

A MULTI-STAKEHOLDER APPROACH TO RISK MANAGEMENT, CORPORATE
SUSTAINABILITY COMMUNICATION, AND RISK PERCEPTION: THE CASE OF
TULLOW OIL IN GHANA

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DISSERTATION ABSTRACT

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Title: A Multi-Stakeholder Approach to Risk Management, Corporate Sustainability Communication, and Risk Perception: The Case of Tullow Oil in Ghana

In the West African country Ghana, which has a history of poor natural resource management, discovery of offshore petroleum resources in 2007 and subsequent commercial production in 2010 (with British multinational Tullow Oil as lead operator) is a potential source of potential wealth *and* inequality. Using the Cultural Theory of Risk, Social Amplification of Risk Framework, and the Corporate Sustainability Framework — a proposed model—as theoretical foundations, this dissertation examines corporate sustainability practices, communication, and their implications for local residents’ risk perceptions, corporate reputation, and risk management. The study also assesses how cultural worldviews and informational networks (e.g., an environmental group, opinion leaders, and media) amplify or attenuate residents’ risks perceptions.

Data were collected via interviews with key actors including a non-governmental organization (NGO), a survey of a representative sample of Half Assini residents in one of the six coastal districts that adjoin Ghana’s offshore petroleum region, and analyses of Tullow’s corporate social responsibility (CSR) reports and other communication texts. Extant worldview and corporate reputation measures were also developed/adapted and tested.

The study finds support for the view that cultural *worldview* and *affect* are associated with public risk perceptions. Thus, individuals who (a) do not subscribe to the worldview that government ought to regulate corporate behaviors, (b) show a relatively high sense of attachment to their communities, (c) rate the images associated with Ghana's offshore oil production favorably, and (d) rate the images associated with Tullow Oil positively are more likely to be worried that Ghana's offshore oil production poses significant risks for the country and their local communities. Regarding corporate sustainability communication, the study observes that Tullow uses a predominantly technical, expert-driven approach, which seeks to discursively position it as an aspirational, engaged, and responsible organization. While critiquing Tullow's corporate sustainability and communication approach, the research also argues that corporate sustainability (CSR and risk) communication has the potential to *constitute* desirable corporate practices and could ultimately culminate in meaningful social change. Theoretical contributions to risk perception, risk management/communication, corporate reputation, and CSR communication are discussed. Practical implications for advocacy, corporate practices, and public participation in environmental decision-making are discussed.

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CHAPTER I

INTRODUCTION

After many years of prospecting for petroleum resources, Ghana finally found offshore oil and gas in commercial quantities in 2007. The oil discovery was met with excitement and expectation —with the government, mass media, and general public being optimistic —that the country’s economic fortunes are about to change for the better. Three years after the discovery, oil production commenced. Despite the unbridled optimism and excitement that accompanied this new discovery, Ghana has a history of poor natural resource management. Resource-rich communities have been devastated by the harmful environmental, economic, and social impacts of mining and lumbering, and yet have benefited the least from such resource exploitations. As Garvin, McGee, Smoyer-Tomic, and Aubynn (2009) observe, although the gold¹ mining industry, significantly contributes to Ghana’s national economy, the benefits are not evenly distributed among rural mining centers and urban centers. For example, while the major centres reap “the greatest benefits of mine employment,” due to the low level of education and lack of skills in smaller towns and rural areas where the mines are located, the companies make limited use of local labour (p. 572). In addition, the exploiting of such natural resource have often displaced local residents and caused environmental problems such as land degradation, cyanide and mercury pollution, dust pollution, and noise

¹The mining industry, accounts for about seven percent of Ghana’s GDP and is one of the largest contributors to government revenue and corporate income tax, 27.6 and 38.3 percent respectively in 2011. After South Africa, Ghana is the second largest gold producer (and exporter) in Africa. In fact, gold accounts for 90 percent of Ghana’s mining sector’s contributions to the economy (Aryee, 2012).

pollution (Kumah, 2006). They have also culminated in social disruptions and conflicts (Hilson & Yakovleva, 2007).

Social and Environmental Impact Assessment Versus Public Views

Despite this history, in Ghana's burgeoning offshore oil and gas industry, whether or not there are *serious* risks is contested. While the Social and Environmental Impact Assessment (SEIA) prior to the commencement of commercial oil production says there is minimal risk, civil society groups and fishermen believe otherwise. This is a source of potential agitation and strife.

Giving the 2010 devastating explosion of British Petroleum's offshore oil rig that spilled over three million barrels of crude oil into the Gulf of Mexico, the experiences of Ghana's neighbouring countries such as Nigeria and Congo with oil resources, and Ghana's own poor record in natural resource exploration and management, it is evident that petroleum drilling and production industry is not risk-free.² For example, although the Social and Environmental Impact Assessment (AfDB, 2009) acknowledges that the offshore petroleum production activities would have some impacts on deep water fish species present in the operation area, it proposes no mitigation measures. Instead, it concludes that this was a "positive impact of minor significance" (p. 15). Similarly, the assessment agrees that sea vessels could collide with marine mammals and turtles, but it concludes that the "the overall... residual impact [of the oil exploration activities] on marine mammals is ... of minor significance" (p. 15). Regarding operational discharges, the assessment states that: "The water depth, distance offshore, and hydrography provides

² The Environmental Impact Assessment was conducted prior to the commencement of petroleum production also agrees that there are no risk-free levels of the production activities, although it downplays the environmental, social and economic risks.

high level of dilution and dispersion of any discharges” (AfDB, 2009, p. 15). Other concerns such as drilling wastes, non-routine discharges, atmospheric pollutants (such as carbon monoxides, nitrogen oxides, and sulfur oxides, all of which have the *potential* to impact air quality), the emission of green house gases, onshore waste disposal, and oil spill risk were all assessed to be of “moderate,” “minor” or “no” significance. Despite the position of the SEIA that there are minimal risks, public reactions manifested in some news reports about negative impacts of the offshore oil and gas industry suggests otherwise.

The Current Study

The current study therefore conducts an inquiry into popular perceptions of the societal risks associated with the oil industry, what might be the predictors of such perceptions, and corporate actions and processes that address or exacerbate the risks. Studies on risk perceptions and communication have advanced different theoretical arguments regarding the antecedents of the perceptions that people hold about risks. One such explanation is cultural cognition, which functions within two broad frameworks: Douglas and Wildavsky’s (1982) Cultural Theory of Risks and the psychometric paradigm of risk perceptions (Slovic, 2000). The cultural cognition thesis proposes that people perceive risks in ways that affirm their cultural values (Kahan, 2012; Kahan, Braman, Slovic, Gastil & Cohen, 2009). Writing on “public expertise” as a foundation for citizen participation, Kinsella (2004, p. 83) articulates what could be seen as capturing the central axiom of the Cultural Theory and public attitudes toward environmental health issues: energy and environmental issues in general and energy in particular are among the

most consequential in our contemporary “risks society” — a concept that was developed by Ulrich Beck (1992). As Kinsella (2003, p. 83) observes,

[environmental and energy issues] are also among the most contested. As sites of ... ‘public moral argument’ and ... ‘moral conflict,’ these issues are marked by deep disagreements among stakeholders with divergent *values* and *rationalities*... Public moral argument often collapses into a narrow conversation dominated by technical expertise. The diversity of strongly held perspectives makes common ground difficult to achieve, *leading participants to converge on technical rationality as the only widely accepted form of argument* (emphasis added).

Although scholars have found support for the cultural cognition thesis (Kahan, 2012), which is a contemporary variant of the Cultural Theory, their studies have been mainly conducted in the United States and Europe using two orthogonal cultural dimensions, individualism and hierarchy, as predictors of public (dis)agreement on environmental issues. Individualism is measured using items that relate to attitudes toward government, and hierarchy is measured with items that relate to attitudes toward social orderings and norms – mainly gender and race relations. Despite the evidence that one’s orientation to individualism and hierarchical social orderings as defined by these studies is a good predictor of risk perceptions (Kahan, 2012), cultures differ on attitudes and foundational cultural values beyond market orientation, role of government, and race and gender relations. As Kahan (2013) acknowledges, for cultural worldview scales to successfully capture group-based dispositions that underpin contestations over societal risks, such measures *must* successfully “capture variance in the motivating risk-perception dispositions in a more discerning manner” (para. 11). In essence, individualism and hierarchy *measures* used by proponents of cultural cognition are unlikely to successfully detect the underlying cultural dimensions that could serve as the bases for risk perceptions

and attitudes in other cultures. Attempts at replicating the findings of the cultural cognition thesis using the scales that have been found to be reliable in the United States have proven unsuccessful in Canada and parts of Britain (Kahan, 2011, personal communication). For a historically different and culturally diverse society such as Ghana, it is reasonable to think that the cultural cognition measures used in the United States are unlikely to be useful predictors of risk perceptions. Since there is no scale for non-Western cultures, the question that arises is: Are there culturally relevant dimensions in Ghana (and by extension, other non-Euro-American societies) that predict risk perceptions in a manner consistent with the cultural cognition thesis? There is only one current ongoing systematic effort by Paul Richards to develop a similar scale for Liberia and Sierra Leone to explain how cultural values shape their attitudes to objective risk issues (Richards, 2012; personal communication).

Despite that this study is being conducted within the Cultural Theory of Risk framework, its conceptualization and execution is within the psychometric paradigm (discussed in the literature review section), using the cultural cognition thesis, which is a peculiar perspective on the Cultural Theory. Proceeding from the assumption that there are social, economic and environmental risks and benefits associated with petroleum production activities, this research addresses four overarching questions: (1) What is Tullow Ghana Limited doing to minimize harm and enhance benefit in all three areas of sustainability — natural, social, and economic environment — and what is it saying? (2) What do residents of communities near the oil region perceive, and to what extent do their cultural orientations underlie those perceptions and attitudes? (3) What is the role of informational networks in individuals' risk perceptions? (4) Do people's perception about

the corporate responsibility practices of Tullow Ghana Limited influence their perception of risks?

The dissertation therefore examines the economic, social, and environmental risk perceptions among residents of six coastal districts surrounding Ghana's oil region — the Jubilee Fields offshore Cape Three Points. It extends the cultural cognition thesis beyond the United States and Western cultures by identifying dimensions (other than “individualism” and “hierarchy”) that are sensitive to Ghanaian cultural nuances. Although studies have been conducted within the Social Amplification of Risk Framework (SARF), little attention has been paid to the implications of informal networks for risk attenuation or amplification (National Consortium for the Study of Terrorism, 2012). Besides examining how the cultural values of residents predict their risk perceptions, based on the SARF, this study also examines the role of informal networks in risk attenuation and/or amplification. Since corporate processes and activities could attenuate or amplify risk perceptions (Pidgeon, Kasperson & Slovic, 2003), the research analyzes corporate sustainability practices and the communication of those practices in the industry (conceptualizing corporate actions as communication *sui generis*), using Tullow Ghana Limited as a case study. The next section provides a brief overview on Tullow Ghana Limited, the petroleum industry in Ghana, and the general socio-cultural context.

Tullow Ghana Limited, the Petroleum Industry, and the Ghanaian Sociocultural Milieu

Tullow Ghana Limited, a subsidiary of Tullow Oil PLC, is the operator and largest shareholder of the Jubilee Field (36.5%), where commercial oil production commenced in 2010. The Jubilee Field bestrides two major blocks — West Cape Three Points and Deepwater Tano. The company owns a majority interest in the Deepwater Tano block (49.95%), and the second largest interest (26.4%) after Kosmos Energy Ghana in the West Cape Three Points block. Other major players in the industry include Kosmos Energy, Anadarko Petroleum Corporation, Sabre Oil & Gas, EO Group, and the Ghana National Petroleum Corporation (GNPC), which represents the government of Ghana's 10% carried interest in the Jubilee Field and various offshore blocks.

Tullow Oil PLC, the parent company of Tullow Ghana Limited, is a United Kingdom-based oil and gas exploration, development and production company with interests in major oil fields in Africa, Europe, South Asia and South America (Tullow Oil, 2012). It commenced operations in eight countries in the 1980s and now operates in 22 countries. According to Aidan Heavey, Founder and CEO of Tullow PLC, the company was established primarily due to his interest in untapped petroleum resources in Africa. Although established in Tullow (Ireland), about 35 miles south of Dublin, its first production license was acquired in Senegal in 1986/7 (Tullow Oil, 2013). As Tullow Oil recounts, it was later that it extended its operations to the United Kingdom, Spain, Italy, and Yemen. Its other past operations in Africa include Egypt and Côte d'Ivoire in the 1990s. In 2004, the company doubled in size, which it attributes to its acquisition of

Energy Africa, a major boost for its portfolio. A year later, Tullow made a discovery in Gabon and another in Mauritania. In 2006, it made five discoveries in Uganda.

Tullow and Oil Exploration in Ghana

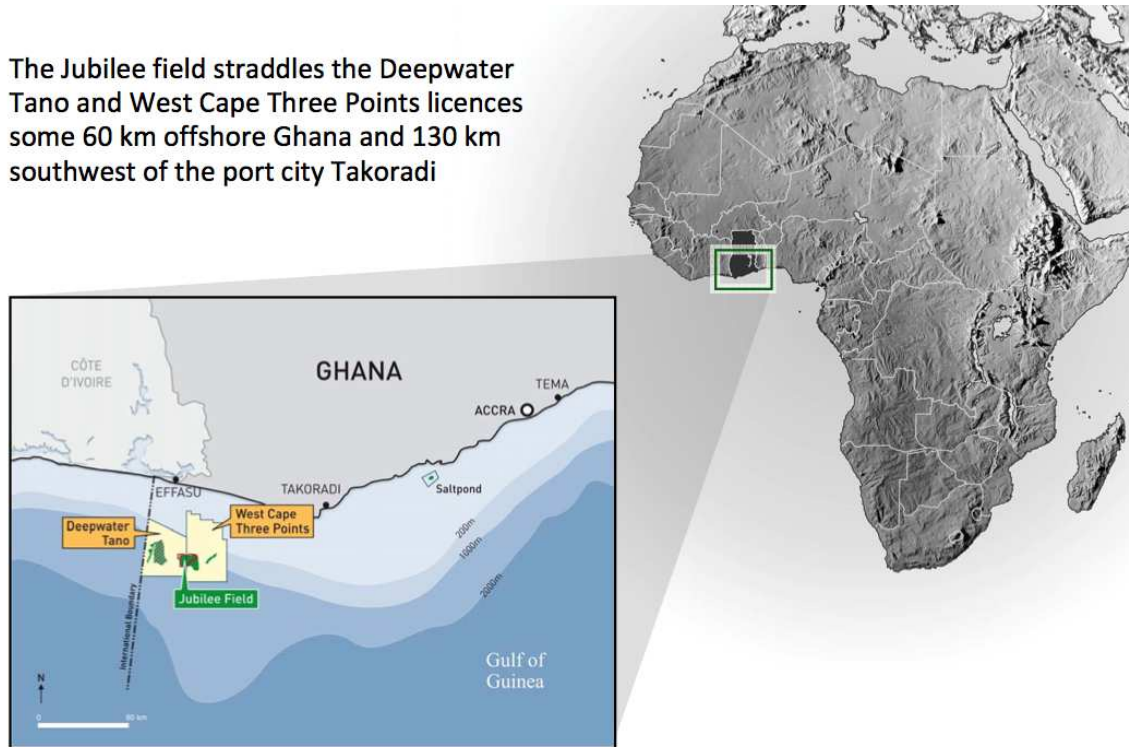
In June 2007, Tullow made what it describes as its “largest ever discovery” in the Jubilee Field, 75 miles offshore southwestern Ghana (Tullow Oil, 2013). This has been followed by several other discoveries in the area, creating a major oil province with two main fields — Deepwater Tano and West Cape Three Points. The Jubilee field, which is currently under operation straddles the Deepwater Tano and West Cape Three Points. This is visually represented in Figure 1.

Within a record time of three years from discovery, commercial oil production in Ghana commenced in the last quarter of 2010. Although the fast pace of oil resource development means accelerated inflows of cash resources for the country’s socioeconomic development, it is also a source of worry because regulatory institutions and other frameworks were not fully in place before oil production commenced. (See Figure 2 for a timeline of oil exploration and production events.) For example, it was a year after oil production began that regulatory mechanisms such as the Petroleum Revenue Management Act 2011, the National Petroleum Authority Act 2012, among others were passed. The ‘premature’ regulatory environment that this high-risk industry was developed in points to this project’s merit, not only as an intellectual exercise, but one that has implications for policy and advocacy.

Figure 1

The Jubilee Oil Field

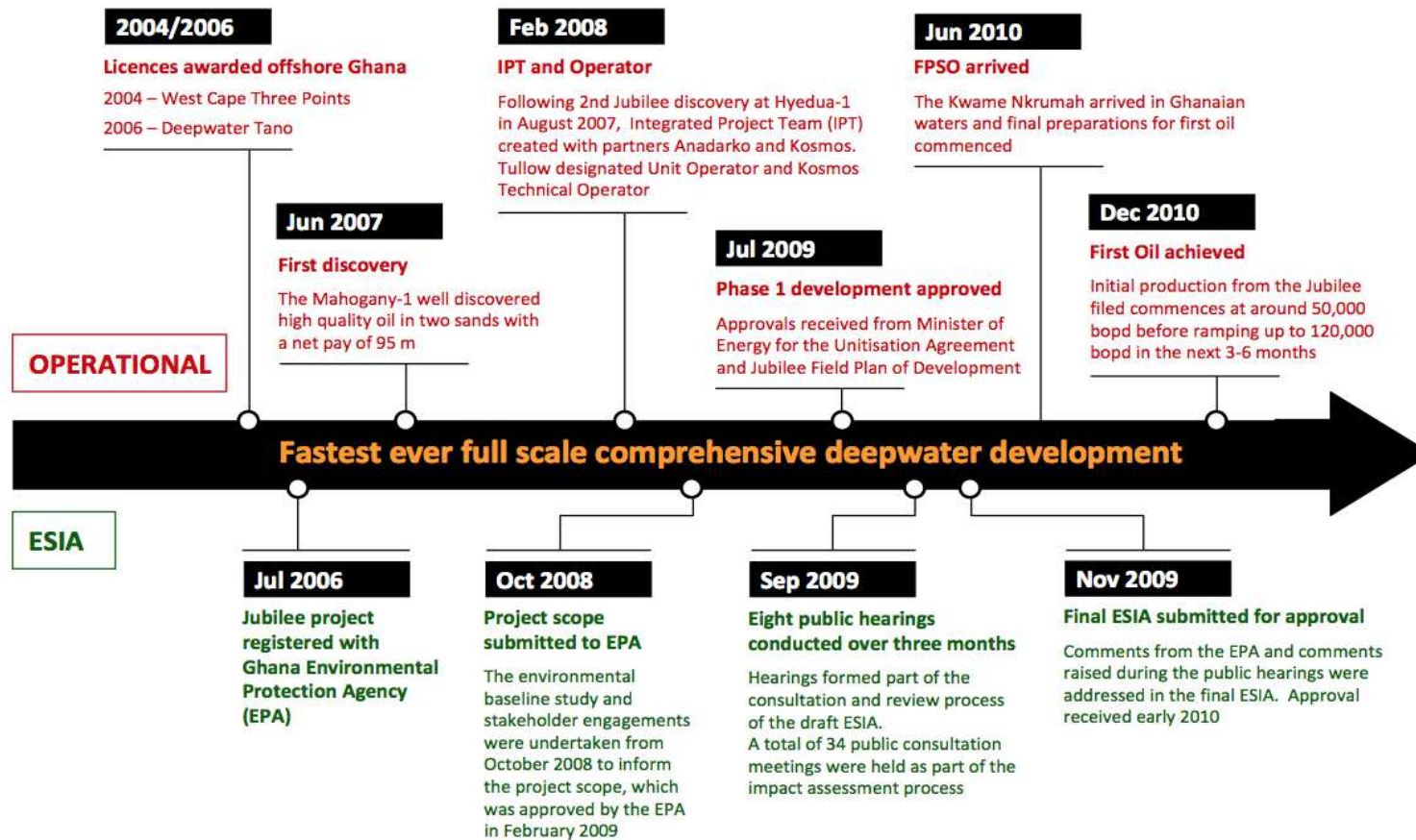
The Jubilee field straddles the Deepwater Tano and West Cape Three Points licences some 60 km offshore Ghana and 130 km southwest of the port city Takoradi



Source: Tullow Ghana Limited

Figure 2

Jubilee Field Project Development Timeline



Source: Tullow Ghana Limited

The Oil Region in Ghana

Ghana's current oil production activities are within close proximity to the Western Region, one of the country's 10 administrative regions. The Western Region is endowed with other natural resources such as gold, bauxite, manganese, timber, cocoa, etc. — all major foreign exchange earners for the country — but it is one of the poorest regions of the country. In view of this, during the first years of petroleum production, traditional rulers in the Western Region demanded that 10 percent of oil revenue be paid to them as royalties to ensure that residents benefit from the oil wealth, since they are the ones who would bear the negative consequences of petroleum drilling and production; more so than residents of other regions of the country.

This demand by the chiefs ought to also be looked at within the Ghanaian socio-cultural context. Families, clans, chiefdoms, and kingdoms own most land in Ghana, and traditional rulers hold such land in trust for the people. However, article 257(6) of the Ghanaian 1992 Constitution vests the ownership of all mineral resources on any land and water body in the President on behalf of the people of Ghana. In simple terms, traditional rulers are the legal and constitutional custodians of land resources, but natural resources on and within the land are 'owned' by the state, with the President as the custodian.

Under the country's local government system, district/municipal/metropolitan assemblies (headed by District/Municipal/Metropolitan Chief Executives) are responsible for the day-to-day political administration of the districts. Out of the 18 districts in the Western Region, six of them — Shama, Ahanta West, Jomoro, Nzema East, Ellembelle, and Sekondi-Takoradi are closest to the offshore oil region than all other districts and are

therefore likely to experience social, environmental, and economic impact of oil production.

According to Ghana's 2010 population census, 41.3 percent of the Ghanaian population aged 15 years and older are engaged in agriculture and fishery-related economic activities (Ghana Statistical Services, 2012). The service (including sales) sector employs 21 percent of the working population while 15.2 percent are craft workers. This national dynamic is true for the Western Region. There are no official figures for district assemblies. However, based on the researcher's first hand knowledge of the study site, residents of Shama, Ahanta West, Jomoro, Nzema East, Ellembelle, and Sekondi-Takoradi Districts are involved in fishing-related activities (men go to sea; women sell and fresh and smoked fish), farming, trading, or service-related activities.

Giving that about four in 10 people are engaged in fishery-related economic activities, as Ghana's 2010 Population and Housing Census data indicates, the potential for offshore oil production activities to curtail the livelihoods of a significant proportion of people is apparent. This is because portions of the open-sea where fisher folks used to engage in commercial fishing activities have been cordoned off, implying that the area available for fishing has been reduced. Some fisher folks believe that the use of very bright lights around the oilrig attracts schools of fishes to the rig (Peprah, 2012). However, since fishing activities not allowed within some distance from the rig, their fish harvests have been significantly curtailed. This claim may be contested but for the residents of these fishing communities, petroleum production activities pose economic risks for them. Besides the putative economic risks posed for residents here, fishing nets could easily get entangled in oil drilling equipment, and could lead to life threatening

situations.

With the exception of the more cosmopolitan Sekondi-Takoradi, majority of the residents of the other five districts are mainly indigenous Nzemas, Ahantas, and Fantes. The three ethnic groups, like most Akan groups have a matrilineal system of inheritance, which implies children, inherit property from their mothers' lineage, but not from their fathers'.³ Traditionally, in this system of inheritance, for example, "fathers could not devolve their land to their sons, but only to their sisters' sons or other eligible males of their own maternal kin" (La Ferrara & Milazzo, 2014, p. 1). People's attitudes toward and preferences for systems of inheritance are possible cultural dimensions that could relate to risk perceptions. This was explored during the scale development process.

Significance of the Research

There is intrinsic scientific value in exploring the cultural and social underpinnings of the risks associated with offshore oil production in Ghana, while the industry is at its infant stage. This project, the first of its kind, serves as a baseline study for the mapping of risk perceptions as Ghana's oil industry further develops.

Theoretical and Conceptual Contributions

Apart from Paul Richard's ongoing effort to develop a cultural cognition scale for Liberia and Sierra Leone, there is essentially no systematic application of the cultural

³ Due to modernity, this customary practice has changed significantly. To prevent situations where the death of a wealth father impoverished children, an interstate succession law (PNDC Law 111) was passed which somehow ensures that all children— whether in a matrilineal system or not—are entitled to some of their parents' assets.

cognition thesis in Africa (Richards, 2012; personal communication)⁴. This is the case despite the African anthropological origins (see Douglas, 1963; 1966; 2003) of the broad postulates that laid the foundations of the grid-group theory, now the Cultural Theory of Risk. Over two decades ago, Rayner (1992) asserted that Wildavsky and Dake's (1990) empirical study on the Cultural Theory of Risk marked a shift from a theory based on anecdotes to one founded on empirical research, this shift has not occurred in the application of the theory in African contexts. While the Cultural Theory has been applied in some form, such studies are often descriptive anthropological accounts of how cultures (very often based on religion) in some African societies perceive or engage in risk behaviors (see, for example, Richards, 1999; Grätz, 2003).

