanding dams, and wastewater treatment in Jordan. Thereby, the wastewater treatment - project that would reduce the financial burden in Jordan- cost-saving or cost-efficient project. For the water and irrigation ministry, the speaker mentioned the issue – of identifying renewable water resources in Jordan. In Jordan, water is essential for the sustainment of citizens, agriculture and industry. For instance, the ministry treated wastewater, which accounted for (166 million m^2) in 2018. From the treated wastewater, the ministry reused (150 million m^2), thereby 90%.	Partnership Collaboration Water scarcity Sustainable solution

			Furthermore, the speaker mentioned the water challenges in Jordan, such as the eco-political water agreements, environmental typography, refugee crisis.	External Environment-factors
11:00-11:50	"Sustainable and safe usage of treated 'wastewater' in the WANA region: The case study - SDG 6 cleaner water and sanitation in Jordan	**RSS**-Water and Environment Institute [redacted]	Technique presentation on the Sustainable and safe usage of treated 'wastewater' in the WANA region: The case study – Jordan.	Sustainable solution
11:15-12:15	Debate -Reuse of reclaimed wastewater in light of climate change and water scarcity: A strategic choice to achieve both water and food security in Jordan? Or wastewater	**RSS**-Water and Environment Institute [redacted]	The presenter displayed different samples of water in front of the audience, such as wastewater, treated water, dam water, canal water among others. The presenter then asked the audience, which water sample would your choice? The audience selected treated wastewater.	Sustainable solution
		Guest: [redacted] - General Secretary in the ministry of water and irrigation	• Main laws and specifications: 1- The laws and regulations are clear- specifically on wastewater reuse, as well as expansion sewage network. 2- The laws and regulations are clear – specifically on domestic wastewater - treatment (2007/893). 3- National strategy.	

	should be disposed of?	[redacted] - Vice President of the RRS, Research and Consultation unit	• Main -points on wastewater treatment: 1-The RSS manages and monitors the research studies, projects and programs, particularly the wastewater treatment. a. Therefore, the RSS encompasses equipment for testing water from different sources. 2-Furthermore, researching through: a. Expanding the project to collaborate with international organisations. b. Studying the impact of treated wastewater on agriculture in RSS. 3- Finally, conducting research on the impact of fertilisers, pesticides among others…	
		[redacted] - International Centre for agricultural research in Dry Areas.	• Main points: 1-The project -contribution is the study of the 'long-term' effect of wastewater treatment. 2- Jordan- is located in the middle of the region, which treats wastewater for multiple purposes. 3-The motivation for treating wastewater is water scarcity. Thereby, scarcity of water resources. 4- 'Trade-off' between reusing water and efficient use of water.	
		[redacted] General Manager of the Farmers Union in Jordan.	• Main points: 1-The project -contribution is the study of the 'long-term' effect of wastewater treatment. 2- Jordan- is located in the middle of the region, which treats wastewater for multiple purposes. 3-The motivation for treating wastewater is water scarcity. Thereby, scarcity of water resources. 4-'Trade -off' between reusing water and efficient use of water.	
		[redacted] - General Secretary in the ministry of water and irrigation	• The ministry of water and irrigation focuses on the farmers, specifically their water needs.	