Ergo, the cultural cognition scale developed and used in this dissertation is a significant contribution to the cultural cognition thesis, as it applies the theory outside of its current American-European focus. The research shows the promise the cultural cognition thesis has for research in African contexts. Thus, it further expands the Cultural Theory's applicability to other cultures, and the scale will be useful for subsequent research.

The theoretical convergence of the Social Amplification of Risk Framework (SARF) and the cultural cognition thesis also yields useful insights, including demonstrating the complementarity of sociocultural and psychological mechanisms in

⁴ As part of his currently ongoing cultural cognition scale development process, Richards is testing a version of Kahan's cultural cognition scale — with items that he presumes are sensitive to local cultures in Liberia and neighboring Sierra Leone— among gold miners (and others) on the edge of the Gola forest. Initial data analysis found statistical support for factor loadings on one of the cultural dimensions (i.e., the patrimonial dimension). Richards is, however, yet to find support for items on the egalitarian/sectarian dimension. Since, they have not been able to “find the right agreement/disagreement triggers to capture robustly this (or any other) aspect of local [cultural] dispositions,” (Richards, 2012; personal communication), he is generating additional items for testing.

shaping risk perceptions and attitudes. Although SARF has been used extensively, studies within this framework have paid little attention to the implications of informal networks for risk attenuation or amplification. Database searches for this dissertation found only two studies on informal networks and risk (see Behrman, & Watkins, 2007; Scherer, & Cho, 2003). But these earlier studies have only examined the diffusion of risk perceptions through social networks, and not how these networks interact with the complex socio-cultural milieu to shape perceptions. This dissertation's analysis of both formal and informal networks also contributes to expanding and further grounding the SARF.

The corporate sustainability component of this project contributes to the literature in this area in four ways: (a) It isolates and demonstrates how perceived corporate sustainability could influence risk perceptions. (b) It unravels the social, economic and environmental impact that petroleum production in Ghana is having on local residents, as well as what Tullow Ghana Limited (the operator of the oil field) is doing and saying to mitigate these effects in order to maximize the general well-being of residents. In this regard, it problematizes the scientific-technical orientation that clearly manifests in Tullow's approach to corporate sustainability. And it demonstrates the potential of corporate sustainability communications to *reproduce* dominant structures and at the same time *transform* (Fairclough, 1992; Leitch & Motion, 2009) them (albeit partially). (c) It conceptualizes responsibility and risks as two sides of the same 'coin.' (d) It proposes a Corporate Sustainability Framework (CSF) as a useful framework that should be used in analyzing and understanding corporate sustainability issues. This framework, which is founded on the normative idea of sustainable development (Adams, 2006; Brundtland Commission Report, 1987), combines the Stakeholder Theory with Issues

Management Theory (see Chapter II and VII). From this, a link is observed between Stakeholder Theory, risk communication, and issues/crises management. Stakeholders, acting as communication or information networks, play an important part in reputational risk management, especially at the risk prevention stage. Creating more expansive communication (not just information) networks are important for organizations to successfully *collect* and *make sense* of risk information. As Coombs (2009) puts it, “wider networks collect more information and make the evaluation of [...risks] more accurate and effective” (p. 101). In other words, having a narrow stakeholder orientation as opposed to a broad stakeholder view could diminish an organization’s ability to effectively manage risks: not just reputational but also societal. The logic in linking Stakeholder Theory to environmental, health, technological risks management (at the societal level) is that:

The peculiar character of the rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exist in concentrated or integrated form, but sole as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess (Hayek 1945: 519)⁵.

Although Hayek’s original arguments pertained to economic theory, this assertion parallels this dissertations’ arguments regarding risks and corporate responsibility. Thus, adopting a multi-stakeholder approach—which does not privilege centralized corporate and institutional knowledge—to corporate sustainability and risk management is useful for business effectiveness in the form of corporate reputation and profitability. More

⁵ Although Hayek’s original arguments pertained to economic theory, this quote parallels this dissertations’ arguments regarding risks and corporate responsibility. Thus, adopting a multi-stakeholder approach (which does not privilege centralized corporate and institutional knowledge) to corporate sustainability and risk management is useful not only for business effectiveness (in the form of corporate reputation or profitability). More importantly, it ensures that the interests of local communities, consumers, NGOs, and the natural environment are not sacrificed.

importantly, it ensures that the interests of local communities, consumers, NGOs, and the natural environment are not sacrificed.

Practical Contributions

The dissertation also has some practical applications. What is learned about corporate responsibility practices and rhetoric could also provide useful lessons for public policy, advocacy, risk and conflict management, as well as corporate practices. In view of the petroleum-induced inequality and conflicts in the Niger Delta Region of neighbouring Nigeria, understanding the dynamics of Ghana's nascent industry would help stem any such possible strife and at the same time provide an empirical basis for demanding greater responsibility and accountability from the petroleum industry. Since reports in Ghanaian media and findings from the current study suggest that residents in the communities surrounding the oil region are articulating sentiments reminiscent of the Nigerian example (high expectations, high disappointment), and the fact that petroleum production is a low-probability high-impact industry, documenting and analyzing the bases of the burgeoning negative reactions is a necessary requirement for deliberations, public policy, community engagement efforts, and consensus building while we demand accountability from industry players. This two-pronged approach to resource-based conflict prevention would ultimately contribute to a more peaceful and safer regional and global environment.

This study suggests that a constitutive perspective of corporate sustainability (i.e., CSR and risk issues) holds promise for policy advocacy and agenda setting. It demonstrates the potential for corporate sustainability communication to produce social change — desirable socio-ecological risk management. The constitutive view of CSR and

risk communication suggests that discourse reproduces “the relations between people, the identities of individuals and organizations, and the social structures” and it may also “transform the same identities, relations and structures” (Leitch & Motion, 2009, p. 562-56). Thus, if communication can transform actions and behaviors then CSOs, advocacy groups, and media should *publicly* engage Tullow and its partners, forcing them to communicate, thereby diminish the likelihood that the CSR discourse would merely reproduce routine corporate practices that have little public policy benefits. The more Tullow is made to talk, the more they open themselves up for scrutiny, which in turn would beget corporate accountability and responsibility. Thus, this research proposes that CSR and risk communication—in the long term —would culminate in greater corporate responsibility and accountability.

For community mobilization purposes, to ensure popular participation, CSOs stand to benefit if they would pay attention to the worldview orientations that makes people pay attention to and want to advocate for higher corporate sustainability standards and performance.

There are also some practical lessons for Tullow Oil, its partners, and other similar corporations. If indeed Tullow is genuinely interested in reducing or mitigating its impact on the environment and local livelihoods, then *open* sustainability communication should be seen as a necessary part of this aspiration. It is both an ethical and strategic imperative. As stated regarding advocacy organizations, from a constitutive perspective, the more Tullow talks about its corporate sustainability, the more likely it is for *some* change to take place. While open and transparent communication is desirable, there is a caveat to be made: being responsive to stakeholder expectations, interests, needs, inputs does not

always translate to being responsible. Responsiveness is a democratic ideal, but not a sufficient condition for change. Crane, McWilliams, Matten, Moon, & Siegel (2008) make a similar point that, “We cannot ... presume that the ability to integrate critical stakeholders into mutually binding dialogues, to respect their voices, to listen to their concerns, and to respond their demands, and so on, *automatically* represents a spirit of true responsibility” (p. 500-501).

Still, regarding lessons for Tullow Oil, since there is a link between risk, issues, and crises at both societal and organizational levels, what Robert Heath calls the risk-issues-crises triangle (Coombs & Holladay, 2011; Heath, 1997; Heath & O’Hair, 2010), no risk perception ought to be treated as trivial or irrational. (Of course organizations do not have unlimited resources and therefore need to prioritize which issues to address. But the basis of such prioritization should not be based on an *a priori* rightness of technical views.) The risk-issues-crises triangle suggests that issues when poorly managed pose a risk to the organization and in this case the public as well, which could lead to crisis for both. Similarly, risks that are not properly managed could result in crises, from which other issues would emanate. And issues can lead to crises, posing further challenge for managing risks: environmental, political, social, and financial. Therefore, Tullow Oil would be missing out a great deal if it does not adopt a more expansive definition of risks and sustainability to include non-technical concerns that are steeply rooted in people’s daily (but also historical) experiences — their habitus. An expansive approach would be a more useful issues management, stakeholder management and relationship building, and sustainable development tool; it captures a broader range of risks, which a technical risk assessment tends to ignore.

Organization of the Dissertation: Chapters Outline

This study draws on a number of theories and interdisciplinary literatures to understand the corporate behavior (including communication) in the Ghanaian petroleum industry, and the socio-cultural influences that are brought to bear on public attitudes, perceptions, and judgments regarding the risks and benefits associated with the industry. The rest of this document develops as follows:

Chapter II: Theoretical Framework and Literature Review

This chapter discusses the theoretical frameworks for the research design and execution. It also examines relevant empirical studies, while pointing out the gaps in the literature that the dissertation seeks to fill. This is followed by the research questions.

Chapter III: Research Methods

This chapter is a discussion and justification of the research strategy and techniques, including study setting, population, samples, research instruments, data collection, and analyses.

Chapter IV: Thinking and Talking about Risks and Corporate Sustainability

The fourth chapter is a presentation of research finding and analyses on risk perceptions, including the predictors such as culture, formal and informal networks, risk characteristics, and corporate responsibility. This chapter also presents results from the scale adaptation/development and testing.

Chapter V: Risk Information, Communication, Attenuation, and Amplification Stations

This chapter presents results on which risk-related information networks provide residents with the most information about Ghana's offshore oil production. The chapter also includes results on how these information networks, especially NGOs and news media are framing the corporate sustainability issues in the oil industry.

Chapter VI: Corporate Sustainability Communication

This chapter is a presentation results on how Tullow Oil is talking about environmental health risks, its responsibility and actions, corporate sustainability, and its stakeholders, as beneficiaries and/or partners. These results are generated from the analyses of press releases, news reports pertaining to the subject, and Tullow Ghana's annual nonfinancial corporate responsibility reports.

Chapter VII: Discussion and Conclusion

In this chapter, I interpret the results and discuss their implications for theory, policy, public deliberation, corporate responsibility, and issues management. In addition, limitations of the project are discussed.

CHAPTER II

THEORETICAL FRAMEWORK AND LITERATURE

In this chapter, the researcher discusses theoretical perspectives on risk perception, risk communication, and corporate social responsibility that underpin this study.

Naturally, a study that seeks to understand public perceptions of the societal risks that might accompany petroleum production activities (on one hand) and corporate sustainability practices and how these practices are communicated (on the other hand) demands a broad range of theoretical perspectives. Since no single theory fully explains public risk perceptions (Krimsky & Golding, 1992), and in view of the observation that studies on risk perceptions should draw on multiple theories (Decker, Evensen, Siemer, Leong, Riley, Wild, Castle, & Higgins's, 2010), this study employs a convergence of three theoretical frameworks. The first is cultural cognition, a conceptualization of Mary Douglas' (1963, 1996) Cultural Theory of Risk. The second is the Social Amplification of Risk Framework (SARF) (Kasperson, Renn, Slovic, Brown, Emel, Goble, & Ratick, 1988; Pidgeon, Kasperson & Slovic, 2003), a framework that can be seen as falling within the domain of Albert Bandura's social cognitive theory. The third conceptual building block of this study is corporate sustainability.

Overall, this project's study of environmental health and economic risks is grounded in the proposition that perception is an outcome of a series of psychophysical processes, which are defined and shaped by a sociocultural matrix (Rummel, 1975). Thus, what people experience as stimuli may differ from what is received in the brain as "perceptible," which may also differ from what they perceive, because as Rummel

observes, “perceptibles reach intuitive awareness through cultural schema and cultural systems of meanings-values” (p. 45).

In the next sections, the researcher reviews these theories in order to indicate where the study is situated within the interdisciplinary fields of risk communication, risk perceptions, and CSR communication. It commences by examining how the Cultural Theory of Risk (as originally proposed by cultural anthropologist Mary Douglas) has evolved from being a theory of society, to a theory of groups and institutions, to its current formulation as a theory of risk communication and risk perception, which focuses on the individual as a unit of analysis. In doing this, the researcher identifies existing conceptual and empirical gaps that this dissertation seeks to fill. The discussion on SARF observes the utility of combining cultural and social psychological perspectives on risk perceptions and attitude formation. The discussions of SARF also elucidate the importance of “amplification stations” such as news media and media personnel, opinion leaders, risk management institutions, and activist groups in judgment and decisions regarding risk concerns—in this case Tullow Ghana Limited’s offshore petroleum exploration and production. Regarding corporate sustainability (CS), this chapter proposes that CS as a conception of CSR combines development theory and more specifically, the normative notion of sustainable development, Stakeholder Theory, and issues management, with globalization as an overarching conceptual link. The aim here is to offer a holistic view from which corporate sustainability issues and risk perceptions could be addressed. Before discussing the theoretical framework, let us define the concept of risk and risk perception.

Defining the Concepts of ‘Risk’ and ‘Risk Perception’

Similar to public positions on environmental concerns, defining these two concepts —risk and risk perception — is contentious. They are conceptualized in a variety of ways. The different conceptualizations are not merely definitional; they come with their own set of assumptions about: (a) how risk can be observed and measured (i.e., epistemology), (b) what the consequences of the risks are, and (c) peculiar views on reality (see Renn, 1992). While some scholars, policy makers, and general public view ‘risk’ as something out there, waiting to be measured, others argue that it is socially constructed (Slovic, 1992). Bradbury (1989) distinguished between what he called risk as physical characteristics or attributes and risks as social constructions. Working from a sociological perspective, May (1989) also identified three ways of defining risk: cultural, individual choice, and systems approach. The first defines risk in terms of shared values, which implies phenomena that are often considered risky (or not risky) are underpinned by commonly shared values. From a systems perspective, risk is shaped by the organizational and social properties of ecosystems — technological and/or natural. An individual choice perspective views risk (of low probability, high consequence events) as defined by individual judgments made under uncertainty and limited information.

Despite the variety of perspectives and their attendant definitions of risk, they all have one thing in common — there is a difference between what is *real* and what is *possible* (Renn, 1992; Markowitz, 1991). This suggests that the concept of ‘uncertainty’ (although not always the case) and human agency are central to the concept of ‘risk.’ Conceptually, and philosophically, ‘risk’ connotes that human beings are neither fully in

control of the future nor fully helpless. Renn makes this point more precisely when he states that:

If the future is either predetermined or independent of present human activities, the term *risk* makes no sense... If one's fate is predetermined, there is no need for anticipating future outcomes other than to please one's curiosity, because negative consequences cannot be prevented" (p. 56).

To put this differently, if a hazard is inevitable (which means there is certainty it is going to happen) then the concept of risk becomes less meaningful or even redundant. Similarly, if we are 100 percent sure a hazard will not occur, the idea of 'risk' would make no sense. Therefore, based on Renn's distinction between *reality* and *possibility* (i.e., what currently pertains and what could happen), irrespective of what perspective one is working from, 'risk' refers to the possibility of an adverse effect occurring due to the natural occurrence or human omissions and/or commissions.

Depending on the context in which the term is employed, risk has three distinct meanings (Slovic, 2000). First, it can mean a *hazardous activity*. For example: "Diving from a mountain without the right gears is a serious risk." Secondly, it could mean a *negative consequence*. For example: "The risk of drunk driving is fatal accidents." And third, it could be used to simply refer to *probability*, an example of which is seen in the question, "What is the annual risk of child mortality?"

Conceptually, 'risk' is inherently both descriptive and normative. It links human actions to societal/individual outcomes, whether gains or losses. And it also denotes what can or *ought* to be done to abate or cope with such risks (Renn, 1992). For example, a mother who warns her toddler that it is "risky" to ride a bicycle without a helmet is saying

two things: (a) “You are *likely* to be *badly* hurt if you fall off your bicycle without a helmet,” and (b) “Please wear your helmet before riding your bicycle!” The first implicit statement speaks to the descriptive nature of the concept of ‘risk.’ The second implicit statement speaks to the normative nature of the concept. The foregoing example applies to other risk scenarios such as getting people to wear car seats, not to drive while drunk, properly dispose of their waste, not to fish near an offshore oil rig, not to negatively affect marine ecology, among other public policy concerns.

Similar to the concept of risk, ‘risk perception’ refers to the opinions people have about different technological, environmental, and health risks (Slovic, 1992). As both Slovic (1992) and Otway (1992) observe, ‘risk perception’ can be seen as a conceptual ‘invention’ that defies the traditional notion of perception. Rather than referring to the processing of sensory information, risk perception refers to how people process conceptual information. How people ‘perceive’ a technology, an issue, an activity, or a phenomenon transcends the probability or likelihood of an adverse effect occurring; it includes non-risk attributes of the technology or the activity that brings the risk (e.g., novelty, whether risk is known or unknown, etc.). Despite some risk researchers’ objection to the concept of risk perception (e.g., Otway, 1992), as being conceptually inaccurate, the concept has been well established and generated enormous research and useful policy insights.

Approaches to Studying Risk and Risk Perception

In the foregoing explanation of the concept of risk, it was observed that different conceptualizations come with their own set of assumptions about how risks can be

observed and measured, and what the consequences of particular risks are; both of which are underpinned by peculiar views of reality (Renn, 1992). Based on the assumptions analysts or researchers make about 'risk,' Renn identifies five approaches to studying risk and risk perception: technical, economic, psychological, social, and cultural risk analysis. This five-perspectives classification is a good reflection of the risk perception and communication field.

Technical risk analysis includes the engineering, actuarial and toxicology and epidemiology approaches, which mainly suggest that risks are objective phenomena that can be accurately perceived, measured, communicated, and managed. This approach underlies much of Tullow Oil's risk assessment and sustainability efforts. From this perspective, since an event, issue or phenomenon is either risky or not risky, experts can accurately measure how much risk is involved in an activity (i.e., oil exploration and production). Also, people's attitudes toward such events, issues, or phenomena are also thought to be measurable. This view is problematic because it superimposes the canon of objectivity on an otherwise fluid concept. In technical risk analysis, public disagreements about risks are often seen as resulting from laypersons' misunderstandings of risks. Renn's (1992) second risk approach is the economic view, which conceptualizes risk in terms of utility or value and therefore suffers from the general problem of utilitarianism. Thus, risks are assessed in terms of costs and benefits. The sociological approach(es) includes a broad range of sociological theories such as social mobilization theory, systems theory, and neo-Marxian views. The cultural approach, the fourth perspective (built on the work of British anthropologist Mary Douglas) sees risk perceptions as bounded by culturally determined group categories and values. The fifth perspective is the

psychological approach. This includes themes such as systematic biases and heuristics (e.g., Tversky & Kahneman, 1974; Slovic, 2000), portfolio theory (where diversification is used to spread risks), prospect theory which says people are usually risk averse when the likelihood of loss is thought to be high, and risk prone when the stake of gains is perceived to be high (Kahneman & Tversky, 1979). Other themes here include the view that contextual variables affect the perceived seriousness of societal risks. For example, risk characteristics such as catastrophic potential, control, whether the risk is known or unknown, etc. (Slovic et al., 1980; 1982) are good predictors of risk perception (high versus low) and risk acceptability. The psychometric paradigm is the label used to describe these psychological approaches collectively.

Despite the psychometric paradigm's often (mis)characterization as purely psychological, it does not limit its explanations of risk perceptions to individual psychological factors (Slovic, 1992). Psychological, social, cultural, and institutional factors interact to shape individuals' risk perceptions. In line with this is the view that risk perceptions, although subjective, can be measured using rating scales, attitude scales or risk scenarios. Therefore the psychometric paradigm is best seen as methodological or epistemological framework rather than a theory (Slovic, 2000). Let us now return to the discussion on the particular theories that underpin this study. The first is the Cultural Theory of Risk.

Cultural Theory of Risk

The Cultural Theory of Risk proposes that people's perceptions about putatively hazardous or risky phenomena can be expected to be in sync with their notion of and

commitment to particular idealized social orderings or worldviews (Kahan, 2012; Douglas & Wildavsky, 1982). Mary Douglas, the main proponent of this theory, defines culture as a set of *processes* and *resources* used in situated, dialogical sensemaking (see Rampton, 2001). Culture as used in the CT is therefore self-defined in opposition to other societies, groups, institutions or individuals (Douglas & Wildavsky, 1982). A frequently cited aspect of Cultural Theory is its group-grid typology of social or cultural organization. Based on the group-grid typology, the theory characterizes the worldviews associated with cultural ways of life along two crosscutting dimensions, group and grid (Douglas & Wildavsky, 1982; Kahan, 2012). And based on individuals' positions on these dimensions one can predict their attitude toward particular risks. The group dimension addresses the question: Is the individual a member of a bonded social unit (Olstedal et al., 2004)? Thus, one can have a weak or strong group identification. Having a weak group identification implies a loose bond with group norms, beliefs, and values, which means an inclination to an individualistic worldview, characterized by the expectation that individuals would fend for themselves. Conversely, a strong group way of life means an inclination toward a communitarian or solidarity worldview, characterized by the idea of 'we are in this together' (Kahan, 2012).

The grid dimension of the grid-group typology concerns the adherence to or defiance of hierarchical social relations. A weak grid way of life implies individuals have many behavioral options and able to "negotiate their own social relations" (Olstedal et al., 2004, p. 18). This way of life means an "egalitarian state of affairs in which no one is prevented from participation in any social role because he or she is the wrong sex, or is too old, or does not have the right family connections" (Kahan, 2012, p. 4). On the other

hand, a strong grid way of life means fewer behavioral options are available to individuals. Thus, those individuals who have strong grid orientations tend to manifest hierarchical worldviews, and work to ensure that hierarchical social relations are maintained.

According to the CT, worldviews explain differences in risk perception, acceptability and conflict over risk regulations (Douglas & Wildavsky, 1982; Wildavsky & Dake, 1990; Kahan, Braman, Gastil, Slovic, & Mertz, 2007). Thus, egalitarians (with weak grid way of life) and communitarians (strong group way of life) are by default more apprehensive about environmental risks and often subscribe to the need for regulation. Individualists (weak grid way of life) — often committed to notions of free markets and individual freedoms — dismiss warnings about environmental risks as specious. Similar to individualists, hierarchists (strong grid way of life) believe in social orderings, and therefore are also predisposed to perceive warnings of environmental catastrophe as indicting societal elites and threatening the status quo (Kahan & Braman, 2006). The CT attributes the low environmental risk perceptions among individualists to their commitment to the autonomy of markets and value they place on individual autonomy. Relatively hierarchical individuals also tend to view claims of imminent environmental catastrophe as a threat to the competence of elites and long standing traditions.

In summary, individualists and hierarchists perceive high economic, political, and social risks and low environmental risks, while communitarians and egalitarians perceive high environmental risks and low economic risks (Shrader-Frechette, 1991). Therefore, as shown in Table 1, based on people's concurrent positions on this group-grid matrix — treated as two orthogonal dimensions—their worldviews or ways of life are characterized

as hierarchical individualism, hierarchical communitarianism, egalitarian individualism, egalitarian communitarianism.

An important dimension of the Cultural Theory is the view that no one individual, group or society consistently perceives all societal risks as high or low (Douglas & Wildavsky, 1982). Thus, by saying a “certain group or kind of society [or individual] is biased towards stressing the risk of pollution, we’re not saying that the other kind of organization is objective and unbiased” (p. 8). The other group is also biased but toward finding *different* kinds of risks.

The effects of cultural worldviews (i.e., bias) go beyond popular risk perceptions. They also influence how analysts and researchers study risks, how communicators dialogue with communities, and how and what policies are implemented and supported. This is an important point to bear in mind when thinking about Tullow Oil’s corporate sustainability judgments, processes, actions, and communication.

Values and uncertainties are an integral part of every acceptable risk problem. As a result, there are no value-free processes for choosing between risk alternatives. The search for an “objective method” ... may blind the researchers to the value-laden assumption they are making. Not only does each approach fail to give a definitive answer, but also is predisposed to representing particular interests and recommending particular solutions. (Douglas & Wildavsky, 1982, p. 4)

Thus, industrial/scientific positions (as opposed to popular positions) on offshore oil production risk ought not be viewed as value-free. They are also defined, shaped, and driven by a *different* set of value —professional-industrial worldview.

Table 1

The Cultural Cognition Model (of the Cultural Theory)

	Individualism (Low Group)	Communitarianism (High Group)
Hierarchy (High Grid)	<i>Hierarchical Individualism</i> (Fatalism)	<i>Hierarchical Communitarianism</i> (Hierarchy)
Egalitarianism (Low Grid)	<i>Egalitarian Individualism</i> (Individualism)	<i>Egalitarian Communitarianism</i> (Egalitarianism)

Note. Categories in parentheses show the cultural cognition model’s closest corresponding labels in the Douglas and Wildavsky’s (1982) typology.

African Origins of the Cultural Theory

This discussion is important for understanding the current dissertation’s arguments later in Chapter IV and Chapter V about the role of worldviews (i.e., habitus) in risk perceptions. Although the Cultural Theory being discussed here concerns risks and hazards, the ideas that became the building blocks of the Cultural Theory and its different offshoots have roots in social phenomena that at first glance appear to have no relationship with risk (Fardon, 1999). The ideas were first put forward in Douglas’ 1963 book on her anthropological work in the Central African country, Congo. In *The Lele of Kasai*, Douglas (1963) laid her neo-Durkheim view of how cultural formations manifest

in social conditions. Among the Lele, authority was thought to reside in older people, but in practice, this was not the case. Douglas drew a link between authority and the ability to induce work, productivity and wealth. Besides, Douglas observed how indigenous standards of *value* were derived from the sexuality of women. Among the Lele, the men were not allowed to get married until about 40, but older men had unrestricted access to unmarried women. The value and relative scarcity [of marriageable girls] were axioms from which the rest of Lele culture flowed” (Douglas, 1963, p. 66). This, Douglas explained was a question of *value*; it suggests what both older and younger men in Kasai saw as important. Thus, judgment, decision-making, and actions were rooted in the question of value.

Following this work was Douglas’ most popular work (Fardon, 1999), *Purity and Danger: An Analysis of the Concepts of Pollution and Taboos*. In this work, Douglas (1966, 2003) introduced two concepts: *pollution* and social *contagion*, which are more closely related to risk and danger. The basic thesis in this work was that what is deemed contagious is socially defined and cultural derived. Pollution beliefs are a way to ward off social elements that are deemed to be anomalous. In the words of Douglas (2007, p. 1), “dirt is [therefore] simply matter out of place.” Pollution equals negative contagion, and purity equals positive contagion. Both categories are defined in opposition to others. To Douglas, therefore, there is little difference between the idea of *taboos* in traditional societies and *pollution* in advanced ones (Douglas, 2003). They are both categories created to distinguish between “us” and “them.” This idea of a “universal cognitive block against matter out of place” (Douglas, 2007, p. 1), is similar to Leon Festinger’s theory of cognitive dissonance except that for CT, the source of the dissonance is something

specific — cultural values. In Douglas (1970, 1996) *Natural Symbols*, she further developed the theory by arguing that although we all have our bodies through which we observe and interact with the world, our views are not defined by sensory perception, but by social experience. Thus, similar to all classifications, all *symbols*, including apparently technical ones (such as the risk of nuclear energy, genetically modified organisms, climate change, ecological damage resulting from offshore oil production, etc.) are socially *experienced*. This implied that “natural” and “risky,” although often viewed as technical terms, are best seen as concepts that are born out of experience. *Natural Symbols* was followed by the publication of *Cultural Bias and How Institutions Think* (Douglas, 1978, 1986), which marked a move from Grid-group Theory to Cultural Theory — a first attempt to apply her observations in traditional societies to more advanced ones. In applying the Cultural Theory to institutions, Douglas proposed that people’s (both experts and non-experts) rudimentary cognitive processes are derived from institutional forms.

Institutions systematically direct individual memory and channel our perceptions into forms compatible with the relations they authorize. They fix processes that are essentially dynamic, they hide their influence, and *they rouse our emotions* to a standardized pitch... Add to all this ... they endow themselves with rightness and send their mutual corroboration cascading through all the levels of our information system... Any problems we try to think about are automatically transformed into their own organizational problems. The solutions they proffer only come from the limited range of their experience. If the institution is one that depends on participations, it will reply to our frantic question: ‘More participation!’... For us, the hope of intellectual independence is to resist, and the necessary first step in resistance is to discover how the institutional grip is laid upon our mind (Douglas, 1986, p. 92).

Stated differently, “The sense of a priori rightness of some ideas and the nonsensicality of others are handed out as part of the social environment” (Fardon, 1999, p. 227). In the 1980s, Douglas’ cultural categories evolved into four groups: Hierarchy (i.e., high grid, high-group), Market Individualism (i.e., low grid, low-group), Egalitarianism (low-grid, low-group) and Fatalism (high-grid, low-group) (see Douglass & Wildavsky, 1982). Table 2 provides an overview of the four cultural worldviews.

Critique of the Cultural Theory of Risk

Despite its intuitive appeal, the Cultural Theory faces a number of criticisms: substantive, political (or ideological), and methodological. The CT, critics argue, is sociologically reductionist and deterministic, stereotypical, relativistic and solipsistic (see, for e.g., Rayner, 1992 and Fardon, 1999 for detailed discussions). Besides, the theory appears to neglect individual agency. If there is no way social actors could escape social pressures, “then no account of these pressures can claim to have escaped them either” (Fardon, 1999, p. 147). Also, as Fardon acknowledges, voluntariness of risk assessments and acceptability might be more important than Mary Douglas allowed. While these contending views on the Cultural Theory may seem sensible, they are not without flaw. For example, the charge that CT is deterministic ignores the fact that CT theory is not a psychological theory of personality traits; it is a theory of institutions or social formulations. The critique that CT uses stereotypes appears to be an argument against classification as a whole. And since classification is fundamental to all forms of epistemologies (whether objective or constructionist; natural sciences, social sciences, or humanities), this criticism has little merit.

Table 2

Summary of Mary Douglas' Grid-Group Cultural Typology

	Low Group	High Group
High Grid	<p><i>Fatalism</i> Strong ranking or grid system Weak group control Reputation of apathy</p> <p>Prototype: Slaves, prisoners fall within this institutional type</p> <p>Says: “Environmental risks? Whatever...”</p>	<p><i>Hierarchy</i> Bounded and strong regulatory or grid system Values tradition and order Ascribes roles based on gender, family, rank</p> <p>Prototype: Socially conservative individuals</p> <p>Says: “Environmental risks should not threaten social norms”</p>
Low Grid	<p><i>Individualism</i> Extreme individualism: not bounded Weak group control Control: market mechanism and competition Egalitarian, but not with respect to wealth</p> <p>Prototype: American Libertarian</p> <p>Says: “Risk are opportunities for economic transformation”</p>	<p><i>Egalitarianism</i> Bounded, but no ranking, regulatory or grid system Suited for a community of dissidents Disapproves of differentiation based on wealth, social position, Repudiates social inequality</p> <p>Prototype: The liberal environmentalist</p> <p>Says: “Risks are a threat to social equity”</p>

Note. “Egalitarians” tend to believe that nature is fragile and ought to be protected. Persons who ascribe to this worldview eschew externally imposed structure and social norms, as well as competition because they believe these conditions breed discrimination and inequality. “Hierarchists” believe in order and control. For them, nature is tolerant and controllable. Such persons ascribe to regulation, provided it is in line with their belief in tradition and hierarchical social relations. “Individualists” view nature as benign. Adherents to this worldview or way of life ascribe to equality in other social relations but not in terms of economics. They believe unfettered market mechanism provides us with the opportunity to create more wealth. Therefore, those who share in this worldview often resist market regulations. To this kind of society or group, the market is the arbiter of inequalities. “Fatalists or “isolates” see nature as capricious. Adherents to this view are usually passive about environmental risks; they ascribe to hierarchical social relations but are also individualistic in orientation (see Douglass and Wildavsky, 1982).

In terms of politics and ideology, the CT is critiqued for portraying environmental fears as irrational. It is dismissed as an inherently conservative theory, which seeks to legitimize the position of industry or help it reject liability for environmental damages. Are such criticisms “reasoned academic misgivings” or reflex reactions that reflect the critics’ own “deeply committed [institutional] positions” (Fardon, 1999, p. 145). As

observed earlier, the CT is not a static theory of risk perceptions. How then can it be seen as legitimizing industry, but not environmental policy makers, advocates, or activists?

The most important criticism CT has faced concerns its methods and internal validity. Lennart Sjöberg has been one of the loudest and most persistent critics of the Cultural Theory in this regard (see Sjöberg, 1996, 2000, 2002). He has argued that the success of Cultural Theory is largely an example of the persuasive power of speculation. The theory, he suggests, has intuitive appeal but lacks empirical verification. To him, the Cultural Theory has weak explanatory power since it explains less than 10 percent of the variance in perceived risks. Thus, the theory's claims are "based on a statistical illusion;" *significant* results are interpreted as *substantial* (Sjöberg, 1996, p. 219). This argument is problematic in two ways. First, a small variance explained does not necessarily mean the relationship observed between cultural worldviews and risk perceptions is of little practical value (see Rosenthal & Rubin, 1982; Ozer, 1985). As Ozer indicates, the way a coefficient of determination (r^2) is estimated and interpreted as an effect size is partially theory-dependent. A good effect size in one theory domain is therefore not necessarily a good effect size in another domain. In the case of CT, Sjöberg and other critics fail to recognize that cultural worldviews are *orienting dispositions*, and therefore operate in concert with other dispositional, situational and contextual variables (Slovic & Peters, 1998). Second, r^2 has long been known as a misleading measure of effect size (Rosenthal, 1980; D'Andrade & Dart, 1990). Thus, criticisms of the Cultural Theory that *solely* rely on r^2 are flawed. Using Rosenthal's Binomial Effect Size Display (BESD)⁶ technique, for example, Slovic and Peters (1996) demonstrated that the weak coefficients of

⁶This technique allows the assessment of practical magnitude of an effect size based on r (for further details on the BESD, see Rosenthal, 1990; Rosenthal & Rubin, 1982).

determination (between 1% and 7%), which were the bases of Sjöberg's attack on the CT, were actually substantial effect sizes. Even the smallest relationship between worldviews and high risk perception (i.e., $r^2 = .001$) was associated with 15% difference in risk perceptions between individuals who shared a relatively low hierarchical worldview and those who ascribed to a hierarchical social order. This demonstrates the weakness in the critique that the Cultural Theory of Risk has little internal validity.

Besides the three cluster of critiques, another substantial point is whether the theory in its current form has cross-cultural validity — especially in African cultures. This point deserves further attention because Mary Douglas did not conceal her view that the CT is a universal thesis on cultural cognitive blocks to societal risks and dangers (Douglas, 2007). Thus, this dissertation is an attempt to assess the Cultural Cognition Thesis' applicability to residents in Ghana's offshore oil production region.

Measuring Cultural Worldviews

One challenge that the Cultural Theory of Risk faces is how to empirically measure cultural worldviews in order to test the theory's propositions. One approach that is often used to measure cultural ways of life was one developed by Karl Dake, a student of Douglas Wildavsky. Using various items to assess people's attitudes toward issues such as equality, fairness, stratification, etc., four separate scales were constructed to measure cultural worldviews (see Wildavsky & Dake, 1990; Dake, 1991). These scales have however been criticized for lacking construct and internal validity (Kahan, 2012). While holding onto the notion of cultural worldviews as predictors of risk perceptions, proponents of cultural cognition argue that worldviews are located in psychological

mechanisms and not social institutions (Kahan, Braman, Slovic, Gastil & Cohen, 2009; Kahan, 2012). To overcome the conceptual and methodological weaknesses of Douglass and Wildavsky's model, cultural cognition studies measure worldviews using two composite scales instead of four different ones — one for the group (individualism-communitarianism) measure and the other for the grid (hierarchy-egalitarianism) measure. And this model is the current research's preferred conception of the Cultural Theory. Cultural cognition refers to the influence of individuals' cultural dispositions and values on their perceptions of the risks and benefits of putatively dangerous activities or phenomena (Kahan & Rejeski, 2009). The items on these scales ask study participants to indicate their attitude toward hierarchical social orderings (measured in terms of gender and race relations) and toward individualism (also measured in terms of attitudes toward free market and role of government) on a four or six-point Likert scale.

Despite the use of these scales mainly in the United States and Europe, the scales have found little cross-cultural validity, even in similar cultures such as United Kingdom and Canada (Kahan, 2012, personal communication). As Douglas suggested in the *Lele of Kasai*, which laid out the ideas that became the bases for the Cultural Theory, any people in different societies produce their own view of the natural environment, which then influences their risk preferences and selections (Douglas, 1963; 2003). Also, in her *Natural Symbols: Explorations in Cosmology* where she first espoused the grid-group methodology, Douglas (1996) again argued that political structure and industrial complexity are not directly relevant to cultural experience, and that grid-group analysis is a veritable technique that reaches for the foundational social experiences. These assertions indicate that the categorization of cultures and measurement of cultural values based on

market values and attitudes toward governmental involvement in people's daily lives, as is the case with existing cultural cognition scales, may not be able to tap into the different foundational cultural experiences that underpin risk perceptions in different cultures. It is therefore not surprising that cultural cognition scales could not reliably detect risk perceptions even in Canada. This implies the need to adapt relevant cultural cognition scales or develop new ones that successfully detect different cultural attitudes in the Ghanaian context. Besides, despite the Cultural Theory's early roots in African anthropology among the Leles of Zaire and the Himas of Uganda, it has seen little *empirical* application in contemporary African cultural settings. Extant worldview measures have not been applied there.

Therefore, the first task of the current research entailed an attempt to adapt or develop scales with items that would be sensitive and appropriate for Ghanaian samples in the location of interest — Jomoro District. Attitudes toward systems of inheritance and social coordination are possible cultural dimensions to be explored during the scale development process. Based on the Cultural Theory of Risks' theses, this dissertation proposes that individuals would fit their risk perceptions to their cultural dispositions such that people would discount risk issues that threaten their value dispositions but be sensitive to ones that affirm their dispositions.

Next, I discuss the Social Amplification of Risk Framework, and its compatibility with the CT.

Social Amplification of Risk Framework

Although the cultural cognition thesis relates to cultural values, it functions from a psychometric perspective, almost exclusively focusing on psychological mechanisms (see Kahan, 2012) to the neglect of other social factors that influence risk perceptions. This is where the Social Amplification of Risk Framework (SARF) becomes an important complementary theory for this study.

In combining the Cultural Theory of Risks (its variant of Cultural Cognition) and SARF, the current study is acknowledging that no single theory or framework *fully* accounts for public perceptions and behaviors. It is most certain that different factors (cognitive, personality, social, cultural, and economic) interact to determine risk perceptions and behaviors (Slovic, 1992). Therefore, pitching different approaches against each other is not a useful exercise. Despite the utility of cultural worldviews as orienting dispositions (Peters & Slovic, 1996; Slovic & Peters, 1998), they do not *completely* account for why different people perceive risks differently. Neither does the psychometric paradigm nor the SARF. Therefore, these approaches to risk perception and communication are seen as complementary. Despite Mary Douglas's apprehension about using psychological measures and treatments, by being outward looking (Rayner, 1992) the Cultural Theory stands to enhance its explanatory power. For a number of reasons this dissertation proposes that both the psychometric paradigm and SARF are inherently compatible with the CT.

First, as discussed earlier, the psychometric paradigm is criticized for relying solely on psychological mechanisms (e.g., Sjöberg, 2000). But much of this criticism derives from a straw man. The psychometric paradigm — although based on the

assumption that risks are subjective and defined by individuals—acknowledges that these subjective perceptions are based on the interaction of several factors: psychological, social, cultural, and institutional (Slovic, 1992). In line with Slovic’s exposition on what the psychometric paradigm is, the paradigm can best be viewed as well suited or analogous to the SARF.

The SARF was developed by Kasperson, Renn, Slovic, Brown, Emel, Goble, & Ratick (1988) as a way to address the increasing fragmentation among risk communication researchers (Renn, 1992; Rosa, 2003). It thus consolidates different perspectives on risks such as mass media effects, and psychometric, cultural, organizational, and institutional responses by recognizing that the interplay of several factors underlies risk perceptions. The framework posits that the dynamic social context of risks and the people involved plays an important role in whether the risk will be *amplified* or *attenuated* (Kasperson et al., 1988). And as Pidgeon et al. (2003, p. 13) put it, the SARF brings attention to:

[T]hose [historical, social, cultural, as well as psychological] processes by which certain hazards and events that experts assess as relatively low in risk can become a particular focus of concern and socio-political activity within a society (amplification), while other hazards that experts judge more serious receive comparatively less attention from society (attenuation).

Also, the SARF’s (as well as the CT’s) view on risk communication changes the focus of attention from a static description of what risk means for different communities to a dynamic analysis on how these communities exchange information about risk and adjust their perceptions, attitudes, and behaviors (Renn, 1992). Thus, the framework, which for obvious reasons has been criticized as eclectic, sees risk perceptions as a

function of *hazardous events* or *information*, which are then amplified (or attenuated) through *social*, *cultural*, or *meditational* processes (Renn, 1992; Kasperson, Kasperson, Pidgeon, & Slovic, 2003).

Besides its complementarity with the Cultural Theory and the Psychometric Paradigm, the SARF, there are pragmatic reasons for using it for this research. In the Jomoro District (and all six communities) of interest to the current study, there is a dynamic play of social forces that could potentially amplify or attenuate public perceptions of petroleum production activities. These forces, which Renn (1992) calls amplification stations or risk-related information networks,⁷ may include formal organizations such as NGOs, mass media, Tullow Oil (through its community engagement efforts and CSR), the fishermen's union, and informal friendship ties. How may these forces amplify or attenuate risk perceptions? The SARF also holds that the nature of information from risk-related communication networks also plays a key role in public responses and risk amplification (Kasperson et al., 2003; Renn, 1992). And information attributes such as *volume*, whether or not the information is *disputed*, extent of *dramatization*, as well as *symbolic connotations* also influence the risk amplification process and outcome.

As a 2012 report by the National Consortium for the Study of Terrorism and Responses to Terrorism indicates, studies on the Social Amplification of Risk Framework have been primarily concerned with analysis of media and risk reporting, organization risk communication, and institutional trust. However, little attention has been paid to the

⁷ The idea of network here stems from SARF's core proposition that several factors in concert shape attitudes toward risk issues.

implications of informal networks for risk attenuation or amplification. The few studies that have examined the diffusion of risk perceptions through social networks (e.g., Scherer & Cho, 2003; Kohler, Behrman, & Watkins, 2007) have only looked at diffusion, and not how these networks interact with the complex socio-cultural milieu to influence perceptions. The SARF offers a structure for such a multi-perspective research. Based on the SARF, therefore, this study addresses this question: What are the formal and informal nodes of risk attenuation and/or amplification?

Corporate Sustainability: A Conception of Corporate Social Responsibility

Whether corporations (and businesses in general) can be accorded the status of moral agents, and held to be morally responsible for their practices has been a subject of debate in business ethics literature since the mid 1900s. In his classic *The Social Responsibility of Business is to Increase its Profits*, Milton Friedman argued against the moral agency of businesses because they are not human (Friedman, 1970, 1983). He explained that “a corporation is an artificial person and in this sense may have artificial responsibilities, but ‘business’ as a whole cannot be said to have responsibilities, even in this vague sense” (Friedman, 1983, p. 239). However, despite that businesses are different from human beings in certain respects (Goodpaster, 1983; Masaka, 2008), it is not unreasonable to describe corporations as moral agents (with some rights, privileges, and duties bestowed to persons) who can then be held morally responsible for their actions (Shaw, 1999; Wulfson, 2001). Thus, the principles of morality can be at least ‘projected’ unto corporations. (See Goodpaster’s (1983) *The Concept of Corporate Responsibility* for

a systematic analysis of how the basic elements of individual moral responsibility apply to and become morally projected unto business organizations.) In short:

The principle of moral projection invites us to predicate moral characteristics (e.g., virtues, obligations, duties, etc.) of corporations by *analogy* with their application to human individuals. Obviously, as with any analogy, there will be (indeed, must be) respects in which the items being compared are not similar. Corporations do not, for example, have feelings or passions, while individuals do. Nor do certain *rights* of individuals have clear corporate counterparts (e.g., the right to worship, vote, or draw social security) — though some rights do (e.g., the rights to property, free speech). These asymmetries and others are to be expected and do not constitute a serious threat to the strategy [of moral projection] (Goodpaster, 1983, p. 15).

In line with Goodpaster's (1983) and Shaw's (1999) expositions, moral responsibility has come to be largely⁸ applied to business organizations. And this comes in the form of corporate (social) responsibility (CSR). This shift in the unit of analysis from 'individuals' as moral agents to the 'organization' has become necessary since modern businesses play an unprecedented role in the lives and livelihoods of individuals. Thus, both private and public institutions have "become the primary actors on the human stage, enveloping if not replacing individuals as the loci of power and responsibility" (Goodpaster, 1983, p. 9). This assertion points to the importance of this question: If businesses have become this central to our daily lives, what then should be their roles in society? CSR and its other conceptual variants such as corporate responsibility, corporate sustainability, corporate ethics, corporate citizenship, corporate stewardship, responsible entrepreneurship, and triple bottom among others have emerged as a response to the

⁸ As would be expected, still not everyone accepts the view that corporations have legitimate moral agency. For example Velasquez (2003) argues that the conception of corporate organizations as separate moral agents is based on a flawed assumption: the fallacy of division. And individual members in organizations are the ones who have moral agency. They are responsible for all corporate actions.

above question (Singh & Singh, 2013; Donaldson & Preston, 1995; Windsor, 2006). What then is CSR?

Defining the CSR Concept

The concept has a long and varied history (Lee, 2008) but it was not until the 20th Century that the proliferation of formal writings on it began (Carroll, 1999). Despite its relative newness in the academic domain, CSR is a “tortured” and variedly used concept within the academic literature (Godfrey & Hatch, 2007, p. 87). It has a preponderance of definitions and conceptualizations, which make it difficult to operationalize and measure it. A precise definition of the concept is as “elusive as its exact nature and role in the business-society relations” (Masaka, 2008, p. 14). As Godfrey and Hatch observe, despite its lack of conceptual clarity, CSR continues to receive attention not only in academia, but also in business and communication management. Irrespective of what label is used to describe it or how researchers operationalize it, CSR broadly describes *how* business managers handle and/or should handle public policy concerns and social issues (Windsor, 2006) while pursuing their business interests; it is descriptive and prescriptive. CSR is thus a portmanteau term for myriad of concepts and contentions such as society and business, social issues management, public policy and business, stakeholder management, and corporate accountability (Garriga & Melé, 2004). The term is used in this dissertation as an umbrella concept for the numerous conceptualizations of the view that businesses have *obligations* to their stakeholders (i.e., communities, employees, customers, suppliers, consumers, publics, among others) and society as a whole.

The concept, consistent with Schwartz (2011), evokes higher-order questions that deserve attention from business managers, communication professionals, policy makers, ethicists and researchers in general. Inter alia, these questions are: What should a firm's responsibilities be *toward* their stakeholders and society as a whole? And, "Should firms *merely* maximize profits *while obeying the law*?... [Or do they] possess additional ethical or even philanthropic (i.e., charitable) obligations toward society?" (Schwartz, 2011, p. 11; emphasis added). In response to the preceding questions, the CSR field of studies is marked by different theories as well as a proliferation of controversial, complex and unclear approaches (Garriga & Melé, 2004). The next section offers a brief description of some of these approaches. It questions the view that two approaches (economic and ethics) are two ends of the CSR continuum and thus antithetical.

Evolution of the CSR Concept

Archie Carroll's (1999) seminal review of the evolution of the concept identified five periods in the development of CSR, beginning with the 1950s, which he calls the modern era. Howard Bowen's⁹ (1953) book *Social Responsibility of the Businessman* was a very influential writing of this period. Bowen's writing was underpinned by the belief that large businesses as "vital centers of power and decision making" have implications for the lives of citizens at many points. This assumption currently continues to permeate much of the debate on CSR. Even right-hand doctrinaire economic positions (Godfrey & Hatch, 2007) such as espoused by Milton Friedman (1970, para. 27), who vehemently argued that the responsibility of businesses is to maximize profits while engaging in

⁹ To Carroll, based on Howard Bowen's pioneering work on social responsibility he deserves the accolade of the "Father of Corporate Social Responsibility" (p. 291).

“open and free competition without deception or fraud,” can be interpreted in the libertarian spirit in which it was written to imply that fulfilling obligations to stockholders and business owners is an imperative for a sustained functioning of the free market, which is a *sin qua non* for securing a prosperous and free society (Carson, 1993). In the same vein, left-hand doctrinaire moral positions on CSR are hinged on the view that businesses function within a system, and should therefore not engage in actions and practices that are inimical to the human and natural environment. Bowen (1953) defined the social responsibility of business as policies, decisions and lines of actions that are desirable and in sync with overall societal objectives and values.

Carroll’s second era of CSR was the 1960s. During this period, academics were the major architects of most of the definitions that emerged; prominent among them was Keith Davis. Besides defining social responsibility as business decisions and actions beyond direct economic interest, Davis (1960) argued for what would later be referred to as strategic CSR. According to Davis, socially responsible decisions are not necessarily counter to the ability of business to maximize profits. Such actions can be justified through long-term economic gains. In 1967, Davis again made a major contribution to CSR when he argued that “social responsibility moves one large step further by emphasizing *institutional actions* and their effects on the whole social system” (cited in Carroll, 1999, p. 272; emphasis mine). According to Carroll, Clarence Walton also emphasized the importance of voluntarism as opposed to coercion in the definition of CSR. Despite that these definitions recognized that businesses had broader responsibilities, it was Joseph W. McGuire who argued in detail that the responsibilities

extend beyond economic and legal obligations to include politics, community welfare, education, happiness of employees, and the whole social world (Carroll, 1999).

The third period, the 1970s, saw a proliferation of definitions, and increased specificity of the concept. Johnson (1971) first hinted at what would later be referred to as the Stakeholder Theory when he posited that social responsibility requires businesses to balance their multiplicity of interests —dealers, employees, suppliers, communities, and the nation. Another definitional contribution (which Carroll describes as a landmark contribution) to CSR within this period was by the Committee for Economic Development (CED), in its *Social Responsibilities of Business Corporations*, which argued that “business functions by public consent and its basic purpose is to serve constructively the need of society” and be responsive to changing public expectations (p. 274). Other definitions identified by Carroll (1999) within this period were: Johnson’s utility maximization through multiple goals; Prakash Sethi’s (1975) dimensions of corporate social performance (CSP); Lee Preston and James Post’s (Preston & Post, 1975) concept of public responsibility (which emphasizes a limited scope of managerial responsibility and the importance of the public policy process rather than individual conscience); Gordon Fitch’s (1976) definition of CSR as solving problems partially or fully caused by the corporation;¹⁰ and Carroll’s (1979) four-component —economic, legal, ethical, and discretionary— social responsibility model.