		[redacted]- International Centre for agricultural research in Dry Areas.	• Main points: 1- Fair-Equal distribution /water allocation between industries in Jordan. 2- The agriculture industry is a significant industry. However, allocating 'freshwater' to agriculture is a 'wrong decision'. 3- Therefore, we should rationalise -agriculture, such as growing low-volume or less-water intense plants. 4- An alternative- would be desalination, although costly. 5- The agriculture industry -is weak. Furthermore, abuses its position.	
12:15-13:30	Workshop Discussions	Stakeholders	Group 1: Treated Wastewater. -Challenges- • The most important challenge – is the farmer acceptance to utilise treated wastewater. • Lack of environmental awareness in Jordan. • The un-safe and illegal use of treated wastewater by farmers. • High Human and operational cost. • Maintains and renovation of sewage network. • The refusal of countries to import agriculture irrigated by treated wastewater. -Solution- • Raising environmental awareness-the importance of using treated wastewater. • Building capabilities and skills- for treated wastewater, types of agriculture, and types of irrigation. • Proper and correct advertisement for treated wastewater. • Engaging the private sector – in the water issue Group 2: a methodology for safe utilisation of wastewater • Identifying standards and regulation for treated wastewater. • Identifying best practices for treated wastewater • Intensifying preventative -measure for treated wastewater. • Raising awareness of farmers regarding 'best practices' for utilising treating wastewater. • Focusing on efficient irrigation, specifically on utilising of treated wastewater. • Focusing on raising awareness in governmental school on utilising of treated wastewater.	

			Group 3: Distribution of responsibility -strengths- • Articulating a clear vision and responsibilities. • Identifying clear standards and regulations. • Identifying water agreements between the ministry of water and irrigation and agriculture ministry. • Continues improvement of water standards and regulations. -weakness- • A lack of clarity in procedures regarding water quality. • A lack of information exchange between ministries.	

3356

Appendix VI Second Observation Record: Extractive Organisation Mining and Extractive Operation

Record of Observation		
Time: 19th of August 2019		
Extractive Organisation A- Potash	**(Un)sustainable practices**	**Reflection**
Observation 1	Dry Process- Large evaporation pond	The researcher observed that large evaporation pond, which causes the loss of 'limited' water resources.
Observation 2	Pumping, treating, heating and/or cooling water systems, which are often large water and energy consumers.	The researcher observed that detrimental amount of 'limited' water utilised for mineral extraction and processing.
Observation 3	Reuse of water in cooling water systems	However, the researcher observed the water reused to cool –down the temperature of the machines. Thereby, the extractive organisation adopts sustainable water practices.
Observation 4	Direct disposal of tailings into the water body.	The researcher observed the industrial water re-pumping into a water body.
Observation 5	Flotation, the most common separation process for minerals.	The researcher observed that detrimental amount of 'limited' water utilised for mineral extraction and processing. Furthermore, the industrial water produced by floatation, which requires recycling.
Observation 6	Grinding and screening valuable from the non-valuable minerals.	The researcher observed the crushing and screening through the utilisation of water of minerals. By doing so, the organisation produces effluent water.
Observation 7	Reuse of water in dust scrubbing and suppression.	The researcher observed the reuse of water for extractive and mining operation. However, the practice might entail the loss of water.
Observation 8	Effluent recycled to the flotation thickener.	The researcher observed the recycling of industrial water after floatation. Thereby, the extractive organisation adopts sustainable water practices.
Observation 9	Water Source: water harvesting dams	The researcher observed the large water sources, which hold a large capacity of water.

Time: 1st of September 2019		
Extractive Organisation B- Phosphate	**(Un)sustainable practices**	**Reflection**
Observation 1	Wet Process- Large washing ponds	The research observed large capacity pond utilised for washing of raw-mineral from impurities. Therefore, the researcher deduced that the organisation utilises a large amount of 'limited' water.
Observation 2	Pumping, treating, heating and/or cooling water systems, which are often large water and energy consumers.	The researcher observed that detrimental amount of 'limited' water utilised for mineral extraction and processing.
Observation 3	Reuse of water in cooling water systems	However, the researcher observed the water reused to cool –down the temperature of the machines. Thereby, the extractive organisation adopts sustainable water practices.
Observation 4	Direct disposal of tailings into the valley.	The research observed the industrial water disposal into a valley. However, the industrial water was utilised by local -framers to grow agriculture. Furthermore, the water-assisted in growing small bosh -forest.
Observation 5	Flotation, the most common separation process for minerals.	The researcher observed that detrimental amount of 'limited' water utilised for mineral extraction and processing. Furthermore, the industrial water produced by floatation, which requires recycling.
Observation 6	Grinding and screening valuable from the non-valuable minerals.	The researcher observed the crushing and screening through the utilisation of water. By doing so, the organisation produces effluent water.
Observation 7	Reuse of water in dust scrubbing and suppression.	The researcher observed the reuse of water for extractive and mining operation. However, the practice might entail the loss of water.
Observation 8	Water Source: underground water well	The researcher observed a large number of water sources, although hold a small capacity of water.