The fourth phase (1980s) in the development of CSR literature, as observed by Carroll 1999, was characterized by increased attempts to measure and conduct research on the subject. Thomas M. Jones contributed to the CSR definition by stating that CSR is

¹⁰ This view is akin to our conception of corporate sustainability, as involving risk management (for society and business) and traditional notions of CSR.

a process, and not merely a set of outcomes. Other frameworks identified by Carroll (1999) within this period include Frank Tuzolino and Barry Armandi's need-hierarchy framework, which is modeled on Maslow's hierarchy of needs. In 1983, Carroll further elaborated on his four-part CSR definition by arguing that without profits, businesses cease to be. However, businesses do well by doing good. Economic viability and adherence to laws, he argued, are preconditions for ethical and voluntary or philanthropic behaviors.

In the 1990s, concepts such as 'stakeholder,' 'business ethics,' and 'corporate citizens' emerged, largely as alternative operationalization of the CSR concept (Carroll, 1999). Using his four-component CSR model, for example, Carroll (1991) proposed a pyramid of CSR, with the economic component as the base, followed by legal, ethical, and philanthropic components.

Arguments for and against CSR

In their summary on CSR approaches, Garriga and Melé (2004) observe that:

CSR theories are focused on four main aspects: (1) meeting objectives that produce long-term profits, (2) using business power in a responsible way, (3) integrating social demands and (4) contributing to a good society by doing what is ethically correct (p. 65).

In line with this, business researchers and ethicists have identified a number of key approaches to CSR. For a detailed discussion of these approaches, see Garriga & Melé (2004) and Windsor (2006). For illustrative purposes, let us summarize these approaches. Drawing on Talcott Parsons' (1961) AGIL (Adaptation, Goal Attainment, Integration, and Latency or pattern maintenance) system, Garriga and Melé (2004) identified four main

approaches to CSR and by extension, CSR communication (see Parsons, 1949, 1961 for a full discussion on AGIL system). These are instrumental theories, political theories, integrative theories, and ethical theories, with the first and the last often seen as opposing and/or incompatible.

Instrumental theories of CSR. This cluster of theories includes the classical economic profit maximization doctrine (Friedman, 1970, 1983), cause-related marketing, and strategies for competitive advantage (e.g., Porter & Kramer, 2002). One thing all instrumental approaches to CSR share, perhaps with the exception of Friedman's shareholder value proposition if looked at solely from its headline, is that they are all forms of enlightened self-interest. Thus, CSR is a means to enhance organizational goals — profits and reputation.

Political theories of CSR. Garriga and Melé (2004) call this cluster “political theories” due to its use of political metaphors such as “citizenship” and “constitutionalism.” Examples of political theories are integrative social contract theory (e.g., Donaldson, 1982), corporate citizenship (Altman & Vidaver-Cohen, 2000) and Davis' (1960, 1967) corporate constitutionalism, social power equation, and iron law of responsibility. Corporate constitutionalism is Davis' idea that stakeholders (not just stockholders) restrict organizational power in the same way that a governmental constitution does. All of Davis' three concepts are founded on the view that businesses have enormous power and should therefore exercise it responsibly lest it comes back to hurt them.

Integrative theories of CSR. This category includes issues management (e.g., Sethi, 1975), principle of public responsibility (e.g., Preston & Post, 1975), stakeholder management (e.g., Emshoff & Freeman, 1978; Freeman, 1984, 2010), and corporate social performance (e.g., Carroll, 1979, 1991).

Ethical theories of CSR. The fourth category forces attention to the ethical basis of the business-society relationship. This category includes the Normative Stakeholder Theory (e.g., Donaldson & Preston, 1995), universal rights perspectives (e.g., Annan, 1999), sustainable development (Brundtland Report, 1987) and the common good approach (Mahon & McGowan, 1991).

Alternative approaches to CSR. Similar to Garriga and Melé's (2004) synthesis of the CSR field, Windsor (2006) observed that the CSR literature is a "marketplace of three competing approaches" (p. 93).¹¹ He identified economic, citizenship (both instrumental and idealized), and ethical approaches as the three broad perspectives on CSR. To Windsor, the economic conception of CSR emphasizes fiduciary responsibility, minimalist public policy, and customary ethics. And the ethical conception of CSR emphasizes corporate self-restraint, expansive public policy, and corporate altruism. In between the economic and ethical perspectives is the citizenship approaches. This intermediary approach can be broken down into instrumental citizenship approaches

¹¹ Despite that these scholars identify and discuss the different approaches and perspectives within the field of CSR research, they frequently use the term "corporate CSR theory" as though CSR it is a coherent theoretical domain.

(leaning toward economic perspectives) and idealized citizenship (leaning toward the ethical perspectives). Thus,

economic CSR restricts companies to utilitarian ethics dependent on protection of investor property rights. Instrumental citizenship emphasizes managerial discretion concerning the [CSR]... Ethics and idealized citizenship define welfare outcomes more broadly to include expanded duties, rights, and just consequences (Windsor, 2006, p. 96).

In summary, the CSR research domain is best characterized as a *contest* between the economic viewpoints and the ethical viewpoints. The economic perspectives emphasize “efficiency-oriented utilitarianism, investor property rights, and minimalist public policy” while the ethical perspective emphasizes “strong corporate duties of self-restraint, altruism, and expansive public policy, [and] strengthening stakeholder rights (Windsor, 2006, p. 96). But citizenship approaches are viewed as a hybrid space where ethics and citizenship interact (as idealized CSR) and economics and citizenship interact (as instrumental citizenship).

The Corporate Sustainability Framework: Conceptual Explication

Corporate sustainability as a conception of CSR derives from the concept of sustainable development (see Brundtland Commission Report, 1987). ‘Sustainability’ has been applied to corporations and organizations in general, but there is currently no systematic concept explication in the literature. Thus, as part of this dissertation, this researcher presents a concept explication of corporate sustainability, espousing its key dimensions and utility for CSR research and practice.

Although a macro-level concept, sustainable development is closely related to the idea of CS, which is an organizational level construct. At the organizational level, corporate sustainability is the normative position that business outcomes *ought* to be beneficial to the natural, social, and economic environment, a statement that is congruent with current mainstream sustainable development thinking (See Adam, 2006; Melkote & Steeves, in press). CS is thus the “up-take of sustainable development as a norm informing ... companies’ CSR policies and practices” (Dashwood, 2014, p. 562). (I return to the link between CS and sustainable development.)

In its rudimentary form, it implies that (a) businesses operate within society, and therefore have both positive and negative implications for members of society; (b) there are three dimensions of the effects — social, economic, and environmental; (c) the three components cannot be delinked; and (d) businesses can enhance economic and social development without compromising the natural environment — that is the compatibility assumption (see Adams, 2006; Brundtland Commission Report, 1987). The CS framework suggests that CSR is not merely constituted by individual corporate actions and programmes. It is derived from how corporations balance the hazards and benefits of their processes and actions along the entire value chain. The concept encapsulates commonplace notions of CSR as well as risk mitigation and management.

Three theoretical constituents of the CSF. Corporate Sustainability as a conception of CSR is best seen as a conceptual framework that lies at the intersection of three theoretical approaches, viz., Stakeholder Theory (Freeman, 1984, 2010; Freeman, Harrison, Wicks, & Parmar, 2010), the concept of issues management (e.g., Chase, 1982;

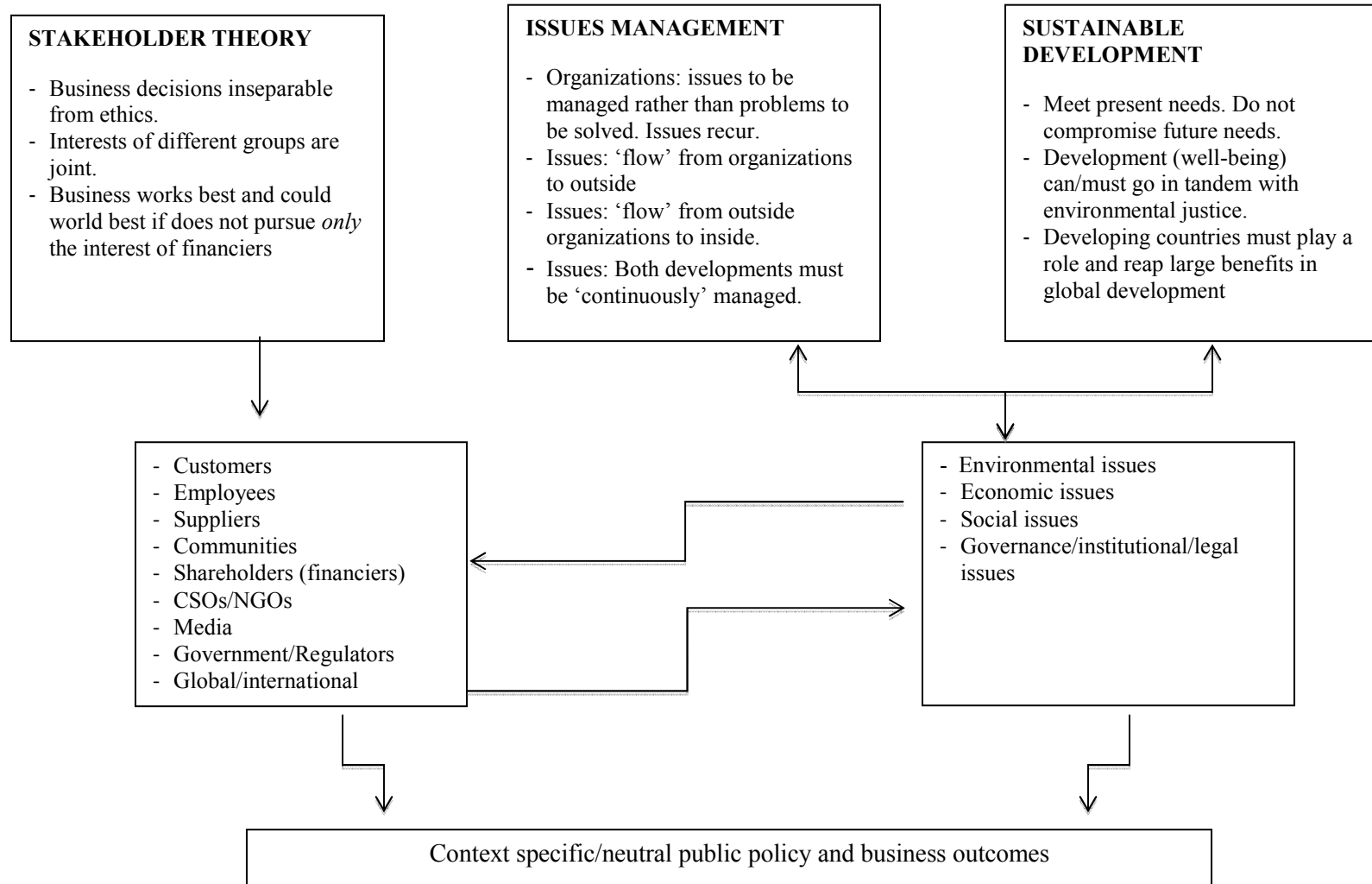
Heath, 2002; Heath, 2006; Heath, 1997; Sethi, 1975) and the normative ideal of sustainable development (Adam, 2006; Brundtland Commission Report, 1987). The CSF is illustrated in Figure 3.

Stakeholder theory. Although the ideas that form the basis of Stakeholder Theory have been in existence for a long time, the concept gained prominence after the publication of Edward Freeman’s *Strategic Management: A stakeholder approach* in 1984. As Freeman explains, the theory was originally proposed due to the realization that traditional business management approaches—that view ethics and values as irrelevant to business practice and also view the business environment as stable—do not sufficiently address the problem of value creation. Thus, it set out to bridge the gap between business and ethics; private interest and public interest. Stakeholder Theory “suggests that if we adopt as a unit of analysis the relationship between a *business* and the *groups* and *individuals* who can affect or are affected by it, then we have a better chance to [routinely] deal with” the turbulent business environment due to globalization, the fallacy of incommensurability of ethics and business, and the narrow economic theory underpinning of business practice (Freeman, 2010, p. 5). In other words, it was an attempt to push for a business theory and managerial practice that integrates what Freeman calls the “open question argument.” The questions are:

1. If this decision is made, for whom is value *created* and *destroyed*?
2. Who is harmed and/or benefited by this decision?
3. Whose rights are enabled and whose values are realized by this decision (and whose are not)? (p. 5)

Figure 3

The Corporate Sustainability Framework



The Stakeholder Theory proposes a human-centered approach to these questions.

It argues that in addressing these questions,

business can be understood as a set of relationships among groups [such as customers, suppliers, employees, financiers, communities, advocacy organizations, and managers], which have a *stake* in the activities that make up the business... To understand a business is to know how this relationships work. (Freeman et al., 2010, p. 24).

Thus, “at any point in time, a company exists in a network of stakeholder relationships (p. 15). As Freeman and other proponents of the Stakeholder Theory observe, the theory accounts for different definitions of stakeholders, narrow (i.e., primary) and broad (i.e., secondary) stakeholder orientations. The narrow definition includes those groups and individuals (e.g., employees, suppliers, customers, financiers, etc. whose support is necessary for the existence of the organization.

A much broader definition of stakeholders indicates that anyone, groups, or organizations that *can* be affected by a business must be taken into consideration (Freeman, 1984; Freeman et al., 2010). Regarding how businesses should view and relate to these stakeholders, proponents assert that, “No stakeholder stands alone in the process of value creation. The stakes of each stakeholder are multifaceted, and inherently connected” (Freeman et al., 2010, p. 26). And the interests of different stakeholders, according to the theory, are “tied together.” This point is particularly important for thinking about how the interests of the residents of the local community being studied in this study cannot be decoupled (at least in the long run) from the interest of Tullow Ghana. Thus, addressing issues pertaining to the residents also means addressing the corporation’s interests.

In sum, Stakeholder Theory views the corporate executive's (and the corporation's) responsibility as creating shared value for stakeholders *without making trade-offs*. This view on trade-offs aligns with Collins' (2004) idea of 'the tyranny of *or*' and the 'genius of *and*.' And the concept of CSR flows naturally from the idea of creating shared values for stakeholders as opposed to stockholders (see Davis, 1960, 1973). For example, Davis' argument that corporations have broader obligations beyond their obligations to stockholders is comparable to the basic tenets of the Stakeholder Theory. As Davis put it, CSR refers to how business organizations attend to "issues beyond the narrow economic, technical, and legal requirements" (p. 312-313). Therefore, firms that merely comply with the minimum requirements of the law cannot claim to be socially responsible because that is what good citizens would do. In other words, firms that only attend to their stockholders and investors cannot be said to be good and responsible corporate citizens. Next, the issues management component of the CSF is discussed.

Issues management approach. Ashley and Morrison (1995) define an issue as any "internal or external development that could affect the organization's performance. [It is anything] to which the organization must respond in an orderly fashion and over which it may reasonably expect to exert influence" (p. 123). This definition of 'issues' points to the implications they have for organizations (Dougall, 2005). Conversely, issues can also be viewed as developments that emanate from organizations, and to which the organizations must respond to swiftly in order to prevent or diminish their impact on the organization and its stakeholder. This definition is outward looking— issues flow from inside out. It points to the implications issues have for the public; thus, the public policy implications of business processes and outcomes. Naturally, a functioning firm would

constantly beget *and* encounter issues. But issues also emerge in situations where there are ongoing changes in the organizational environment, where stakeholders perceive a problem or view a situation as significant (see Jones & Chase, 1979; Brown, 1979; Crabble & Vibbert, 1985). This point suggests that ‘issues’ are not necessary objects out there waiting to be discovered and resolved, they are created and ‘co-created’¹² by the organization and its stakeholders. Therefore, from this perspective, an organization is best viewed in terms of “issues to be managed... rather than problems to be solved” (Weick, 1999, p. 187). Flux is a constant; it is best if the management orientation is that of ‘solutions are only temporary.’

There are several approaches to issues management. Examples include Crable and Vibbert’s (1985) catalytic model of issues management (i.e., potential, imminent, current, critical, and dormant stages of issues management); and Palese and Crane’s (2002) four-component issues management model. The second model comprises issues identification, analysis, strategy, and management. These models are not discussed in detail here but one thing most models have in common is their view that preemptively scanning, monitoring, and addressing ‘issues’ is a core element of organizational reputation and success. And, this researcher adds that, this also contributes to the welfare of the broader society or community.

What is the link between stakeholder management and issues management? From a social responsiveness perspective, different stakeholder groups are likely to be more interested in particular issues than others. From a policy perspective, organizational

¹² This ‘co-creation’ of issues view is similar to the broad ideas of the sensemaking perspective on organizations (see Weick, 1995). As Weick asserts, “people spend much of their time constructing rather than discovering [issues and reality]. If they discover something, it is usually something of their own construction” (p. 189).

processes and actions differentially affect stakeholder groups. Therefore, for example, a broader stakeholder orientation is more likely to yield greater qualitative and quantitative insights along the issues-life-cycle. Also, issues management is essential to enhancing stakeholders' well-being. Linking issues management to the normative ideal of sustainable development, three broad issues that if well managed would enhance stakeholder (and hence organizational) welfare are economic issues, social issues, and ecological issues – discussed in the following section.

Sustainable development. This is the normative linchpin of the Corporate Sustainability Framework. This section briefly defines the concept and its evolution, followed by how it applies to business organizations and the CSF. The sustainable development concept was popularized after the United Nations' World Commission on Environment and Development, chaired by Harlem Brundtland, published a report titled *Our Common Future* in 1987. But the concept dates back to the International Union for Conservation of Nature (IUCN) mandate of 1969 and the UN Conference on the Environment and Development in 1972, which culminated in the formation of the United Nations Environmental Program that same year (Langhelle, Blindheim, & Øygarden, 2008). Although the inherent contradiction in the capitalist exploitation of resources, for some, creates a conflict between development (defined as industrial and economic growth), the natural environmental, and social well-being (Rees, 2003; Le'le', 1991; Melkote & Steeves, in press), the use of the term “sustainable development” presumes the compatibility of economic growth and environmental justice (Adams, 2006).

The Brundtland Commission Report (1987, p. 43) identified the goal of sustainable development as:

[Seeking] to meet the needs and aspirations of the present without compromising the ability to meet those of the future. Far from requiring the cessation of economic growth, it recognizes that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a large role and reap large benefits.

The Brundtland definition of sustainable development only captured two¹³ elements — economic growth and the problem of environmental development— but current mainstream sustainable development thinking has evolved into three dimensions: environment, social, and economic sustainability (Adams, 2006; Melkote & Steeves, in press). Adams visually represents the components in three different ways: (a) as pillars, with sustainability on top and the three components constituting the pillars on which sustainability stands or lies; (b) as three concentric circles, with environment on the outside, followed by society, with economy at the center; and (c) three interlocking or overlapping circles, also representing the three components and their interrelations. These different visualizations represent particular assumptions and perspectives on sustainability.

These three components of sustainable development, however they are visualized, raise an important issue regarding the mechanisms that should be put in place to ensure that ‘development’ is attained in a ‘sustainable’ manner. This plays out, for example, in the exploitation of natural resources. For developing countries such as Ghana, the discovery of offshore oil and gas resources means the availability of erstwhile nonexistent financial resources for infrastructural development, as is the enhancement of the general well-being of the citizenry. However, the negative effects of the exploitation, such as

¹³ According to Langhelle, Blindheim and Øygarden (2008) however, the social in the Brundtland Report was a given. The report started with people, and went on to “discuss what kind of environmental policies [were] required to achieve certain socio-economic goals” (p. 19).

environmental degradation and loss of livelihood for fishermen and women in local communities present an arena (i.e., imminent issues) where the ideas of sustainable development play out — with trade-offs that do not necessarily result in immediate benefit for residents of the communities close to the oil region.

I now examine the link between sustainable development and CSR. In the Brundtland Commission Report (1987), it was recognized that “the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a large role and reap large benefits” (p. 43). This view of sustainable development is at the macro-level, with the state as the driver of development. At the organizational level, the statement can be rephrased this way: Organizations (such as Tullow Oil) cannot enhance the general well-being of people unless the society, community, and nation at large play a large role and reap large benefits. Thus, business outcomes ought to be beneficial to the three pillars or concentric circles, or overlapping circles of sustainability: people, environment, and economy. This points to the concept of corporate sustainability.

By using corporate sustainability, this dissertation is implicitly arguing that economic development, natural environmental, and social development can be counterbalanced in a sustainable manner. This notwithstanding, this researcher acknowledges the contention between the ‘strong sustainability’ perspective that economic growth fuelled by industry cannot in any way be sustainable and the ‘weak sustainability’ view that economic development is a means to attaining environmental and social sustainability (Adams, 2006). Corporate sustainability as used here strikes a balance (which implies congruence of goals rather than trade-offs) between the strong and

weak sustainability positions. It reckons that economic and infrastructural developments are necessary and so is the natural environment and social context within which such developments take place.

What, then, is the link between the three conceptual building blocks of the CSF? Corporate organizations operate in a natural environment. They interact with various stakeholders, and out of these two processes emerge a host of issues (e.g., environmental concerns, industrial accidents, pollution, labor issues such as fair wages, local content concerns, community expectations, high cost of living due to influx of immigrants, etc.). These issues deserve attention in order to enhance organizational outcomes *and* societal well-being. Thus, the CSF is descriptive, analytical, and normative. The three dimensions of the framework yield beneficial context specific or context neutral public policy and business outcomes. The next section examines the use of “corporate sustainability” as a conception of CSR in this dissertation.

Utility of the CSF. CS is used in lieu of CSR or corporate responsibility (CR) as a way of bringing conceptual clarity to a “tortured concept within the academic literature” (Godfrey & Hatch, 2007, p. 87), and thereby making it easier to operationalize and measure corporate actions. In the corporate responsibility literature, CS and CSR are used as synonymously or to convey for strategically/conceptually different meanings (May, Cheney, & Roper, 2007). The “responsibility” component of CSR and CR also accentuates the ethical and legal dimensions of business decisions and actions (May et al., 2007). In this dissertation, the term corporate sustainability is preferred over other terms such as CSR or CR for a number of reasons.

First, it is used as a way of emphasizing the three components of sustainable development, with the organization (and not the state) as the driver of development. Second, CS de-emphasizes the view that it is through profit making that businesses contribute to the well-being of society. Third, in view of the global character of the sustainable development ideal (Blindheim et al., 2008), corporate sustainability brings to the fore the implications globalization has for how we think about the business-society relationship. Fourth, CS is employed to highlight the public policy (i.e., developmental) dimensions of corporate actions. It underscores the need for corporate processes to give ‘equal’ attention to economic, social, and environmental hazards and benefits of development (in this case, business) without compromising the needs of present and future generations. Corporate sustainability as used in this dissertation is akin to John Elkington’s (1998a, 1998b) triple bottom line (TBL). The TBL concept proposes that rather than focusing on how much profits businesses make as the measure of success, business organizations *should* expand their idea of organizational success to include ecological and societal consequences. CS, however, differs from Elkington’s idea of TBL in that whereas TBL is primarily preoccupied with how to measure organizational success (whose determination is basically internal to organizations), CS— as used here—goes beyond measuring corporate success. It is, also, both internal and external to organizations. CS, thus, forces attention to the constitutive powers corporate actions have for both the organizations themselves and stakeholders (not just shareholders).

The preceding point leads us to a fourth implication of Corporate Sustainability as a conceptualization of CSR: It breaks down the talk-action dichotomy. This dissertation conceptualizes corporate sustainability as communication in itself, perhaps louder than

‘messages’ alone. Conversely, corporate sustainability communication is *action* in itself. This also implies, corporate sustainability does not only communicate how *successful* an organization is as the TBL framework suggests; communication of those actions also help ‘create’ the organization — its structures, processes, and norms. The view here is similar to the communication as constituting organization (CCO) perspective (see Weick, 1995; Taylor & Van Every, 1999; Putnam & Nicotera, 2009). The CCO perspective views the relationship between organizations and communication as sensemaking (Weick, 1995), organizations as discursive constructions (Fairhurst & Putnam, 2004), and organizations as emergent processes (Taylor & Van Every, 1999). In other words, communication, and organizations are mutually constitutive and constituted. In this context, ‘communication’ exists both prior to and post ‘organization.’ It shapes and is shaped by the context in which structural forms emerge (see, e.g., Putnam & Nicotera, 2009). Communication scholars, sociolinguists, organizational theorists, and philosophers have long recognized the important roles language and communication play in shaping society and how it constitutes reality in general (see Carey, 2002; Gramsci, 1971; Foucault, 1972; Craig, 1999; Weick, 1995; Putnam & Nicotera, 2009; McPhee & Zaug, 2009; Fairclough, 1992). Along similar, lines Christensen, Morsing, and Thyssen (2013) have argued that CSR communication, whether deemed to be superficial or authentic, is aspirational talk that has the *potential* to stimulate improvements in corporate systems, processes, and actions.

In the current study, the researcher sought to ascertain the link between corporate sustainability practices, the (non)communication of those efforts, and risk perceptions in Ghana’s petroleum production region. Thus, it is proposed that the CSF is a useful

framework for assessing how organizations (in this case Tullow) discursively constitute *issues of sustainability* and its *stakeholders*.

Regarding the relationship—difference or similarity— between the use of the CSF in this dissertation and other conceptualizations of corporate responsibility, it needs to be stated that this conceptualization of CSR does not reject earlier definitions of corporate responsibility; it builds on them. For example, the CSF fully embraces Davis' (1967) view that social responsibility transcends person-to-person efforts through the emphasis of the consequences institutional actions have on whole social systems. It also does not reject Carroll's (1999) four-component (economic, legal, ethical, and discretionary) definition of corporate responsibility, but it does not see it as a clear framework for analyses. Thus, CS helps to operationalize and offer a broader, cleaner, universally applicable framework for measuring and analyzing corporate responsibility actions and communication. In Carroll's model, for example, when a discretionary action is taken in the economic interest of the organization, where in the model should it be placed? Similarly, the corporate sustainability model may have similar overlaps between its components, for example between the economic and social dimensions. However, the model (when visualized as three overlapping circles) anticipates and fully recognizes the linkages between social, economic and environmental components of corporate (and development) processes and actions.

Based on the concept of corporate sustainability — that organizations, in the performance of their economic functions, present environmental, economic and social risks, and they can only be said to be sustainable to the extent that they are taking steps to minimize those risks and enhance benefits — this dissertation, therefore, addresses this

general question: Is Tullow Oil Ghana as a corporation ensuring corporate sustainability? It also examines the amplification or attenuation effect of corporate sustainability on risk perceptions. More specific questions are outlined later in this chapter.

Review of Related Studies

So far, this Chapter has discussed the theoretical and conceptual foundations of this research. In the process, some empirical studies were also discussed. This section further elaborates on the empirical foundations of the dissertation.

Impact of Oil Transnational Corporations and CSR in Africa

The fossil fuel industry is a powerful driving force for economic development of oil-rich nations at the macro level. It also poses enormous threats, including air pollution, oil spills, injuries, and deaths (Spence, 2011). The consequences of transnational corporations drilling for oil in developing countries have been well documented. For example, in Nigeria, Africa's most populous country and largest oil producer, there has been enormous concern about Shell's and Chevron's practices (Manby, n.d.; Alabi & Ntukekpo, 2012). Again, with Nigeria as the most cited case, investments in the petroleum industry have not been met with corresponding socioeconomic development. Rather than enhancing the lives of people, the exploitation of natural resources has benefited a few, while the majority of people continue to live in poverty. As Alabi and Ntukekpo (2012) observe, the poverty level in communities of the Niger Delta is higher than the national average.

Although oil companies have been resources for social and infrastructural developments such as building schools and clinics in rural and deprived areas, they still impose some negative social consequences. Critical concerns about the oil industry's social development interventions include the appropriateness of such social interventions and the extent to which locals are involved in the decision-making process. In addition, the exploitation of oil resources often becomes an avenue of political corruption. For example, Shell in Nigeria has received a lot of criticism for its role in and support for military regimes (Manby, n.d.).

The effects of natural resource extraction in general and petroleum activities in particular on the natural environment are enormous and cannot be overemphasized. Summarizing the environmental impact of oil activities, Tuodolo (2009, p. 537) observed that:

In Nembe, oil activities have caused serious damage to the environment. There have been several oil spills from well-heads, flow stations and pipelines; discharge of drilling and production waste; and gas flared from the different oil fields - all occurring on / in the land, sea, creeks and air of Nembe. Farmlands and fishponds are destroyed in the process; forest and sea animals and plants are destroyed or forced to migrate; and the air is polluted.

Ecological impacts have negative consequences for the general well being of people. As Tuodolo shows, the environmental degradation in Nembe leads to disease, low farm production and fish stock, food shortages, and their attendant implications. Despite the social, economic, and environmental impacts of the petroleum production industry, the industry has a lot to say about how much CSR it does. The notion that companies have responsibilities to the community at large other than to make money (i.e., corporate social responsibility) has gained global currency. But in parts of the world where transnational

corporations often have more revenue and capital than nation states, CSR is even more consequential (Manby, n.d.). Studies that have examined corporate performance in the oil industry have often focused on either the negative impacts (e.g., Manby, n.d.; Alabi & Ntukekpo, 2012), the positive contributions of the sector to social-economic development (e.g., Tuodolo, 2009), motivations for CSR (e.g., Ettenborough & Shyne, 2003), or CSR messages and community relations (Alabi & Ntukekpo, 2012). To be able to make a more meaningful and real claim about corporate social responsibility requires a broader framework of analysis, which recognises both the net benefits and negative consequences of corporate processes along the entire value chain. Such a holistic framework of analysis, capturing both the hazards and the benefits, is not common in the current literature on CSR. This is where this project's conceptualization of corporate sustainability as the balancing of social, economic, and environmental risks and benefits is significant. It points to the importance of economic, as well as social and environmental development.

CSR Communication as Strategy and/or Ethics¹⁴

CSR is important not only because of the sheer power of businesses in society (Davis, 1960), but also for strategic business reasons (Porter & Kramer, 2002). As observed earlier in this chapter, the CSR concept has gained much traction among business owners, executives, policy makers, as well as consumers. Apart from consciously incorporating CSR into their organizational processes, businesses hardly stop short of using their CSR activities for marketing, advertising, public relations, product

¹⁴ Portions of this section were included in a paper presented at the Association of Educators the Association for Education in Journalism and Mass Communication Conference in Montreal, Canada (see Ofori-Parku, 2014).

packaging, CSR and sustainability reporting, and even recruitment activities (e.g., Luo & Bhattacharya, 2006; Crespo, & del Bosque, 2005; Kolk, 2003; Tate, Ellram, & Kirchoff, 2010). Despite the increasing application of CSR in such communication efforts, CSR communication has been shown to be a double-edged sword, yielding positive and negative results under certain conditions. Two questions arise:

First, under what conditions does CSR communication benefit business organizations and vice versa? Luo and Bhattacharya (2006), for example, found that *innovativeness* capability of a business organization is an important determinant of whether CSR initiatives used in marketing would yield higher market returns or not. In less innovative firms, CSR decreased customer satisfaction levels, which ultimately reduced the businesses' financial returns. Becker-Olsen, Cudmore and Hill (2005) have also identified the extent to which CSR actions *fit* business type and perceived CSR *motivation* as important influences on consumers' reported purchase intentions. Thus, people are generally less favorably disposed to business organizations when there is a perceived low fit between CSR initiatives and firm type. Conversely, overall corporate reputation becomes less favorable when firms' CSR efforts are seen as profit-motivated. Despite profit motivation's negative impact, when these two factors (fit and motivation) are jointly examined, notwithstanding how consumers perceive a business firm's motivation (i.e. profit or socially motivated), low-fit initiatives have been found to negatively impact consumer beliefs, attitudes, and purchase intentions. As curious as these results may seem, other researchers (e.g. Foreh & Grier, 2003) have found similar outcomes. And Fiske and Taylor (1991), among others, have explained the underlying

mechanisms for this phenomenon. These suggest that strategic use of CSR for business goals is a nuanced endeavor, requiring much tact and deliberation.

The second question that arises is this: Under what conditions does CSR communication merely function as a deceptive tool? And when does it truly enhance the well-being of local communities, especially? Some scholars suggest that CSR if not *solely* driven by a concern for societal welfare for its own sake is problematic (e.g. Masaka, 2008; Frankental, 2001; L'Etang, 1994, 1996; Bartlett, 2011). A logical extension of this position is that CSR communication is inherently or at least potentially unethical — exploitative. For example, Frankental (2001) argues that considering the inherent paradoxes in CSR, it can only be described as a public relations (PR) invention. Like Frankental, L'Etang (1996, 1994) claims that using CSR for PR ends raises moral concerns. To L'Etang, “Where self-interest plays a part in the motivation of the action, then that action is [merely] prudential and cannot be regarded as a morally right action” (L'Etang, 1996, p. 83). Similarly, Masaka (2008) condemned Carroll's (1999) voluntary and instrumental view of corporate philanthropy because such use of philanthropy views social goals as means to enhance business objectives. Also, it has been observed that CSR and corporate sustainability, especially in the extractive industry, are corporate *attempts* to ameliorate community resistance and demands (see e.g., Garvin, McGee, Smoyer-Tomic, & Aubynn, 2009; Jenkins, 2004 and Schaefer, 2004). In their study about CSR in Ghana's mining industry, for example, Garvin et al. found that factors such as socio-economic conditions, government practices, perceived impact of mining activities, and perceived resource ownership influence community expectations that mining companies should actively engage in development projects, which would then enhance residents'

well-being. Consequently, CSR projects are attempts to meet public expectations and avoid conflicts. Garvin et al. also observe that community-based CSR “*creates, sustains, and reinforces*” processes of globalization via “local-international linkages ” (p. 583). These linkages manifest through the “insertion” and “expansion” of global multinationals “into the governmental lacuna” in previously ‘unknown’ regions of the world (p. 583). Clearly, despite businesses’ (in general) and MNCs’ (in particular) ability/potential to address important community concerns, needs, and public policy issues, corporate responsiveness is not necessarily equivalent to ethical (i.e. appropriate) corporate behavior. Thus, responsiveness as a means of resisting community resistance could easily be or become a means to evade responsibility, while creating a semblance of ethical corporate behavior. Crane et al., (2008) eloquently articulate this view when they stated that, although responsiveness is a democratic ideal, “We cannot ... presume that the ability to integrate critical stakeholders into mutually binding dialogues, to respect their voices, to listen to their concerns, and to respond their demands, and so on, *automatically* represents a spirit of true responsibility” (p. 500-501, emphasis added).

From the foregoing brief discussion of the literature, it can be observed that corporate social responsibility (and communication of same) does not always translate into corporate success, and more importantly societal well-being. It can complicate things. Conversely, given the centrality of businesses in an increasingly globalizing world, arguing that corporate responsibility and CSR communication is inherently unethically, while well intended, leads to a fatalism that ought to be eschewed.

Measuring and Predicting Risk Perception

As mentioned earlier, perceptions of risks associated with oil drilling and production in Ghana have not been studied. However, a substantial amount of work on risk perceptions has been conducted in other settings and within sociological, psychological (psychometric), and cultural perspectives, with the psychometric perspectives yielding the most insights (Trumbo, 2002). As Slovic (2000b) explains, research using the psychometric paradigm shows that risk perception is quantifiable and predictable using taxonomies such as risk characteristics, similarities and differences among groups, and the nature of the messages being framed. On the taxonomies of risks, Slovic, Fischhoff and Lichtenstein (1980; 1981; 1982) found that knowing what individuals think about risk characteristics helps predict the perceptions those individuals hold about the risk issues. For example, risk characteristics such as dreadfulness (for example, of nuclear weapons); voluntariness of exposure (for example, to smoking); familiarity (for example, of car accidents); control or choice (for example, over vaccines); catastrophic potential (for example, of nuclear power), whether risks are known to science, or signal value (for example, of accident), makes it possible to predict individuals' risk perceptions on those issues. Categorizing 15 risk characteristics along two dimensions —knowledge and dread —Slovic et al. (1980) showed that these two dimensions of risk features are predictive of risk perceptions. Slovic et al. use “dread” to broadly refer to the risk features that evoke a feeling of fright, and “knowledge” (i.e., known-unknown dimension) is used to capture those features that relate to whether the risks are known or unknown to people.

Using these two dimensions to predict risk perceptions means those risk issues that are judged to be “dreadful” and “unknown” are more likely to be judged as risky than those judged to be less dreadful and known. In their 1981 paper, Slovic and his colleagues used the position of risk issues within the knowledge-dread factor space to forecast the acceptance and/opposition to risk issues.

On similarities and differences among groups, a significant difference has been found between laypersons’ and experts’ risk perceptions, with laypersons often overestimating risk perceptions compared to experts. Experts’ risk judgments are more highly correlated with technical estimates of the likelihood of hazard while laypersons’ risk perceptions and judgments are often based on risk characteristics (see Slovic, 2000).

Another major theme in research within the psychometric paradigm is the role of emotions, broadly referred to as affect, which serves as a cognitive shortcut (heuristic), in people’s judgments about the risk issues. In a world of uncertainty, people employ cognitive rules of thumb (in this case, affect heuristics) for sense making (Slovic, Finucane, Peters, & MacGregor, 2004, p. 2). Such affective responses are instantaneous and occur automatically. In his 2010 book *The Feeling of Risk*, Paul Slovic presents years of research on risk perception and argues that emotions constitute an important component of risk perceptions and therefore ought to be taken into consideration in risk communication efforts.

Other studies also suggest that the gain versus loss framing of risk information influences risk perceptions. For example McNeil, Pauker, Sox, and Tversky (1982) found that framing the consequences of a surgery as opposed to radiation therapy for cancer

treatments as 68 percent probability of surviving versus 32 percent probability of dying resulted in a substantially higher preference for surgery. Interestingly, the framing effect was significant for both experienced physicians and patients.

Besides a few studies (e.g., Dake, 1990; Wildavsky & Dake, 1990; Peters & Slovic, 1996), the empirical support for Douglas and Wildavsky's Cultural Theory of Risk is not widespread. However, the cultural cognition model has received substantial empirical support on risk issues such as global warming and climate change, nanotechnology, gun control, and smoking risks, among others. In separate studies on nanotechnology researchers have found that learning more about nanotechnology does not lead to a homogenous perception of risks among people with different cultural values. Cultural values were found to be an orienting disposition (see, e.g., Kahan & Rejeski, 2009; Kahan et al., 2009; Kahan, Slovic, Braman, Gastil, Cohen, & Kysar, 2008). Hierarchists and individualists perceived lower risks, while egalitarians and communitarians perceived higher risks. The study also found that exposure to the same amount and type of information resulted in hierarchists and individualists perceiving higher benefits (and lower risks) while egalitarians and communitarians perceived higher risks (and lower benefits) — a phenomenon called biased assimilation and polarization. Although the lack of public consensus on climate change and nuclear power is sometimes blamed on the lack of comprehension of scientific information (i.e., science literacy), a 2012 study suggests that comprehension of scientific information may, instead, be a polarizing factor (Kahan, Peters, Wittlin, Slovic, Ouellette, Braman, & Mandel, 2012). Science literacy was measured using a set of standard questions that tested subjects' understanding of basic science. Researchers have also found that individuals with higher

comprehension of science and numeracy skills are more likely to engage in culturally motivated cognition than those with lower comprehension of science (Kahan, Jenkins-Smith, & Braman, 2011), and that affect mediates the effects of cultural worldviews on risk perceptions (e.g., Kahan et al., 2009).

The polarizing effect of cultural values on public perceptions is not only true when culture is measured in terms of hierarchy, egalitarianism, market orientation, individualism, or communitarianism. For example, in a 2014 experiment¹⁵ among a nationally representative sample in the United States, Anderson, Brossard, Scheufele, Xenos, and Ladwig found no direct link between exposure to an uncivil blog and nanotechnology risk perceptions. Similarly, they found no *direct* link between value predispositions such as religiosity and ideology, and nanotechnology risk perceptions. However, a look at the interaction between religiosity and exposure to online incivility showed that online religiosity (combined with exposure to incivility) did have a polarizing effect on how the public perceived nanotechnology risks. Anderson et al. observed that: “Among those exposed to uncivil comments, those with high levels of religiosity were more likely to report higher levels of risk perception and those with low levels of religiosity were more likely to report lower levels of risk perception” (p. 380). Besides Anderson and others’ (2014) study, previous studies (e.g., Sjöberg, 2004; Brossard & Nisbet, 2007) suggest that in some cases there may be a link between religiosity and beliefs in technology. For example, Sjöberg found that persons who self identify as highly religious tend to have higher risk perceptions that the average person, if they see science (i.e., technology) as trying to usurp God’s authority.

¹⁵ This study, which employed a nationally representative sample ($N=2,339$) in the United States, examined the effects of online incivility on public attitudes toward nanotechnology.

Research Questions

This researchers' search so far has not found any study on Cultural Theory and risks in Ghana. Although the propositions of Cultural Theory in general have been applied to studies in Africa, none of such studies have applied the cultural cognition model (which operates within the psychometric paradigm). In view of this, this dissertation poses no specific hypotheses with regards to the direction of the relationship between public attitudes, perceptions, and cultural values. However, based on the rudimentary postulates of the cultural cognition model, Social Amplification of Risk Framework, and the concept of corporate sustainability, the following questions are posed:

RQ1: Do different cultural worldviews predict different perceptions of environmental, economic, and social risks associated with oil drilling activities offshore Cape Three Point? This question concerned the applicability of existing cultural worldview measures to the Ghanaian population of interest. The current study set out to ascertain whether scales that have successfully measured cultural dimensions and been used to predict risk perceptions in other cultures, especially the United States, would be valid measures of cultural worldviews in the Ghanaian context, and predict risk perceptions in similar patterns.

RQ2: Does affect influence risk perceptions above and beyond cultural worldview's influence on risk perceptions?

RQ3: Is Tullow Oil engaging in corporate sustainability actions, and is it communicating those actions? With this question, the researcher was interested in

ascertaining Tullow Oil's corporate sustainability and risk communication practices and texts.

RQ4: What are the *formal* and *informal* modes of risk attenuation and amplification? The information networks that were of interest to this study include mass media, civil society groups, fishermen/fishermen association, and friendship ties.

RQ5: Does perceived corporate sustainability attenuate or amplify people's risk perceptions?

CHAPTER III

RESEARCH METHODS

Overview

This research project was conducted in four phases. In the first phase, the researcher spent three months doing extensive fieldwork in the study areas in order to observe the local culture and people's everyday experience with the petroleum production activities. In the second phase, the researcher spent one and half months conducting a one-on-one survey among a representative sample of residents in the study area (N=150). The third phase entailed semi-structured interviews with corporate and civil society officials. In the final phase of this dissertation, document and archival information pertaining to Tullow Oil's corporate sustainability was analyzed through a close reading. The scanty local media reports on risk and corporate sustainability issues in Ghana's offshore petroleum industry were also content analyzed.

Research Site

The study was conducted in the Jomoro District (one of six coastal districts adjoining Ghana's offshore production region) in the Western Region of Ghana. The other five districts are Shama, Ahanta West, Nzema East, Ellembelle, and Sekondi-Takoradi. Coastal districts are the focus of the study because they are within the closest proximity to the offshore oil region and are therefore likely to experience the immediate social, environmental, and economic impact of oil production —if there are any.

Since the aim of the project was to observe the overall perceptions in these districts, but it will be unreasonable to speak to everybody, Half Assini the District Capital was selected after preliminary visits to the six districts. During formative interviews with residents, Jomoro and Ellembelle Districts often came up as places where the impacts of petroleum activities are most visible. After further checks it was found that the local residents cited Ellembelle mainly because of a gas processing plant (a separate government project), which had generated much agitation.¹⁶ In order to not conflate the issues and concerns pertaining to the gas processing project and the offshore petroleum activities (which are similar in some ways but also different on other ways), the Jomoro District was selected as the primary site for this project.

Besides petroleum resources, the Western Region in general is endowed with enormous natural resources such as gold, bauxite, manganese, timber, cocoa, etc. — all major foreign exchange earners for the country, yet it is one of the poorest regions of the country. Regarding economic activities, according to Ghana's 2010 population census, 41.3 percent of the Ghanaian population aged 18 years and older are engaged in agriculture and fishery-related economic activities. The service sector employs 21 percent of the working population while 15.2 percent are craft workers. This national dynamic is also true for the Western Region. There are no official figures for district assemblies however, based on the researcher's first hand knowledge of the study site, residents of Shama, Ahanta West, Jomoro, Nzema East, Ellembelle, and Sekondi-Takoradi Districts

¹⁶ Interestingly, the conflict here was not because residents did not want the gas processing plant to be laid due to perceived environmental impacts. These debates and contentions were more about which town or local community has the *right* to own the processing plant, an indication of broader expectations about the potential the oil and gas industry in general has for the economic development of local communities — a subject that also features in the dissertations' findings.

are involved in fishing-related activities (men go to sea; women sell fresh and smoked fish), farming, trading, or service-related activities.

In terms of culture, with the exception of the more cosmopolitan Sekondi-Takoradi, majority of the residents of the other five districts are mainly indigenous Nzemas, Ahantas, and Fantes, and therefore speak Nzema, Ahanta, and Fante (all Akan languages).

Data Collection Methods

To address this project's research questions, the researcher employed a combination of ethnographic field techniques such as interviews and observations to identify relevant cultural values and orientations among local residents. The interviews were also employed to elicit and elucidate the cultural meanings and understandings that underpin how people experience and think about the offshore oil activities as well as Tullow Oil's corporate sustainability initiatives. This was followed by a quantitative field survey to measure risk perceptions, risk-related informational sources, and perceived corporate responsibility/sustainability. Data on corporate sustainability was collected through interviews with officials of Tullow Oil, district assemblies, a local environmental NGO, opinion leaders, and journalists working in the field. This information was supplemented by a close reading and analysis of Tullow Oil's website, CR Reports, and press releases from 2008 and 2014, and a review of international agencies and organizations (such the IMF, World Bank, and the Extractive Industries Transparency Initiative, UN Global Compact, etc.) publications on Ghana's oil sector.

Formative Research and Scale Design

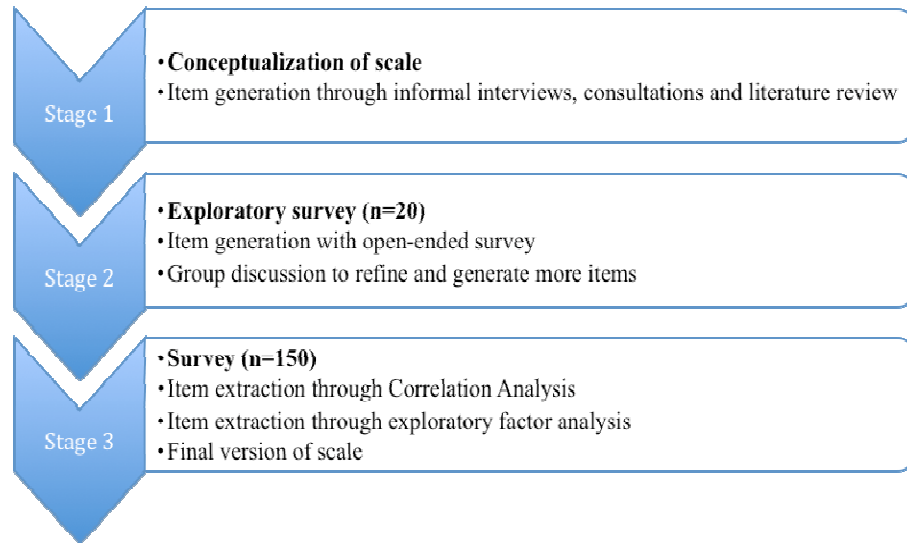
Prior to the survey, the researcher conducted a preliminary study. First, key stakeholders including officials of a local non-governmental organization (NGO), opinion leaders, and a journalists in the communities were identified and interviewed about public concerns about environmental health risks associated with the oil production activities on one hand, and Tullow Oil's corporate sustainability practices on the other hand. The interviewees straddled what Lindlof and Taylor (2011) referred to as "informants" and "respondents." As informants, the interviewees furnished the researcher with information about the 'scene'— its "history, customs, and rituals; the local 'lingo'; the identities and actions of the key players; and so forth" (p. 177). As respondents, they spoke mostly about themselves—their attitudes, opinions, and experiences. This preliminary study not only informed the preparation of survey instruments, but also provided complementary qualitative insights into the practices and impact of oil production activities. The scale development process is described in Figure 4.

Survey Population, Sample, and Sampling Procedure

According to the 2010 Ghana Population Census, the total number of people living in the Jomoro District is 150,107 (Ghana Statistical Service, 2012). No official estimates for Half Assini the district capital were found. Since there is no existing sample frame, for this study, a multi-stage, cluster sampling technique was used to randomly sample 150 respondents above 18 years of age who are resident in Half Assini ($M_{(age)} = 29.7$; Male=49.3%; Female = 50.7%). Close to eight out of every 10 persons (76.5%) spoke English.

Figure 4

The Scale Construction Process



Adapted from Turker (2008).

With respect to the educational level of the respondents, 2.2 percent had never had a formal education and 13.2% had received primary education (i.e., elementary school). Close to 80 percent (77.2%) had had some senior high school education, 4.4 percent had had some college education, and close to three percent (2.9%) had been to graduate school. Occupation wise, the sample included fishermen/fishmongers (4.5%); artisans such as carpenters, bakers, seamstresses, and vulcanizers (11.9%); traders and students (26.6% each); formal sector employers (8.2%); and farmers (2.2%). Close to 12 percent (11.9%).