Appendix VII Third Observation Record: Stakeholders Water Provisions

Local Community	Time	Water insufficiency	Water Mismanagement	Water Mislocation	Reflection
Farmers	18th of Aug. 2019	Topography Climate change and fluctuation High evaporative Low precipitation Un-natural and natural population growth	**Administrative and technical issues** Unaccountable water Intermitted water-supply Water cross-contamination	Lack of observation, due to the nature of the issue. (e.g. water withdraw by agriculture and mining industry)	With regards to water insufficiency, the researcher observed the drought, due to the desert topography of Jordan. Furthermore, the researchers observed the number of young family members. In terms of water mismanagement, the researcher observed that farmers utilise large - amounts of water for agriculture irrigation. However, the researcher observed the discontinued water -supply due to droughts. As a result, farmers purchase water tanks. Furthermore, cross-contamination might occur from treated wastewater. With respect to extractive and mining operation, the researcher observed the disposal of industrial water, as well as farmers dependence on industrial water for irrigation.
Townsmen	3rd of Sept. 2019		**Administrative and technical issues** Unaccountable water Water and Sewage network Illegal water use/ disposal Water overdraft Intermitted water-supply Water cross-contamination **Extractive and mining operation** Water consumption, contamination and loss		As a national, the research has observed and experienced water insufficiency. With regards to water mismanagement, the researchers observed the broken pipes, which caused the loss of water, namely unaccountable water. Furthermore, the research observed illegal withdraw from hidden water-wells. The townsmen relay on water resources pumped 'once' a week by the government. Otherwise, townsmen would have to purchase water tanks for the house-hold. With respect to extractive and mining operation, the researcher observed the withdraw of 'limited' water resources in the local –area.
Bedouin Tribes	23rd of Aug. 2019		**Administrative and technical issues** Unaccountable water Water and Sewage network		As a tribe- member, the research has observed and experienced water insufficiency. Furthermore, the research comprehends sustainable water practices utilise to 'rationalise' utilisation of limited water

			Illegal water use/ disposal Water overdraft Intermitted water-supply Water cross-contamination		resources. For example, irrigation of camels and sheep, sustainable withdraw of water resources and rationalising water consumption. With respect to extractive and mining operation, the researcher observed semi-nomadic individual provided with water from by an extractive organisation.
Woman	3rd of Sept. 2019		**Administrative and technical issues** Unaccountable water Water and Sewage network Water overdraft Intermitted water-supply Water cross-contamination		As a woman, the researcher observed participants water sustainable practice, such as reuse of water utilised for washing dish for cleaning the floors of households. Furthermore, the research has observed participant selectively choosing to utilise water due to the availability of water 'once' a week. With respect to extractive and mining operation, the researcher observed the withdraw of water.

3377 Appendix VIII SDG 6 Sustainable Water-Related Practices

Accountability	**Stakeholders**			**Expectation**		**Sustainable Water-Related Practices**	**SDG 6-Targets & Indicator**
				Interest	**Issues**		
Top	**Industry**	Extractive Organisation A-Arab Potash Company (APC)	Senior Management Employees	-Sales- generation, -Revenue- distribution, and -Profits - wealth creation -Contribution to National GDP -Operational Cost -Physical Water- Risk -Financial Risk -Reputational Risk -Regulative Risk -Compliance with environmental regulation and legislation -Relationship with Local Community	Water Scarcity *Topography* *Climate change and fluctuation* *High evaporative* *Low precipitation* *Un-natural and natural population growth* *Political unrest-* *Political water agreements* Water Mismanagement *Unaccountable water* *Intermitted water-supply* *Water and Sewage network*	Water Management Plans & Strategy -identifying water sources -identify water-consumption, contamination, and loss spots -understand the inflow and outflow of water boundaries -evaluate water quantity and quality Reduce water tailing storage facilities (TSF) or tailing ponds through a slurry pipeline Reduce surface -area of evaporation ponds. Reuse of water in dust scrubbing and suppression. Reuse of water for cooling equipment and systems.	SDG 6.5.1 SDG 6.5.2 SDG 6.4.1 SDG 6.4.2