The sample size ($N=150$), although relatively small, is adequate for predictions at 95 percent confidence interval and 5 percent margin of error.¹⁷ A multi-stage, cluster sampling approach is a proven, robust way of generating representative samples in

¹⁷ The population size of the entire Jomoro District is about 150,100 (Ghana Statistical Service, 2010). There are not official figures for Half Assini, but unofficial estimates peg the population size at about 5,000.

regions of the world where sample frames are non-existent. It is used by Pew Global Attitudes, Global Media Monitoring Project, Annenberg Center for Global Communication Studies, and multilateral institutions such as the World Health Organization (WHO) (see Bennett et al., 1991). In a multistage cluster sample, the entire population (in this case the Half Assini population) is treated as made up different clusters. Some of these clusters are randomly selected and used as the bases to subsequently select households from which individuals chosen and interviewed (see Kalton, 1983; Bennett, Woods, Liyanage, & Smith, 1991; Fisher-Giorlando, 1992). For the current study, first, the six coastal districts were selected and Half Assini (in the Jomoro District) was purposively selected. In half Assini, the researcher divided the entire town two aggregate clusters. Aggregate cluster one comprised all houses to the left of a major road that runs through the town, and the second aggregate comprised all houses to the right of the major road. Each aggregate cluster had eight sub-clusters, making 16 clusters in all. Second, using a lottery method, the researcher randomly selected four clusters from each cluster aggregate. Thus, in all, eight clusters were randomly sampled. Third, from each of the randomly selected clusters, individual houses were selected. And from each house, questionnaires were administered to individuals 18 years and older. In order to enhance the overall sample size, quotas were not assigned to the clusters. The surveys were administered face-to-face. Maximum time spent administering the survey was 120 minutes and the minimum was 25 minutes ($M=50.3$).¹⁸

¹⁸ There was no relationship between time spent administering and responding to the questions and the outcome variables of concern in this research.

Survey Test Instrument

For the survey, the questionnaire included cultural worldview scale items, environmental, economic, social risk/benefit perception scale items, awareness of corporate sustainability initiatives, Tullow Oil's perceived corporate sustainability, public trust (for Tullow), information sources and media use, self-reported affect, and mental images about Tullow Oil and Ghana's offshore oil production and their affective components. It also included behavior intentions pertaining to fishing near the oil rig, oil spill response actions, and participating in protests against Tullow Oil and its partners' handling of risk concerns. To place the Tullow Oil risk perception in a broader perspective, the questionnaire included a set of additional risk items such as GMO, financial risks, HIV/AIDS, malaria, flooding, car accidents, and climate change. All the items on the questionnaire were anchored on a seven-point strongly disagree (1)-strongly agree (7) Likert scale. (See Appendix D for the complete questionnaire.) The following measures were used.

Psychological sense of community (PSoC) measures. The study measured the extent to which individuals are attached to their local community in three different ways: emotional tone used to talk about their community ($M= 9.97$; $SD=3.94$; $\alpha=.92$), individual sense of community ($M= 10.95$; $SD=3.18$; $\alpha=.68$), and community integration ($M= 18.29$; $SD=3.13$; $\alpha=.65$). The items were adapted from the literature (e.g., MacMillan & Chavis, 1986; Irwin, Simmons, & Walker, 1999; Lima & Castro, 2005) and tested as part of this research project. The PSoC contained items such as "I feel good about this community," "I feel strongly about this community," "I have lived in this community for a long time." See Appendix C complete scale items.

Cultural preservation worldview measure. This measure was adapted from Schwartz' (1992, 1994) body of work on global cultural values. This scale measured people's latent disposition towards preserving their general way of life, including environment, security, conformity, and respect for authority ($M= 25.9$; $SD=2.67$; $\alpha=.65$)

Ghanaian cultural cognition worldview scale (GCCWS). The GCCWS had three subscales: one grid and two group components. The grid dimension assessed people's latent disposition toward equity and fairness, with egalitarianism (low grid) and hierarchy (high grid) as two ends of the conceptual continuum ($M= 26.49$; $SD=51.15$; $\alpha=.94$). The group dimensions measured latent orientations toward government regulation of corporate actions ($M= 5.13$; $SD=2.91$; $\alpha=.77$) and corporate autonomy ($M= 5.54$; $SD=3.43$; $\alpha=.81$).

Affective rating of Tullow. To assess the feelings (i.e., affect) local residents associate with Tullow Oil, this question was asked: "Think about Tullow Oil for a moment. When you hear the words 'Tullow Oil,' what is the first word or image that comes to mind? ... The second?Any other?" This elicited a minimum of one image and a maximum of three images. And to measure overall affect toward Tullow Oil as a corporate entity, a composite scale was constructed based on individuals' affective rating of images they associated with the firm ($M= 11.81$; $SD=3.61$; $\alpha=.90$) (see Peters & Slovic, 1996; Leiserowitz, 2006 for similar approaches). The ratings were anchored on a five-point scale (1= very negative, 5= very positive).

Affective rating of offshore oil production. In addition to affect toward Tullow Oil, the researcher also measured local residents' affect toward the offshore oil production in general. Similar to how affective orientation toward Tullow Oil was assessed, this

question was posed: “Think about Ghana’s ‘offshore petroleum production’ for a moment. When you hear the words ‘offshore petroleum production,’ what is the first word or image that comes to mind? ...The second?... Any other?” An offshore oil production affect composite scale was constructed and used for subsequent analyses ($M=13.24$; $SD=2.56$; $\alpha=.84$). The ratings were anchored on a five-point scale (1= very negative, 5= very positive).

Perceived corporate sustainability (reputation) measure. Two scales adapted from the literature (e.g., Walsh, Beatty, & Shiu, 2009; Walsh, & Beatty, 2007) were tested and used to assess the perceptions individuals held about Tullow Oil. The scales were corporate leadership and stewardship ($\alpha= .83$, $M=19.57$, $SD = 5.31$) and community-based corporate reputation ($\alpha= .77$, and $M=9.43$, $SD = 3.20$). See Appendix C for all scale items.

Corporate trust. In addition to the two perceived CSR measures, the study also assessed the extent to which respondents viewed Tullow Oil as a “reliable” company ($M=22.35$, $SD= 7.24$, and $\alpha= .90$). Since reliability is an important attribute of a “responsible corporation (see Walsh, Beatty, & Shiu, 2009), this measure was used as a proxy for perceived CSR.

Industrial strength risk perception (ISM) measure. This measure assessed individuals’ general views on how much risk the offshore oil production poses for their community and the country as a whole. It was one of four ways risk perception was measured ($M= 21$; $SD=5.82$; $\alpha=.88$). All four questions that constituted this scale were anchored on a seven-point scale, where a lower score represented a low risk perception and a larger score represented higher risk perceptions. This scale was constructed based

on questions frequently used by researchers on the cultural cognition project (e.g., Kahan, Jenkins-Smith, & Braman, 2011; Kahan et al., 2009; Kahan et al., 2008). As Kahan (2011) shows, a single item in the ISM correlates between 0.75 and 0.87 with a composite scale, which means a single item is still a relatively robust measure of risk perceptions.

Perceived benefits of oil production. This was the reverse of the risk perception measure. It assessed individuals' general views on how much benefits would accrue from Ghana oil exploration and production ($M= 20.8$; $SD=5.10$; $\alpha=.606$).

Environmental, social, and economic concern. In addition to the ISM, risk perception was measured as environmental concern, social concern, and economic concern. The environmental concerns focused mainly on (possible) effects on the natural environment ($M= 23.29$; $SD=5.09$; $\alpha=.75$); and social concerns emphasize the effects oil exploration activities have — or could have — on the general way of life in adjoining communities ($M= 34.4.8$; $SD=8.6$; $\alpha=.85$). The economic concerns include net livelihood implications at the micro level as well as macroeconomic effects such as lack of monetary flow to the public sector ($M= 11.63$; $SD=3.0$; $\alpha=.63$).

Support for offshore oil production as a development imperative. The study also included a measure of the extent to which people thought the offshore oil production was a development imperative for their local community and Ghana as a whole ($M= 32.68$; $SD=49.32$; $\alpha=.87$).

Behavior intention. Unlike the single-item behavior intention (BI) measure often used in advertising and consumer behavior literature, this study employed a three-item measure. Our scale captured respondents' willingness, likelihood, and frequency of engaging in particular behaviors. The behaviors assessed were oil spill response action

($M= 22.70$; $SD=35.92$; $\alpha=.90$), fishing near the oil rig ($M= 3.92$; $SD=3.31$; $\alpha=.98$), advice to someone not to fish near the oil rig ($M= 17.81$; $SD=17.06$; $\alpha=.77$), and support for a demonstration against Tullow Oil's handling of its social and environmental impacts ($M= 15.64$; $SD=21.16$; $\alpha=.87$).

Interviews

As explained earlier in this chapter, during the formative stage of this project, in-depth interviews were conducted with opinion leaders, some local residents, and journalists in the local communities to ascertain concerns people had about the potential/real risks posed by the offshore oil production and the bases of those perceptions as well as expectations and knowledge of Tullow Oil's CSR. Later on, corporate executives at Tullow Oil's headquarters and at the community-level were also interviewed to ascertain their views on public attitudes, concerns, and Tullow Oil's corporate sustainability efforts. In all, eight opinion leaders, 15 local residents, one journalist, two corporate executives, and two contract workers of Tullow Oil were interviewed.

For in-depth interviews to ascertain the corporate sustainability practices of Tullow Oil, this project derived questions from the three components of sustainable development (environment, social, and economic)¹⁹. This method is similar to the CSR

¹⁹ Borrowing from the CSR diagnostic tool, the environment component of corporate sustainability included: environmentally safe production, products and services; environmental impact assessment and management; and environmental reporting and management systems. The social component included health and safety of employees, labour standards, corruption and bribery, human rights, violence and conflict, social impact assessment and management, non-commercial community and stakeholder engagement, charitable giving, social investment, social reporting and management systems. And the economic component included questions on monetary flows to the public sector, employment, procurement and supply chain management, among others.

Diagnostic Tool (Warner, 2006)²⁰ developed by the Foreign Investment Advisory Service for the World Bank.

“Qualitative interviewing projects are especially good at describing social and political processes. That is, how things are and why they change (Rubin & Rubin, 2005, p. 2). In line with Mary Douglas’ idea of ‘implicit meaning’ or ‘implicit cosmology’ (Douglas, 1999), this project’s use of interviews as a data collection tool was rooted in interpretive constructionism. Interpretive constructionism is the view that people create and maintain meanings and definitions of social phenomena within cultural contexts (Rubin & Rubin, 2005). From this perspective, the interview process is seen as helping researchers access interviewees’ worldviews and experiences. Therefore, throughout the interview process, the researcher accessed, assessed, and analyzed the events informants/respondents had experienced and observed. The interpretive construction approach is commensurable with the general orientation and goals of this project because, as Rubin and Rubin explain, it helps researchers to build their understanding of social phenomena and processes by focusing on context-specific details.

Methods of Data Analysis

Survey Data Analysis

Survey data were analyzed in a fashion similar to earlier cultural cognition and risk perception studies, beginning with a principal component analysis, a preliminary analysis involving assigning subjects to worldviews on two cultural dimensions

²⁰ The diagnostic tool includes a fourth category, corporate governance. This dissertation, however, adheres to a three-component framework since the issues considered under the corporate governance umbrella are not exclusive to that category.

identified. For statistical testing, the scales were treated as continuous predictors of variance in a multiple regression analysis in order to conserve statistical power (Kahan et al., 2011) and avoid spurious statistical significance and/or failure to detect the relationship between variables (Maxwell & Delaney, 1993).

Interviews Data Analysis

Data from the interviews with corporate executives, opinion leaders, and local residents, were transcribed and qualitatively analyzed. The goal was to elucidate the broad socio-cultural meanings people were adducing from Tullow Oil's (and the offshore oil industry's) risks and impacts, and by so doing identify the plural rationalities that underpin people's views on the subject. In other words, the interviews helped ascertain the different ways people were *reasoning* about and *making sense* of (Weick, 1995) the environmental health risk and corporate sustainability issues pertaining to Ghana's offshore oil production.

Interpretive constructionism, as Rubin and Rubin (2005) explicate, helps interviewers to access interviewees' worldviews and events they have experienced and observed. Therefore, in analyzing the interview data, this study was interested in both the latent and manifest responses, using what Morgan et al. (2002) call the mental model approach to identify *justifications* for claims and counter claims, *attribution* responsibility and blame. This approach aligns with the Cultural Theory of Risks' view that risk perceptions go hand-in-hand with blame and accountability (Fardon, 1999).

The analyses followed standard processes (involving examining data, reducing it, sorting into categories and codes, and interpreting the categories) used by qualitative

researchers (see Lindlof & Taylor, 2011; Rubin & Rubin, 2005; Wimmer & Dominick, 2014). However, the data analysis did not begin at the end of data collection; it started in the field, during the interviewing process, using what Lindlof and Taylor call “in-process writing” (p. 244). Overall, the researcher was interested in constructing ‘symbolic links’ or tropes based on first-order meanings (direct responses) using this dissertation’s broad theoretical framework which emphasizes the role of both *experience* and *reason* (which constitute worldviews) in people’s interpretations of putatively risky phenomenon — explained in Chapter II. In presenting the outcome of the analyses, the researcher paid particular attention to exemplars (Atkinson, 1990; cited in Lindlof and Taylor, 2011).

Frame Analysis

News releases, media texts, and all publicly available information on Friends of the Nation’s (FoN) website (<http://fonghana.org>) were retrieved and their content analyzed. The goal was to ascertain FoN’s advocacy strategy (i.e., risk amplification and attenuation) by paying attention to which environmental health risk issues it was highlighting, and how the NGO was “framing” those issues. FoN was purposively selected as a case study of CSO involvement in sustainability advocacy, management, and decision-making because it is one of the foremost organizations in this space, especially regarding the environmental impact of offshore oil production on marine ecology. This was supplemented by an email interview and exchanges with an executive of FoN.

The frame analyses were based on Gamson (1992) and Entman’s (1993) notion of framing, which also aligns with the mental models approach (e.g., Morgan et al., 2002) and the idea of implicit meanings (e.g., Douglas, 1999) used to analyzed interview results.

According to researchers who employ framing analysis, focusing on elements such as information placement, repetition, exclusion, inclusion, and semiotics in media texts could help highlight what is *salient* and what is not (Gamson, 1992; Entman, 1993; Pan & Kosicki, 2001).

Both Gamson (1992) and Entman (1993) have proposed that one way frame can be analyzed and understood is by focusing on what they *do*, their function—how they construct social issues and phenomena. For example, Entman identified four elements of functional frames: they *define* problems, *diagnose* causes, make *moral judgments*, and suggest causal *remedies*. And, in any text (media or otherwise), one can identify frames by examining:

[T]he presence or absence of certain keywords, stock phrases, stereotyped images, sources of information, and sentences that provide thematically reinforcing clusters of facts or judgments (Entman, 1993, p. 52).

Thus, through a close reading of the press releases and other communication texts on FoN's website, devices such as word choices, metaphors, stock phrases, exemplars, descriptions, arguments, information sources, and visual images were analyzed (Gamson & Lasch, 1983; Entman, 1993). This was used to ascertain the “frames” FoN was employing to talk about (a) its engagements and advocacy, as well as (b) the environmental health risks and impacts Ghana's offshore oil production was having on local communities and marine ecology. Based on the analysis, the researcher also made inferences about the strategies FoN used in its policy advocacy, public engagement, and mobilization. Media and communication researchers have long explained how frames serve as schema for selecting and making sense of social phenomena. Hence, by examining the “implicit organizing ideas” or frames (Gamson, 1992, p. 3) in these news

releases and communication texts, this study determined how FoN, and for that matter CSOs, are helping individuals and collective social actors (especially policy and industry actors) make sense of the socio-ecological impacts of the petroleum production activities.

Critical Discourse Analysis

A key objective of this dissertation was to assess how Tullow Oil was communicating (i.e., discursively constructing) its corporate sustainability goals and actions, as well as environmental health risks that might accrue from its processes. Tullow Oil's website, press releases, and CSR reports from 2008 and 2012 were treated as texts for analysis through close reading, using critical discourse analysis (CDA) as a tool for analysis. Discourse analysis, as Mautner (2009) explains, refers to the systematic analysis of patterns in text, linking them to the context within which the text emanates and is used. And “to do so *critically* means unveiling and challenging taken-for-granted assumptions about language and the social, as well as recognizing discourse as a potentially powerful agent in change” (p. 124). Before this dissertation's CDA method is discussed in detail, I provide a brief justification for the decision to use CDA.

The idea that communication (in this case corporate sustainability communication) is *both* reproductive and potentially transformative of social relations, identities of individuals and organizations, social structures, and constructs (i.e., CCO) discussed in Chapter II (see also Fairhurst & Putnam, 2004; McPhee & Zaug, 2009; Weick, 1992) naturally lends itself to CDA. If organizations and their processes are an effect of communication—which is a core tenet of the CCO view—then communication has *power*. As Deetz and Mumby (1990; cited in McPhee & Zaug 2009, p. 25) observe,

“Power is an inevitable and constitutive element in all social and institutional interaction.” And, especially, as this study is dealing with corporate sustainability²¹ communication practices and texts by a multinational within the context of a developing country, a relationship that inherently has power asymmetries, frame analysis as used in analyzing FoN’s communication texts could be insightful. But this approach lacks the central ingredient — power, which the CDA naturally furnishes us with (Fairclough, 1992). In addition, the idea that language and social practice are “inextricably and dialectically linked,” which is central to CDA (Mautner, 2009, p. 123), is useful of this dissertation’s view of corporate sustainability actions as communication and communication as action. Thus, Tullow Oil’s communication was viewed as performing a social function of maintaining dominant notions of risk and sustainability, transforming them, or both. Now, the discourse analytical strategies employed in this study are discussed as follows.

This research used Reisigl and Wodak’s (2005, 2009) discourse historical approach (DHA). According to the proponents of DHA, it is a viable tool for investigating multifaceted phenomena that manifest asymmetrical relationships between actors “who assume different social positions [as experts or non experts], or belong to different social groups (Reisigl & Wodak, 2009, p. 88).²² It proposes that texts (whether visual, oral, or written) objectify actions. Hence, triangulation and paying attention to context are important for understanding and explaining the complexity of social phenomena under investigation. In line with this proposition, DHA is based on the concept of ‘context’ at

²¹ Sustainability as a whole and the role of corporations in sustainability is itself a site of ideological contexts, which makes it expedient to account for *power* in any analysis of corporate sustainability communication.

²² The definition here, even on the surface, appears commensurable with the central problem of this study.

different levels: descriptive (i.e., the immediate text, or text internal) and analytical (i.e., intertextuality, interdiscursivity,²³ institutional context/situation, and broader socio-political context-dependent) (see Reisigl & Wodak, 2005, 2009; Wodak, 2007; Seale, Gobo, Gubrium, & Silverman, 2009).

The current dissertation's analyses of Tullow Oil's corporate sustainability communication/practices were done in three layers. First, it identified specific contents on the discourse of corporate sustainability and environmental health risks. Second, it investigated discursive strategies used in the texts, and finally it identified specific "linguistic realizations" such as intensification and mitigations (Reisigl & Wodak, 2009, p. 93). Following analytical strategies proposed and used by Wodak and others, the dissertation's discourse analyses posed five questions (see Table 3) from which emanates five corresponding discursive *strategies*. In the language of DHA, *strategy* refers to a "more or less intentional plan of practices (including discursive practices) adopted to achieve a particular social, political, psychological, or linguistic goal (Reisigl & Wodak, 2009, p. 94). This notion of strategy corresponds with the view that communication as practiced by organizations (in this case Tullow) is deliberate (McPhee & Zaugg, 2009). Without doubt, Tullow Oil's corporate sustainability communication texts are outcomes of planned, coordinated, and deliberate processes and actions. This was done by using the communication texts to address the following questions in Table 3.

²³ *Intertextuality* refers to the idea that texts do not exist in isolation; they are linked to other texts. Similarly, *interdiscursivity* implies discourses are best understood by paying attention to how they are linked to other discourses in other discourse fields (Reisigl & Wodak, 2009).

Table 3

CDA Tools and their Corresponding Discursive Strategies

DHA Question	Discursive Strategy
How are persons, social actors, objects, processes, and issues linguistically referenced?	Nomination or referential strategies
What characteristics, features, and qualities, are attributed to the persons, objects, processes, etc. nominated?	Predication strategies
Which arguments are employed in talking about corporate sustainability and environmental health risks?	Argumentation strategies
From what point of view are the nominations, attributions, and arguments expressed?	Perspectivization strategies
Are the respective utterances intensified or mitigated?	Mitigation and intensification strategies

Adapted from Reisigl and Wodak (2009) and Seale et al. (2007). *Note.* Referential strategies refer to how and which social actors, phenomena, objects, and processes are named in a communication text — in this case CSR communication texts. Predication strategies refer to the attributes and characteristics that are ascribed to the named actors and phenomena. The third, argumentation strategies, justify attributions and predications. Perspectivization addresses how arguments are positioned. Intensification and mitigation strategies are used to qualify or modify the epistemic status of a proposition by sharpening it or toning it down.

In summary, CDA (specifically the DHA method) was used to assess how Tullow Oil was discursively constructing its corporate sustainability practices, and therefore how it was potentially constituting its own behaviors, processes, other social actors (i.e., stakeholders), and issues such as those pertaining to environmental health risks.

Human Subjects Research and Institutional Review Board

All interactions with human subjects strictly adhered to the regulations and ethical considerations set forth by the Research Compliance Services (RCS) at the University of Oregon. RCS reviewed all data collection methods that involved contacts with human subjects (i.e., the survey and interviews). The protocol (RCS#07312013.037) was granted an exempt status effective January 17, 2014, through January 16, 2019. Sylvester Senyo

Ofori-Parku was the primary and sole investigator for the study. He passed the necessary Collaborative IRB Training Initiative (CITI) on January 31 2012, expiring two years later.

In line with the approved IRB protocol, subjects were either systematically or purposively selected and the Invitation Letter was read to them. The Invitation Letter (Appendix A) contained a summary of the research, its risks and benefits, and participants' right to decline participation and/or completely withdraw during the course of the study. The subjects were then told that participating in the interview or questionnaire administration constituted their informed consent.

Conclusion

To address the central problem of this study — corporate sustainability communication, public risk perceptions and risk amplification — a triangulation approach, which included a survey, interviews, framing analysis, and critical discourse analysis were used.

In the next chapter (i.e., Chapter IV), interview and survey results on public (mainly community residents) perceptions of petroleum exploration and production activities offshore West Cape Three Point are presented. Broadly, it examines the experiential bases of public risk perceptions. Specifically, it looks at the cultural and affective influences on the survey residents' perceptions about the risks associated with Ghana's offshore oil activities. Chapter IV begins with findings from informal interviews that demonstrate how individual's social experiences manifest in how they think and feel about Ghana's offshore oil activities and the corporations that are involved in these activities. This is followed by quantitative results on how cultural worldview measures

and affective imagery relate to public perceptions of Ghana's offshore petroleum production activities. Since the scales that were employed in this study have not been used among an African (and for that matter a Ghanaian) population, the chapter also reports results from a scale adaptations/development and testing. The chapter develops in response to RQ1 and RQ2, which examine the association between worldviews, affect, and risk perception regarding Ghana's offshore petroleum exploration and production.

CHAPTER IV

THINKING AND TALKING ABOUT ENVIRONMENTAL HEALTH RISKS AND CORPORATE SUSTAINABILITY

The consequences of a hazardous [phenomenon] are perceived by individuals. These perceptions lead to personal and social responses depending on the personal values and convictions of the individuals and the social images and norms pertaining to the cultural interpretation of this [phenomenon] in a specific social situation and context (risk culture) — Ortwin Renn, 1992.

The oil industry has severally been described as the engine of the world economy (e.g., Wise, 1999; World Economic Forum, 2012; Rogoff, 2006).²⁴ While the world's richest countries are — unfortunately — the ones who consume and benefit the most from such petroleum resources (The World Bank Group 2015),²⁵ undoubtedly, developing countries that discover and produce oil and gas have the *potential* to grow their economies and embark on infrastructural development. Despite this promise, petroleum exploration activities pose enormous social, political, environmental, and economic risks — especially for developing countries that are characterized by weak institutional, legal, and governance frameworks. Thus, as argued in earlier chapters, petroleum exploration activities as seen in the Ghanaian case present both risks and a promise of benefits. Interestingly, the Chinese²⁶ character for risk (also crisis) fully captures this duality of the risk concept (What is risk, n.d.).

²⁴ According to Rogoff (2006), for example, “empirical estimates ... suggest that the doubling of oil price increases between 2003 and 2005 cumulatively lowered global output by at least 1.5% to date, or about a 750 billion dollars” (p. 1).

²⁵ According to World Bank estimates (The World Bank Group, 2015), energy consumption per capita is unequally distributed globally, to the disadvantage of low income countries.

²⁶The Chinese character for risk is a combination danger and opportunity.

At the empirical level, Alhakami and Slovic (1994) have long explained the inverse relationship between risks and benefits in people's minds, although they are often directly related in the real world. This perceived inverse relationship between risks and benefits could easily be construed as pointing to trade-offs. While this is one way to think about the duality of risks, an alternate perspective favored by this dissertation is: rather than viewing the risk-benefit linkage in terms of the necessity of trade-offs (for example, between the natural environment and economic gains), the concept presents an opportunity to escape what James C. Collins (2004) calls the 'the tyranny of *or* — reduce risks and maximize benefits. To Collins, by escaping the tyranny of *or*, we realize the 'genius of *and*.'