						Recycle through water treatment plants on extractive and mining sites. Recycle through desalination plants on extractive and mining sites.	
		Extractive Organisation B- Jordan Phosphate Company Mines PLC (JPMC)	Senior Management Employees	-Sales- generation, -Revenue- distribution, and -Profits - wealth creation -Contribution to National GDP -Operational Cost -Financial Risk -Physical Water- Risk -Reputational Risk -Regulative Risk -Compliance with environmental regulation and legislation -Relationship with Local Community	Water Scarcity *Topography* *Climate change and fluctuation* *High evaporative* *Low precipitation* *Un-natural and natural population growth* *Political unrest-* *Political water agreements*	Water Management Plans & Strategy -identifying water sources -identify water-consumption, contamination, and loss spots -understand the inflow and outflow of water boundaries -evaluate water quantity and quality Reduce water tailing storage facilities (TSF) or tailing ponds through a slurry pipeline Reuse of water in dust scrubbing and suppression. Reuse of extraction and mining pits as sand- storage dams. Reuse of water for cooling equipment and systems.	SDG 6.5.1 SDG 6.5.2 SDG 6.4.1 SDG 6.4.2

						Recycle through water treatment plants on extractive and mining sites.	
	Secondary	**Government**		-Use, availability, and depletion of non-renewable natural -resources -Use and depletion of 'limited' water resources. -Compliance with environmental regulation and legislation - Taxes and Royalties. -Investments in the local community, such as education, employment, and health. -Investment in environmental protection, including ethical investment and funds for post-closure rehabilitation.	Water Scarcity Water Mismanagement *Administrative and Technical issues* *Extractive and Mining Operation*	Water productivity: -Underground Water Conservation Alternative Water Sources, i.e grey or blackish water-wastewater -Wastewater treatment -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells - Expanding Capacity Water sufficiency: -Rationalizing water use -Water recharging in the ecosystem Water management: - Sustainability plans	SDG 6.3.1 SDG 6.3.2 SDG 6.4.1 SDG 6.4.2 SDG 6.6.1 SDG 6.5.1
	Secondary	**Non-Governmental Organisation (NGOs)**		-Use and depletion of 'limited' water resources -Health and safety of the local community, explicitly, availability, cleanness, and	Water Scarcity Water Mismanagement *Administrative and Technical issues*	Water productivity: -Underground water Conservation Alternative Water Sources, i.e grey or blackish water-wastewater	SDG 6.3.1 SDG 6.3.2

			sanitation of water.	Water Misallocation	-Water decoupling -Wastewater treatment -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells - Expanding Capacity Water sufficiency: -Water Recharge -Water Recycling Institutional: **Revisiting Water Governance** -Conflict of issues and interest -Lack of risk factor -Long term planning -Trade-off between supply and demand	SDG 6.4.1 SDG 6.4.2 SDG 6.5.1
	Secondary	**International Organizations**	-Use and depletion of 'limited' water resources -Health and safety of the local community, explicitly, availability, cleanness, and sanitation of water.	Water Scarcity Water Mismanagement *Administrative and Technical issues* Water Misallocation	Water productivity: -Underground water Conservation Alternative Water Sources, i.e grey or blackish water-wastewater -Wastewater treatment -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells	SDG 6.3.1 SDG 6.3.2 SDG