Formal risk analyses tend to focus on risk estimates based on probabilities. However, how people perceive such risks and the bases of their perceptions are increasingly recognized as necessary components of the risk assessment and management processes. Extant research has demonstrated the effects that cultural values — or more broadly cultural worldviews, affective orientations, and social factors such as media coverage have on how different people think about, relate to, address or support putatively risky technologies such as nuclear power (see Peters & Slovic, 1996; Finucane & Holup, 2005; Slovic et al., 2004) and environmental problems.

In this chapter, the researcher presents results on how residents in the Jomoro District (one of the six coastal districts closest to Ghana's offshore petroleum production field) perceive the risks and benefits associated with offshore petroleum exploration and production, how cultural worldviews (i.e., ideals about how things *should* work in the Ghanaian society), and top-of-the-mind mental imageries amplify or attenuate risk

perceptions. Based on interviews conducted during the formative stages of this project, I also present an analysis of two ways the local residents interviewed made judgments about the risks posed by Ghana's oil production activities: scapegoating and tacit knowing. The chapter also includes findings on the roles informal risk information networks such as news media, NGOs, other related institutions, and family and friends play in communicating about these risks. In view of the paucity of similar empirical (beyond anecdotal) studies that apply the Cultural Theory, in African contexts, this project first adapted and tested commonly used cultural worldview, cultural values, and CSR perception/corporate reputation measures. Findings from the interviews are first presented, followed by results of the scale development and/or testing process, and results pertaining to RQ1 and RQ2 questions posed in Chapter II.

Preliminary Results from Informal Interviews

This project started with semi-formal interviews with residents and opinion leaders in the Nzema East District (i.e., Axim) and the Jomoro District (i.e., Half Assini) in the Western Region of Ghana. The goal was to identify the main concerns, the bases of the concerns, and possible underlying cultural reasoning or worldviews in judgment formations. In addition, the researcher sought to assess the extent to which community residents were involved in environmental decision-making, and their perception of Tullow Oil's (and other Jubilee Partners) CSR, risk mitigation, and risk prevention strategies. First, I examine how environmental health, economics, and social risks are perceived.

Perceived Environmental, Social, and Economic Risks/Benefits

From the interviews, the range of issues local residents were concerned about include propriety or impropriety of erecting buffer zones (i.e., no fishing areas) within a demarcated radius from the oil rig and the floating production, storage and offloading (FPSO) unit, growing seaweeds along the coast, and the decline in the volume of fish that fishermen harvest at sea. Other concerns include increasing death of whales and other sea mammals, the outbreak of diseases, oil spillage, and high cost of living due to the influx of non-indigenes into the six coastal districts.

With respect to benefits associated with the petroleum production as a whole, and Tullow Oil's (and its partners) community development initiatives, the signals are mixed. A key theme in Tullow Oil's communication is that it is providing alternative livelihoods for fishermen and other local residents whose sources of livelihood had been adversely impacted by the petroleum exploration and production. However, the perception among the residents interviewed was that Tullow and its partners have not lived up to their promises.

Not catching enough fishes [due to the setting up of a buffer zone offshore, and growing sea weeds] is our fishermen's main problem. [The fishermen] were told that since the oil production would affect their business, they would be given alternative work for them to do; if you go fishing and you don't get the quantity of fish you want then it means you've got another work to do, but this didn't realise (sic).

Also, regarding benefits, impact mitigation, and corporate social responsibility (or social investment as Tullow calls it), the key informants interviewed acknowledged Tullow's efforts in this sphere. One person observed that:

I know– I learnt – they have been giving some scholarships, potable water, renovating some schools. They renovated part of the Science Resource Center and

some few other buildings at Half Assini Senior High School. And I learnt they are renovating some Junior High Schools for Half Assini Methodist, and then in other towns, a few ICT centers, etc.

They also confirmed that Tullow and its partners have organized training programs for local residents in areas such as modern fish smoking and preservation methods, batik making, and basic bookkeeping practices. However, the informants questioned the *value* and *usefulness* of the training programs. For example, a local resident quizzed:

What type of training are they giving them? Smoking. Fish smoking. ... I learnt they spent about GHC 5000 [equivalent of \$1800] on each person's training. But if you train the person, and after the training you don't give the person something — a little capital — to start business with, then, ... in fact there is no need for you to come and do that type of any training.

Other persons stated that:

Though [Tullow] did the training for them, let's ask ourselves that after the training what is next? Are our people benefiting from that type of training given them? Though they did the training there wasn't any capital to start [working with]. They taught them ... fish smoking, but when you go to sea and you don't get the fish [in the first place], then of what use the training?

There were other trainings — batik — and other types of training but they were all asking for capital ... Although there has been [some alternative livelihood] training, there is no capital for them to start [using their new skills].

To buttress this point, some of the interviewees explained that initially, Tullow and its partners were involved in infrastructural projects but have now turned to “capacity building.” Thus;

Because initially... [Tullow Oil and the Jubilee Partners such as Kosmos] Kosmos, for instance, renovated a dilapidated building, which ... had been abandoned and [now] they have rehabilitated it; it is being used as an accident and emergency center at Axim Hospital. Kosmos also rehabilitated one CHIP center –

Awuku CHIP Center. These are the things that we wanted them to do, but they decided to build capacity.

I think [the communities] can get more. I think they can get more. I personally do not even think that we are getting more. I think [Tullow Oil is] focusing on the basics but we have needs higher up.

As seen from the foregoing quote, there is a perception of (1) misplaced priorities, or (2) Tullow Oil and its partners choosing those projects and programs that are least costly to them, which also end up being least beneficial to the local communities.

Another theme that ran through most of the interviews was the politics of distributing development projects and resources. The perception was that political leaders (e.g., the Energy Minister) who come from particular communities along the West Coast are able to lobby some of the players in the petroleum industry and therefore end up concentrating development projects in their communities or districts. This sentiment is captured in the statement below:

You know Kojo Buah the Minister for Energy ... Tullow and the Jubilee Partners are all under him... There is also a gentleman called Sepa Yankey; he is in charge of this oil [Ghana Gas Company]... These people are able to lobby and get Tullow Oil and its partners to do a lot of things in their areas... So in terms of the distribution of facilities, there is so much bias... everything is located in those locations [where the politicians come from]... the thing is not well dispersed, and that is a concern. That is a big concern.

The next section presents an analysis of two ways people think about the social and environmental risks that pertain to the oil industry.

Two Ways of Thinking and Making Judgments about Offshore Oil Risks

While speaking with residents, opinion leaders, community leaders, activists, and other individuals in the study area, about the risks and benefits of Ghana's offshore oil exploration and production, the researcher identified differences in the way people reasoned and talked about the perceived social, economic, and environmental impacts. This ranged from what this dissertation terms "scapegoating" to "tacit knowing." This taxonomy is based on the idea of implicit cosmology, which is an underlying idea of Mary Douglas' Cultural Theory (see, for example Douglas, 1999; Fardon, 1999) and Morgan et al.'s (2002) mental models approach. It is important that the two mechanisms identified here are viewed as a continuum or overlapping categories rather than discrete ones. Also, the classification here is different from the dual processing mode of thinking, where choice and judgment under risk or uncertainty is characterized as based on either analysis (i.e., rationality) or experience (i.e., emotion) (see Slovic, 2000; Slovic et al., 2004; Petty, Cacioppo, & Schuman, 1983; Todorov, Chaiken, & Henderson, 2002). Whether individuals are scapegoating, using tacit knowledge, or somewhere in between, there is no reason to think some people are relying solely on reason, logic, or analysis while others are basing their perceptions and judgments on emotion, affect, or experience of any sort, as Damasio (2008) has demonstrated.

Scapegoating. This mode of reasoning and talking about the environmental risks associated with the offshore petroleum production became apparent during interviews with local residents in the focal community. The label "scapegoating" may connote a means-end, rational, analytical thinking approach to judgment under conditions of risk

and uncertainty. But the label is simply used in this study to represent a particular way of thinking and feeling about putatively risky issues. That is, risks, although far removed from causal factor(s), are seen as intricately linked in the minds of people. Thus, the fact that the perceived antecedent — the entity or person bearing the blame, Tullow — and the consequence — the perceived risks — might not be linked, is not trivial. This way of thinking *and* feeling about risks is as important as risks whose cause-effect links have been clearly established. It manifests in statements such as “who else should be responsible?” “Everyone knows they make a lot of money, ” and “... But they have enough money.” Thus, with scapegoating, Tullow Oil and its partners are not only a source of *contagion* but also a potential source of power that could fix societal problems. In the language of the Cultural Theory of Risk (e.g., Douglas, 2003), Tullow and its partners are both sources of *danger* and *purity*.

For example, in Axim, there were reports of people suffering from eye diseases such as conjunctivitis (i.e., red eye), colds, running nose, etc. and they attributed it oil production. As result of these concerns, the EPA was brought in, but they found no link between the health concerns and petroleum production activities. Interestingly, no one we interviewed said they have had any health issues due to the oil production. They did not even say they knew someone who had suffered some health consequences. As one key informant said, “To tell you the truth, I didn’t see anybody experiencing it. I just heard it. They were having running nose, red eyes, and the rest of them.” However, the perception of adverse effect was so pervasive that it warranted the attention of the EPA. This is an indication that there are no trivial risk perceptions. The mechanism at play here as well as the implications of scapegoating was not lost on one of the study’s informants:

The risk is also that any health related problem... is more likely to be linked to the oil activities. That is the danger... If you look at the environment, that is the newest thing that has been introduced... It is more of circumstantial evidence. Empirical. It is not solid, but that is the newest thing so they link the health problems to it.

The second way local residents thought and felt about the offshore oil production risk is what is referred to as ‘tacit knowing’ in this dissertation.

Tacit knowing. This concept was first proposed by Michael Polanyi in 1958 and was further laid out in his book *The Tacit Dimension*. In this book, ‘tacit knowing’ is encapsulated in the axiom that “we can know more than we can tell” (Polanyi, 1966, p. 4). Tacit knowing, in this study, is counterpoised to Herbert Simon’s concept of satisficing and bounded rationality (1947, 1956, 1982).²⁷ Before proceeding to illustrate how tacit knowing manifested in people’s risk perception formations as observed in Axim and Half Assini, it is important to briefly explain “satisficing,” in order to distinguish it from tacit knowing. Simon used the term “satisficing” to refer to the phenomenon where people (and animals) *choose* those paths that permit satisfaction at some specified level of needs. Instead of choosing the *best* means to one’s determinate needs, people choose the most *satisfactory* means. In fact, to Simon, an “organism, like those of the real world, has neither the senses nor the wits to discover an ‘optimal’ path—even assuming the concept of optimal to be clearly defined” (p. 136). This is clearly a rationality means-ends based conception of human cognition, and is therefore dialectical to Polanyi’s (1958, 1966) tacit knowing, as used in the current research.

²⁷ Satisficing as it pertains to decision-making, was first proposed and used by Herbert A. Simon (1947, 1956) in his *Administrative Behavior* and *Rational Choice and the Structure of the Environment*.

Tacit knowing as used to describe how local residents in the coastal communities adjoining Ghana's offshore oil region make judgments about the risks associated with oil activities, refers to a way of *thinking, feeling, and knowing* that take forms such as: "risks are uncertain, but how else can we explain it?" "this is something most people would agree with," "these concerns are valid on the face of it." Thus, the researcher is not arguing that people think about risks in certain ways —high or low—solely because they have a particular end in mind, as the concept of satisficing would imply. Rather, given the range of possibilities and based on their experience and knowledge²⁸ (whether rudimentary or sophisticated), they are able to rationalize why they think offshore oil production poses social, ecological, and economic risks that need to be addressed or mitigated.

The idea of tacit knowing as empirically observed in the interviews and face-to-face administering of questionnaires to close to 150 residents in Axim and Half Assini is akin to Pierre Bourdieu's (1990) idea of habitus.²⁹ As Collet (2009, p. 420) puts it, the "notion of habitus relies on the observation that in our most [un]conscious thoughts we cannot but take some things for granted" (Collet, 2009, p. 420). In the words of Bourdieu (1996, p. 1), habitus is a form of "practical knowledge," which is composed of:

[S]ystems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles which generate and organize practices and representations that can be objectively adapted to their outcomes *without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them* (1990, p. 53, emphasis added).

²⁸ Analogous to Bourdieu's concept of "field" and "habitus" respectively

²⁹ The idea refers to how "society becomes deposited in persons in the form of lasting *dispositions* or trained capacities and structured propensities to think feel and act in determinate ways, which then guide them in their creative responses to the constraints and solicitations of their extant milieu... individual and group history sedimented in the body, social structure turned mental structure' (Wacquant, 2005, p. 316, emphasis in original).

Next, I illustrate how tacit knowing manifested in the study context. Talking about the environmental, health, and economic risks associated with petroleum production offshore West Cape Three Point, some of the informants posited that:

Immediately they started the exploration —I think three months after —we saw seaweeds along the coast from New Town right down Dixcove and Shama area. So [the fishermen] find it very difficult to go fishing because their nets [get] entangled with the weeds.

First of all, there is a risk, no matter how remote it is... You know the predominant occupation of the people is fishing. Now, an area has been cordoned off. If that area has been cordoned off, it means that will be where the fish will go.... You know what, it is interesting. They say what they want to say. They don't want to listen.

The latter part of the quote above demonstrates the tension between tacit knowledge and explicit, codified, professional knowledge— something Schultz (2007) calls professional habitus. With tacit knowing, people make judgments about offshore oil production risks based on their embodied experiences; they just know, because in their view, they live it. And, they have lived the alternative too in the past. For example, another interviewee averred that:

In fact ... we are feeling the risks... It is no more risk; it is now real! It is no more an anticipated thing. Now [the activities of the oil industry are] leading to a decline [in the volume of fish harvested].

Regarding the increasing number of sea mammals such as whales that had been washed ashore dead since the offshore oil production commenced, the residents interviewed were certain that the oil activities were responsible. To them, it is not something that is up for debate, because it is simply self-evident.

[I]f you take what happens to the whales ... we all know that it is all due to the oil production activities, but they [i.e., EPA and Jubilee Partners] came out to inform us that the whales are old; that was why they were dying... But it cannot be possible that for a period of say one to two months, whales -- 10 to 15 -- would die in this western side of the country.

In view of the perceived self-evident nature of residents' tacit knowledge about environmental health risks, any counter viewpoint is seen as absurd and needs to be proven or rejected. It manifests in some form of the precautionary principle³⁰ (see e.g., Bakir, 2006). The extent to which the lived experiences of local residents permeated their judgments was also seen when they discussed why they thought the whale deaths could not be decoupled from the oil production activities. Thus, to the residents, their knowledge, perceptions, and judgments are grounded in their history, experience, and the oddity of the problems that are emerging. For example:

[W]e have been here for a long time. I, for example, was born here. Though I am not a fisherman, throughout my life, I have not heard this number of whales dying ... If they were to be one or two that would be different but for whales up to 10 [to have died] within a short period...

Similar rationalizations were made for the why free-floating seaweeds (i.e., *sargassum*) had appeared on the West Coast: "Since we've been here for a long time but have not experienced this type of odd activity, but then since the oil started we've started seeing it, we attribute it to the oil production." The informants and interviewees completely dismissed the possibility that the environmental, health and economic problems they are apparently experiencing could be all coincidence, having nothing to do with the oil production. Here is a portrait of this expression: "I don't think it's a

³⁰As Bakir (2006) explains, "The precautionary principle gives the benefit of scientific doubt to planetary welfare rather than to potentially hazardous human activities" (p. 83).

coincidence. Whales dying? Whales up to 10 within a short time... [Maybe] they too were attracted by the light so they thought it was food they normally fed on so when they went there.”

Besides, juxtaposing tacit knowing/knowledge to explicit knowledge (Polyni, 1958) this research found that the residents interviewed in these coastal communities were not thinking about the risks tacitly, as a discrete way (opposed to formal ways) of *knowing* about risks. Tacit knowledge did not appear like binary opposite of explicit knowledge. Rather than privileging expertise, corporate knowledge, and formal risk assessment (forms of explicit knowledge), the tacit and explicit knowledge are *expected* to be mutually reinforcing.

For example, the interviews and interactions were dotted with stories about how Tullow and its partners needed to conduct official investigations into potential health and ecological risks instead of dismissing claims of adverse effects as illogical, senseless, and without basis. This point finds expression in an informant’s view about Tullow Oil that:

“They don’t want to listen. What they said was that there is no evidence that the oil activities are responsible for the decline in the fish catch. But you see, that is not a good statement.” Pointing to the need for what could be termed “proactive principle” — similar to the precautionary principle of environmental management and decision making — that links local embodied knowledge in the form of risk concerns to expert knowledge.

Another person recounted how Tullow and the Jubilee Partners had in the past commissioned independent consultants to design spatial plans for them.

The point I am making by citing this example is that when they found out that there was a need, they asked somebody to [study it and come up with a solution]... Now, people are claiming that the oil activity is responsible for a decline in fish catch, so what do you do? Commission a group of people to do

some work and come and share with us! But all they are saying is that there is no evidence. Who is to bring the evidence?! First of all, are they capable of bringing the evidence? Yes, they are. So why are you hesitant?

As extant research has demonstrated (e.g., Goffin & Koners, 2011), extensive personal contact, regular interaction, and trust in knowledge are imperatives for an effective transfer of tacit knowledge. Therefore, an important question that arises from these results is how Tullow Oil and the Jubilee Partners, regulatory agencies such as the EPA, and other community-based advocacy groups can harness the tacit knowledge of local communities and their residents. If, indeed, sustainable development is a legitimate goal, of petroleum exploration activities in Ghana, and if local communities would realize the full benefits of the oil production, addressing this question is must.

The next session presents results on the public engagement, community engagement, public participation in decision-making, and the role of regulatory agencies such as EPA and the district assembly.

Public Engagement, Public Participation, and the Role of Regulatory Agencies

Public participation, engagement, and bottom-up development strategies are popular terms in industry and academia. Scholars and practitioners acknowledge these as beneficial for utilitarian and deontological reasons (see White, 2004; Melkote & Steeves, 2001). In line with this, the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines require that organizations that use the guideline report on their stakeholder engagement activities. Some interview results on the extent to which the public are involved in environmental management and social investment projects are presented.

Contrary to Tullow Oil's claims of public engagement, the interviewees lamented the extent to which they are involved in deciding on which community development projects to implement. The general view was that even when local residents have been involved in such decision-making, their participation has appeared contrived, illusory, and not useful. To them forums (which usually took place with short notice) at which such supposed engagements have taken place turned out to be talk shops where the only power community residents have had was to talk and not be listened to. Here is a summary of this sentiment:

All of a sudden, you hear that the Tullow people are coming to the [District] Assembly. Even for such information, if they are going to come tomorrow, you get information today— a day before. So, only a few people get ... the information, and only few people go. And when you go [you realize] that they have already decided that they want to come and put up a school for Half Assini people... When they come they'll only say that we are coming to renovate this school. But they'll not ask you that, "What do you want?" ... That's what they normally do.

These sentiments bring into question what participation and community engagement mean. How much participation is good enough? For instance, one informant provided us with much information about how Tullow and its partners were "building capacity" and "forging community participation" at the lower tier³¹ of health service delivery of the Ghana Health Service (GHS). This participation, as the informant as well as Tullow's CSR reports indicates, is being achieved through the provision of Community-based Health Planning and Services Initiative (CHIP) Centers in different coastal districts. Despite one of the informant's knowledge of Tullow's efforts in forging community partnerships, he (along with several others) bemoaned the lack of public

³¹ Lower tier is the health structure that is in direct contact with the community e.g., CHIP and health centers. Middle tier is the district and regional hospitals. The upper tier is the teaching hospital

participation in such community development decisions. Thus, they felt this lack of true participation and engagement has resulted in the implementation of programs such as trainings, which do not meet the *real* needs of the communities. They would rather prefer infrastructural projects. As another informant observed:

[Tullow and its partners] decide on what they want to do. Initially ... Kosmos... for instance ... renovated a dilapidated building, which ... had been abandoned. [Now] they have rehabilitated it and it is being used as an accident and emergency center at Axim Hospital. Kosmos also rehabilitated one CHIP center – Awuku CHIP Center. These are the things that we wanted them to do, but they decided to build capacity....

The findings with respect to public participation in environmental management and the role EPA was playing in this process was no different from what have been reported above. Three things stood out in the interviews: (a) the EPA and other institutions' perceived lack of responsiveness to public sentiments, (b) a gap in public participation as a result of 'expertization' of engagement efforts and communications, and (c) lack of trust.

EPA's perceived lack of responsiveness. On the first point, people felt the public education about impact of oil exploration before the oil production commenced was not adequate. In addition to this, the EPA was seen as not being responsive to public concerns about growing seaweeds and the death of whales. Besides, there was a perception similar to the point of view that if Tullow Oil wanted to decisively determine the link between the oil exploration and environmental problems that were coming to the fore in the coastal districts, it could have easily done that. One person observed that:

EPA are not prepared to tell us – even this weeds that appeared on our sea shore, people are saying it is due to the ... oil exploration activities ...[The EPA was] denying it but were not able to tell us what was going on.

This point is linked to this study's third observation about trust. But first, I discuss the 'expertization' of public engagement and risk communication.

“Expertization” as a limit of public participation. This question, “They organized a durbar here; but if you don't understand what is going on, what type of questions are you going to ask?” posed by one of the interviewees points to a limitation of the purported value of public participation in environmental decision making and community development. Thus, if engagement efforts are turned into technical meetings of experts and industry actors, grassroots participation becomes impossible. This observation aligns with Ulrich Beck's (1986) assertion regarding the undemocratic nature of science and technology decisions (cited in Leitch & Motion, 2009).

Lack of trust in EPA and regulatory agencies. Third, based on these interviews, people believed the EPA's lack of responsiveness or its inability to tell the link between the offshore oil production and environmental problems is not due to the lack of competence or knowledge; they simply do not want to tell the truth. The following statement illustrates the lack of trust in the EPA, and a broader lack of trust in the Ghanaian regulatory system: “I think they know [what is causing the environmental health problems]. I think they know but how to tell the truth is the problem. As far as you're a Ghanaian, you know how the system works.” To explain why the EPA ought not be trusted, another person recollected the following, alluding to the possibility that the

EPA had been bribed:

Do you know where they cited the gas project? There should be a buffer zone in case of ... any explosion or danger so that it would not affect the community. But we wrote to the EPA that they should give us details of the [environmental impact] assessment they did — the report. But we didn't get anything. Though they saw our letter... Later on, we heard that they were given some money not respond to our letter. The same thing is going on [regarding the environmental impact of the oil production]. Though they [i.e., EPA] know the information, they have been paid — though I don't have any concrete evidence...

If you're an institution, you've been set up to do this thing – to protect the community – so if something of that sort happens you should be able to come out. If you don't know [what is causing the weeds to grow along the shore] tell the people that you don't know... They can't say they don't know because if they say they don't know then they are not doing the work.

Given that this dissertation is interested in ascertaining the extent to which some chosen cultural worldview scales could predict and help understand public perceptions of the risks associated with Ghana's offshore oil production, in the next sections results from a series of scale testing are reported.

Cultural Cognition Worldview Scale Testing and Adaptation

As discussed in Chapter II of this dissertation, one measure of cultural worldview that has been extensively used to study the relationship between worldviews and putatively risky social and technological issues is the cultural cognition worldviews scale (CCWS) (Kahan, 2012). As a first step in testing the extent to which cultural values shape or orient offshore oil production risks in a contemporary African society, the long form of the CCWS was pre-tested among a Ghanaian sample. This first study was conducted using a student sample. The use of student samples here has some limitations: they are neither generalizable to the entire Ghanaian population nor analogous to the population of

interest — the semi-rural coastal community — to this research. With respect to the first shortcoming of using a student sample to test the CCWS, an earlier cultural cognition study conducted by the researcher using a student sample from a large university in the American Northwest (see Ofori-Parku, 2013) found the scale to be a valid measure of cultural worldviews and a reliable predictor of risk perceptions among a student population. And, the detected predictions were analogous to what have been found by other researchers using representative national samples. Therefore, if the scale functioned as expected in a North American student population, all other things being equal (i.e., if the same cultural worldview dimensions pertain in a Ghanaian student population) the scales should be able to detect them. And, despite the second shortcoming using a student sample, the cost and data-gathering problems associated with research in developing countries can be partially remedied by using students as surrogates of other populations (Yavas, 1994³²). Therefore testing the scale among a Ghanaian student sample is useful for assessing the applicability of the CCWS to at least *a subcomponent* of the Ghanaian society (see Enis, Cox, & Stafford, 1972).

Item Selection

The first step in this scale testing entailed an item screening process. For the purposes of item screening analysis, all 17 individualism-communitarianism (*group*) questions 13 hierarchy-egalitarianism (*grid*) questions (see Kahan, 2012) were used. For variability on responses, all questions were placed on a 10-point Likert-type rating scale

³² In a Yavas (1994) study which examined the efficacy of using students as “surrogates” of adults in Saudi Arabia, the research found that students samples were appropriately modeled attitude-behavior relationships and scale development. Two studies were conducted. The first one was in the domain of attitudes towards advertising and the other in the area of country-of-origin effects.

in which a higher score was indicative of a higher level of agreement. The scale is presented in Appendix C.