					Water sufficiency: -Rationalizing water use -Water recharging Water management: - Sustainability plans	6.4.1 SDG 6.4.2 SDG 6.5.1
	Primary	**Local Authority**	-Use and depletion of non-renewable natural -resources -Use and depletion of 'limited' water resources -Externalities of the extractive mining operation, such as biodiversity loss. -Investments in the local community, such as education, employment, and health among others. -Investment in environmental protection and post-closure rehabilitation.	Water Scarcity Water Mismanagement *Administrative and Technical issues* *Extractive and Mining Operation* Water Misallocation	Water productivity: -Underground water Conservation Alternative Water Sources, i.e grey or blackish water-wastewater -Wastewater treatment -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells - Expanding Capacity Water sufficiency: -Water Recycling	SDG 6.3.1 SDG 6.3.2 SDG 6.4.1 SDG 6.4.2
Bottom	Primary	**Bedouin Tribes**	-Use and depletion of 'limited' water resources	Water Scarcity	Water harvesting: Re-purposing mining -pits as sand dams Using natural landscape to engineer surface or underground reservoir	SDG 6.4.1 SDG 6.4.2
	Primary	**Farmers**	-Use and depletion of non-	Water Scarcity Water Mismanagement	Water productivity -Underground water Conservation	SDG 6.3.1

			renewable natural -resources -Use and depletion of 'limited' water resources -Externalities of the extractive mining operation, such as biodiversity loss. -Investments in the local community, such as education, employment, and health among others. -Investment in environmental protection and post-closure rehabilitation.	*Administrative and Technical issues*	Alternative Water Sources, i.e grey or blackish water-wastewater -Industrial water treatment for irrigating agriculture - crop -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells - Expanding capacity	SDG 6.3.2 SDG 6.4.1 SDG 6.4.2
	Primary	**Townsmen**		Water Scarcity Water Mismanagement *Administrative and Technical issues* *Extractive and Mining Operation* Water Misallocation	Water productivity -Underground water Conservation Alternative Water Sources, i.e grey or blackish water-wastewater -Industrial water treatment for irrigating agriculture - crop -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells - Expanding capacity	SDG 6.3.1 SDG 6.3.2 SDG 6.4.1 SDG 6.4.2
	Primary	**Woman**		Water Scarcity Water Mismanagement *Administrative and*	Water productivity -Underground water Conservation	SDG 6.3.1 SDG 6.3.2

				Technical issues *Extractive and Mining Operation*	Alternative Water Sources, i.e grey or blackish water-wastewater -Industrial water treatment for irrigating agriculture - crop -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells - Expanding capacity	SDG 6.4.1 SDG 6.4.2
	Secondary	**Academics**	-Use and depletion of non-renewable natural -resources -Use and depletion of 'limited' water resources -Health and safety of the local community, explicitly, availability, cleanness, and sanitation of water.	Water Scarcity Water Mismanagement *Administrative and Technical issues* *Extractive and Mining Operation* Water Misallocation	Water productivity -Underground water Conservation Alternative Water Sources, i.e grey or blackish water-wastewater -Industrial water treatment for irrigating agriculture - crop -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells Water sufficiency: -Water Recharge -Water Reclamation -Water Recycling	SDG 6.3.1 SDG 6.3.2 SDG 6.4.1 SDG 6.4.2
	Secondary	**Journalists**	-Use and depletion of non-renewable natural -resources -Use and depletion of	Water Scarcity Water Mismanagement	Water productivity: -Underground water Conservation	SDG 6.3.1 SDG

			‘limited’ water resources -Health and safety of the local community, explicitly, availability, cleanness, and sanitation of water.	*Administrative and Technical issues* Water Misallocation	Alternative Water Sources, i.e grey or blackish water-wastewater -Wastewater treatment -Desalination Water harvesting: - Water harvesting dams - Water harvesting wells Water sufficiency: -Rationalizing water use -Water recharging Water management: - Sustainability plans	6.3.2 SDG 6.4.1 SDG 6.4.2 SDG 6.5.1

3378

3379

3380