Item Screening and Reduction

Following Matsunaga's (2010) item screening process, the researcher employed a principal component factor analysis (PCA) with Promax rotation ($kappa = 4$) on 30 items. The goal of this process was to identify and remove items that did not correspond with other items in the scale and to test the overall factorability of the items. The analysis returned results that indicated extremely high multicollinearity, as the items posted high inter-item correlations (Field, 2000). Apart from "*Society works best when it lets individuals take responsibility for their own lives without telling them what to do*" with correlation coefficients ranging from .65 to .71, all other correlations were more than .97, evidencing issues with singularity³³. The determinant of the R -matrix was .000. Consistent with the singularity and dependence observed in the data, the analysis yielded a single factor solution, which explained a variance of 97% ($R^2=.97$). Although this was only a preliminary test, the results from this analysis suggest that almost all of the variables (and for that matter scale items) are linearly dependent, redundant, *and* unable to detect *variations* in people's latent cultural orientations among the Ghanaian population studied.

³³ As Field (2000) observes, singularity in factor analysis makes it difficult to detect how much unique contributions each variable makes to the extracted factors.

Psychological Sense of Community Scale Testing

Researchers such as MacMillan and Chavis (1986), Irwin, Simmons, and Walker (1999), Lima and Castro (2005), and Brazier, Simons, and Wyanne's (1997) associate individuals' sense of place identity to how they perceive relevant environmental problems. Flowing from this, as part of this dissertation, the researcher adapted and tested a measure of the extent to which participants identified with and felt about their local community — Psychological Sense of Community (PSoC).

Item Screening and Reduction

Following an item screening process (Matsunaga (2010), principal component factor analysis (PCA) with Promax rotation ($kappa = 4$) was employed on nine items adapted mainly from the literature. It had a subject-to-item ratio of 15:1, which is higher than the prevalent rule-of-thumb of 10:1 many researchers use to determine *a priori* sample sizes (Costello & Osborne, 2005). And all the scale items had correlations greater than .30. A Kaiser-Meyer-Okin (KMO) Measure of Sampling Adequacy (MSA) value of .595 was reported, and this exceeds the recommended KMO value of .50 (Kaiser, 1970, 1974; Cerny & Kaiser, 1977). Bartlett's Test of Sphericity (Bartlett, 1950; 1951) was also significant: $\chi^2(36) = 350.241, p < .001$. Only items with .50 or greater loading scores and communalities were retained. This resulted in the removal of two items ("*I know most of the people in this community*" and "*I hope to live in this community for a long time*"). All components that had eigenvalues higher than 1 were extracted. The rotated component scores using all nine items are presented in Table 4.

Table 4

Rotated Component Scores for PSoC

Item	Component		
	1	2	3
I feel good about this community	.950	.953	-.005
I feel strongly about this community	.965	.955	.047
I think that this community is a good place to live	.821	.105	-.238
I feel I matter in this community	.831	-.101	.022
I hope to live in this community for a long time	.583 ^T	.070	.140
I have lived in this community for a long time	.418	-.098	.537
I get along with people in this community	.020	-.017	.782
Most of my neighbors recognize me in this community	-.074	.146	.808
I know most of the people in this community	-.192 ^T	-.137	.342

Note. Bolded items were retained and used in subsequent analyses. ^T Besides “*I know most of the people in this community*” not loading on any factor, these two items were not retained because an initial factorability check indicated that their communality values were less than the minimum requirement of .50 (.447 and .166 respectively).

After the item reduction, a PCA was conducted using the seven items via Varimax³⁴ rotation. The analysis returned three components with eigenvalues greater than 1 (KMO measure = .548; Bartlett’s Test of Sphericity: $\chi^2(21) = 310.41, p < .001$). Component one (*general emotional tone*) explained 34.17% of the variance in the model, component two (*social integration*) explained 25.29%, and component 3 (*individual sense of community*) explained 15.02% of the variance in the model. All three components yielded a total variance explained (TVE) of 74.48%. Thus, the overall model explained 74.48% variance in the model.

³⁴ Separate analyses were conducted using both Promax and Varimax, but we found no difference between the two approaches.

Exploratory Factor Analysis

Beyond the initial item reduction, an exploratory factor analysis (EFA) was conducted to validate which components of the scale to retain. The Kaiser-Guttman (eigenvalues greater than one) method (Guttman, 1954; Kaiser, 1960) and a Scree test (Cattell, 1966) both indicated that three components should be retained. However, due to Scree tests' subjectivity and ambiguity, especially when factors are not strong or exhibit clear-cut breaks³⁵ (Linn, 1968) and the Kaiser-Guttman approach's tendency to overestimate latent factors (Matsunaga, 2010; Hayton et al., 2004; Zwick & Velicer, 1986), an eigenvalue Monte Carlo or Parallel Analysis (PA) was also conducted (see example, O'Connor, 2000; Hayton, Allen, & Scarpel, 2004;³⁶ Henson & Roberts, 2006). The PA was conducted using O'Connor's (2000) SPSS syntax. For this test, eigenvalues were drawn at 95th percentile from 1,000 random permutations of the data from the actual sample. After comparing the actual and the random permutations, only those factors whose *actual* eigenvalues were greater than the *randomly generated* eigenvalues were retained. The results are presented in Table 5. Based on both the mean and 95th percentile criteria for PA tests, the results indicate that only two-factors should be retained, contrary to the Scree test's three-factor model.

³⁵ The literature suggests that smaller sample sizes make definite factor breaks on the scree test less likely (e.g., Linn, 1968). Therefore, PA was deemed a necessary step in the scale testing process.

³⁶ As Hayton et al. observe, despite that parallel analysis is one of "the most accurate" method of deciding which factors to finally retain in an EFA it remains one of the most underutilized tools. PA is based on the thinking that "nontrivial components from real data with a valid underlying factor structure should have larger eigenvalues than parallel components derived from random data having the same sample size and number of variables" (p. 194). The first task in this process, therefore, entails generating random data from an existing one, and comparing the eigenvalues of the two – the observed and the random.

Based on the factors extracted via the PA, an EFA was conducted using a principal axis factoring (PAF) with Promax rotation ($kappa = 4$). For the purposes of item retention, items had to meet three criteria: they were required to post loading scores of at least .50, extracted communality scores greater than .50, and Measures of Sampling Adequacy (MSA) greater than .50. All items satisfied the first two conditions.

Table 5

Raw and Random Eigenvalues from Parallel Analysis Test for PSoC

Factor	Raw	Random (mean)	Random (95th Perc.)
1	2.391626	1.334328	1.460298
2	1.770236	1.190045	1.274399
3	1.051638	1.084384	1.148440
4	.648751	.990373	1.053388

Note: Eigenvalues for Factors 1, 2, 3, and 4 were shown to definitively establish the two-factors results pattern. Subsequent factors were omitted as pattern is clearly established.

The MSAs, communalities, and factor loadings are presented in Table 6. Also, the overall reliability of the scale was assessed: α was .65 and mean score was 6.10 ($SD = 3.13$), and the distribution was negatively skewed, meaning most people were highly rated on this measure.

Table 6

Factor Loadings and Extracted Communalities for a Single-Factor PSoC

Item	MSA	Communalities	Factor Loadings
I feel good about this community	.486	.916	.957
I feel strongly about this community	.483	.925	.961
I have lived in this community for a long time	.664	.543	.734
I get along with people in this community	.563	.620	.786
Most of my neighbors recognize me in this community	.605	.611	.779

Note. Items in bold were retained in the single-factor solution. Thus, the three-item sense of community scale was used for subsequent analysis.

Replicability Test for the PSoC Measure

In line with Thompson's (2004) and Osborne and Fitzpatrick's (2012) proposal that researchers should directly estimate the replicability of their EFA,³⁷ the researcher conducted a split sample validation test to further assess and confirm the factor structure of the scale. For this test, all cases were randomly assigned to one of two groups. The assignment of cases to groups was done using a randomly generated seed in SPSS. Thus, the data were randomly split into two halves and each half was used for factor analyses. Following Osborne and Fitzpatrick's explanation of this procedure, a random variable was generated that indicated which half of the sample each case should be placed in.³⁸

The replicability test indicates that the factor structure of the Sense of Community scale tested in this study are likely to be replicated in subsequent studies that use representative samples from the same (or similar population). A PCA conducted on both split samples returned similar factor structures (see Table 7a and 7b below). Thus, the first threshold³⁹ for replicability analysis (Thompson, 2004; Osborne & Fitzpatrick, 2012) was met. The analysis also yielded outcomes that satisfy the second threshold of replicability

³⁷ As Osborne and Fitzpatrick (2012) explain: "since the goal of EFA is usually to infer or explore the likely factor structure of an instrument when used within a particular population, it is important to know whether a solution (or evident factor structure) within a particular data set is likely to be observed within another, similar data set." (p. 2-3). Such analysis, according to Thompson (2004) can be done by splitting an existing dataset into two samples and assigning individual cases randomly to either groups (i.e., internal replication technique) or by using two separately gathered datasets (i.e., external replication technique). The internal validation approach was used in the current study because of the complexity of the data collection site, which is situated abroad.

³⁸ To randomly select and assign cases to one of two groups, a starting value was specified using a random number seed.

³⁹ Osborne and Fitzpatrick (2012) identify two thresholds for replicability analyses (whether internal or external). The first one is that two or more analyses must indicate the "same basic structure" by returning the same number of factors and assigning the same number of items to each factor. The second, more robust, threshold is that the analyses must return the same number of items for the different factors extracted and the magnitude of factor loadings should be within a reasonable range.

analysis. Considering the exploratory nature of the study and the small sample herein involved, the scale is reasonably reliably.

A fundamental interest of this dissertation pertains to the universality or otherwise of cultural values — and for that matter worldviews — and their implications for public attitudes toward and involvement in environmental decisions. Since the Schwartz World Values Scale (WVS) (Schwartz, 1994; Schwartz, 1999; Schwartz, 1992; Lindeman & Verkasalo, 2005) has been widely used internationally, a short form of the scale was also tested.

Table 7

Factor Loadings and Extracted Communalities for PSoC

a. Split sample 1

Item	MSA	Communalities	Factor Loadings
I have lived in this community for a long time	.637	.521	.722
I get along with people in this community	.644	.508	.713
Most of my neighbors recognize me in this community	.590	.643	.802

b. Split sample 2

Item	MSA	Communalities	Factor Loadings
I have lived in this community for a long time	.663	.529	.704
I get along with people in this community	.632	.583	.797
Most of my neighbors recognize me in this community	.634	.573	.798

Note. Tables indicate similar pattern structure from the randomly generated samples. Sample 1 explained 55.75% of variance and sample 2 explained 56.38%, which is within a reasonable range.

World Values Scale Testing and Adaptation

The first step in this scale testing entailed an item screening process. For the purposes of item screening analysis, 10 questions— representing Schwartz’ 10 universal values—were selected from Shalom Schwartz’ body of work on universal/global cultural

values (see Schwartz, 1994; Schwartz, 1999; Schwartz, 1992). The questions were placed on a seven-point Likert-type rating scale in which a higher score was indicative of a higher level of agreement.

Item Screening and Reduction

Following Matsunaga's (2010) item screening process, the study employed a principal component factor analysis (PCA) with Promax rotation ($kappa = 4$) on all 10 items. The goal of this process was to identify and remove items that did not correspond with other items in the scale. The analysis yielded a subject-to-item ratio of 14:1, higher than the 10:1 ratio that is often used in the social science literature (Costello & Osborne, 2005). The inspection of the correlation matrix indicated most variables had a Pearson r of .30 or greater, and the MSA scores for all the variables were more than the recommended .60 (Cerny & Kaiser, 1977). Beyond the MSA for the individual variables meeting the required criterion for PCA, the overall Kaiser-Meyer-Oklin (KMO) MSA was .962, which exceeded the required threshold of .50 (Kaiser, 1970, 1974; Cerny & Kaiser, 1977). In addition, Bartlett's Test of Sphericity was also significant: $\chi^2(45) = 3032.306$, $p < .001$. Only items with .50 or greater loading scores and communalities were retained. This resulted in the removal of one item (*"On a scale of 1-7, rate the importance of stimulation as your life-guiding principle"*). All components with eigenvalues higher than 1.0 were extracted (Cattell, 1966; Kaiser, 1969).⁴⁰The analysis returned a single factor

⁴⁰ This approach, which is also called the K1 (Kaiser, 1969) or Kaiser-Guttman (Matsunaga, 2010) method, is a popular and commonly used factor-retention method (Zwick & Velicer, 1986) and the default in many statistical analysis software.

solution, comprising nine items. The overall model explained 82.21% of variance. The rotated component scores showing all 10 items are presented in Table 8.

Table 8

Rotated Component Scores for WVS

Item	Communalities	Component Loadings
Power	.960	.980
Achievement	.549	.741
Hedonism	.934	.967
Stimulation	.370	.608
Self direction	.947	.973
Universalism	.974	.987
Benevolence	.984	.992
Tradition	.553	.744
Conformity	.972	.986
Security	.978	.989

Note. Bolded items were retained and used in subsequent analyses.

After the item reduction, a PCA was conducted using the seven items via Varimax rotation, which again returned a single-factor structure with eigenvalues greater than 1 (KMO measure = .962; Bartlett's Test of Sphericity: $\chi^2(36) = 2979.77, p < .001$). The single-factor solution explained 87.56% variance in the model.

Exploratory Factor Analysis

Beyond the initial item reduction, an exploratory factor analysis (EFA) was conducted using the nine items retained after the item-screening process. The goal of the EFA was to validate which components of the scale to retain. The 'eigenvalues greater than 1.0' (Kaiser, 1960) and a Scree test (Cattell, 1966) both supported a single-factor solution. But in view of Scree tests' subjectivity and ambiguity, especially when factors

are not strong or exhibit clear-cut breaks (Hayton, Allen, & Scarpel, 2004; Zwick & Velicer, 1986),⁴¹ an eigenvalue Monte Carlo or Parallel Analysis (PA) test was also conducted (see e.g., Horn, 1965, 1969; O'Connor, 2000; Hayton, Allen, & Scarpel, 2004).⁴² The PA was conducted using O'Connor's (2000) SPSS syntax. For this test, eigenvalues were drawn at the 95th percentile from 1,000 random permutations of the data from the actual sample. After comparing the actual and the random permutations, only those factors whose *actual* eigenvalues were greater than the *randomly generated* eigenvalues were retained. The results are presented in Table 9. The results indicated that only the first *actual* eigenvalues are greater than the *permutations* generated via the PA (using both the mean and 95th percentile criteria). Therefore, the one-factor solution is retained. This result is contrary to Schwartz's (1992) two-factor solution using the same scale.

Table 9

Raw Eigenvalues and Random Eigenvalues from Parallel Analysis Test for WVS

Factor	Raw Data	Random (mean)	Random (95th Percentile)
1	7.880487	1.332103	1.987694
2	0.507351	1.092718	1.120720
3	0.449917	1.040019	1.061878
4	0.058384	1.018438	1.034247

Note: Eigenvalues for Factors 1, 2, 3, and 4 were shown to definitively establish results pattern. Subsequent factors were omitted from the table as pattern is clearly established.

⁴¹ The literature suggests that smaller sample sizes make definite factor breaks on the scree test less likely (e.g. Linn, 1968). Therefore, PA was deemed a necessary step in the scale testing process.

⁴² As Hayton et al. observe, despite that parallel analysis is one of "the most accurate" method of deciding which factors to finally retain in an EFA it remains one of the most underutilized tools. PA is based on the thinking that "nontrivial components from real data with a valid underlying factor structure should have larger eigenvalues than parallel components derived from random data having the same sample size and number of variables" (p. 194). The first task in this process, therefore, entails generating random data from an existing one, and comparing the eigenvalues of the two – the observed and the random.

Based on the one-factor solution extracted via the PA, an EFA was conducted using a principal axis factoring (PAF).⁴³ For the purposes of item retention, items had to meet three criteria. They were required to post: MSAs greater than .50, extracted communality scores greater than .50, and factor loadings of at least .50. All items satisfied the first condition (i.e., all MSAs were .50 or higher). Two items “*Achievement*” and “*Tradition*” posted communality values lower than .50 and were therefore removed. The seven items retained (representing the single-factor solution) explained 97.20% of the variance. The MSAs, communalities, and factor loadings are presented in Table 10. Also, the overall, reliability of the scale was assessed: α was high at .99 and the mean score was 46.99 ($SD = 55.96$), but the distribution was not normal.

Table 10

Factor Loadings and Extracted Communalities for WVS Exploratory Factor Analysis

Item	MSA	Communalities	Loadings
Power	.983	.962	.981
Hedonism	.981	.936	.967
Self direction	.977	.955	.977
Universalism	.948	.986	.993
Benevolence	.945	.992	.996
Conformity	.949	.986	.993
Security	.953	.988	.994

Replicability Test for World Values Scale

As was the case in the PSoC (Sense of Community) measure, a split sample validation test was conducted to further confirm the factor structure of the scale. This procedure, which is in sync with Thompson’s (2004) and Osborne and Fitzpatrick’s (2012) proposal that researchers should directly estimate the replicability of their

⁴³Since the PA specified a single factor solution, no rotation was used for the EFA.

EFA,⁴⁴sought to assess the reliability of the WVS. For this test, all cases were randomly assigned to one of two groups.

The assignment of cases to groups was done using a randomly generated seed in SPSS. The replicability test indicates that the factor structure of the Schwartz (1992) World Values Scale tested in this study is likely to be replicated in subsequent studies that use representative samples from the same or similar population. A PCA conducted on both split samples returned similar single-factor structures, thereby meeting Osborne and Fitzpatrick’s (2012) first threshold for replicability analysis. In addition, the analysis met a second, more robust requirement that the same number of items should be extracted. Table 11a and 11b summarize the result of the replicability analysis.

Table 11

Factor Loadings and Extracted Communalities for WVS
a. Split sample 1

Item	MSA	Communalities	Factor Loadings
Power	.982	.967	.983
Hedonism	.979	.944	.972
Self direction	.973	.963	.981
Universalism	.949	.986	.993
Benevolence	.944	.993	.996
Conformity	.937	.990	.995
Security Power	.960	.988	.994

⁴⁴ As Osborne and Fitzpatrick (2012) explain: “since the goal of EFA is usually to infer or explore the likely factor structure of an instrument when used within a particular population, it is important to know whether a solution (or evident factor structure) within a particular data set is likely to be observed within another, similar data set.” (p. 2-3). Such analysis, according to Thompson (2004) can be done by splitting an existing dataset into two samples and assigning individual cases randomly to either groups (i.e., internal replication technique) or by using two separately gathered datasets (i.e., external replication technique). The internal validation approach was used in the current study because of the complexity of the data collection site, which is situated abroad.

b. Split sample 2

Item	MSA	Communalities	Factor Loadings
Power	.980	.968	.984
Hedonism	.982	.945	.972
Self direction	.979	.963	.981
Universalism	.950	.986	.993
Benevolence	.935	.995	.997
Conformity	.943	.989	.995
Security Power	.943	.993	.996

Note. Tables 11 indicates similar pattern structure from the randomly generated samples. Sample 1 explained 97.58% of variance and sample 2 explained 97.68%, which is within a reasonable range.

Ghanaian Cultural Cognition Worldview Scale Development and Testing

An earlier pre-test of Dan Kahan’s (2013) Cultural Cognition Worldview Scales (CCWS) among a Ghanaian sample (Ofori-Parku, 2014b) did not return any factor structures. This suggests that the CCWS might not be able to detect relevant latent affective, cultural orientations that could effectively measure individuals’ value orientation — worldviews. Thus, there was a practical need (and a theoretical one too) to develop a cultural cognition worldview scale that would be culturally sensitive to a Ghanaian sample, and therefore able to detect latent distinguishing cultural traits. A related task was to assess whether the worldview measure would predict attitudes toward the risks associated with Ghana’s offshore oil exploration and production. The results of this process are presented next.

Item Generation

The first step in this scale development and testing entailed item generation through face-to-face interviews with residents in two coastal districts (Axim and Jomoro), a review of literature on the cultural orientations of residents along Ghana’s West Coast, as well as a review of the ‘blame’ frames in media reports that featured negative

sentiments about Ghana's offshore petroleum exploration and production activities. The steps employed in the item generation and screening process have already been discussed in Chapter III. The final items used for the survey were anchored on a seven-point disagree–agree scale, where a higher score was indicative of a higher level of agreement with each stated culturally oriented statement.

Item Screening and Reduction

Following Matsunaga's (2010) item screening process, the study employed a PCA with Promax rotation ($kappa = 4$). There were 14 items on the group dimension and seven items on the grid dimension. These items were included in the initial analysis because they were deemed to have face validity—relevant to Mary Douglas' (e.g., Douglas, 1963, 1996; (Douglas & Wildavsky, 1982) grid and group cultural orientations. The items on the group (or individualism-communitarianism) dimension captured government's role in regulating corporate behavior, business autonomy, government role in regulating people's behavior, and individual autonomy. The other items on the grid (i.e., hierarchy-egalitarianism) dimension sought to detect and measure value orientations such as equity and fairness issues. The goal of this initial item screening process was to identify and remove items that did not correspond with other items in the scale.

The inspection of the correlation matrix indicated that numerous variables had Pearson r of .30 or greater. Two items “*Government has no business protecting people from harm while they are at sea*” and “*Government has no business protecting people from harm while they are in their farms*” had Measures of Sampling Adequacy (MSA) lower than the recommended .50 or greater (Cerny & Kaiser, 1977). They were therefore

not retained in the analysis. In addition, three items did not post communalities higher than the minimum .50 requirements and were therefore deleted as well. These items are “The government should do more to help us in this community,” “People should be able to farm wherever they want to without governments’ interference,” and “If an elderly person instructs me to fish in a government-restricted area I will obey.” The MSA and communality scores are presented in Table 12.

Table 12

Extracted Communalities for Ghanaian CCWS

Item	MSA	Communality
The government should do more to help us in this community.	.802	.369
Government needs to make laws that keep corporations from harming people in this community.	.541	.738
Government needs to make laws that keep corporations from harming the natural environment in this community	.639	.774
Government needs to make laws that keep corporations from harming local communities	.745	.630
Businesses should be allowed to do whatever they want to people without governments’ interference	.758	.568
Businesses should be allowed to do whatever they want to the natural environment without governments’ interference.	.758	.756
Businesses should be allowed to do whatever they want to local communities without governments’ interference.	.703	.758
Government has no business protecting people from harm while they are at sea.	.432	.840
Government has no business protecting people from harm while they are in their farms.	.434	.872
People should be able to fish wherever they want to without governments’ interference.	.690	.710
People should be able to farm wherever they want to without governments’ interference	.691	.481
People should be able to trade wherever they want to without governments’ interference	.628	.772
Too many laws & regulations have stopped us from effective trading in this community	.626	.804
Too many laws & regulations have stopped us from effective fishing in this community	.584	.780
It is unfair to stop people from fishing at places they used to fish	.798	.941

It is unfair to stop people from farming at paces they used to farm	.787	.945
It is unfair to stop people from trading where they used to trade	.981	.616
It is unfair for strangers to own land in this community while indigenes cannot afford any.	.834	.922
It is unfair for strangers to have jobs in this community while indigenes have no jobs	.852	.917
Our society would be better off if the distribution of wealth was more equal	.843	.614
If an elderly person instructs me to fish in a government-restricted area I will obey	.769	.274

Note. Bolded items were not retained for further analysis.

After the removal of the five items, the overall KMO score was .780, which exceeded the required threshold of .50 and a more conservative .60 threshold (Kaiser, 1970, 1974; Cerny & Kaiser, 1977). In addition, Bartlett’s Test of Sphericity was also significant: $\chi^2(120) = 1790.38, p < .001$. All items had communalities of .50 or greater. Also, all items posted simple structure and were therefore retained after the item screening and retention process. All factor components with eigenvalues higher than 1 were extracted, which returned a five-factor solution, comprising 16 items. The Scree plot also supported the five-factor solution. The overall PCA model explained 78.98% of variance. The rotated factor loadings are presented in Table 13.

Table 13

Rotated Component Scores for Ghanaian CCWS

Item	Component				
	1	2	3	4	5
Government needs to make laws that keep corporations from harming people in this community	.965	.023	-.006	-.021	-.017
Government needs to make laws that keep corporations from harming the natural environment in this community	.962	.015	.021	.047	.014
Government needs to make laws that keep corporations from harming local communities	.960	.024	-.006	-.010	-.042
Businesses should be allowed to do whatever they want to people without governments interference	.955	.049	.015	.048	.036
Businesses should be allowed to do whatever they want to the natural environment without governments’ interference.	.793	-.084	-.026	-.095	.036

Businesses should be allowed to do whatever they want to local communities without governments' interference.	.787	-.038	.001	.030	-.034
People should be able to fish wherever they want to without governments' interference.	-.017	.917	-.111	-.017	-.008
People should be able to trade wherever they want to without governments' interference	.038	.839	.034	-.024	.028
Too many laws & regulations have stopped us from effective trading in this community	-.029	.797	.069	.001	.002
Too many laws & regulations have stopped us from effective fishing in this community	.006	-.069	.885	.072	-.024
It is unfair to stop people from fishing at places they used to fish	-.048	.158	.836	.079	-.051
It is unfair to stop people from farming at paces they used to farm	.039	-.089	.772	-.204	.080
It is unfair to stop people from trading where they used to trade	-.006	.004	.051	.919	-.033
It is unfair for strangers to own land in this community while indigenes cannot afford any.	.009	-.045	-.090	.863	.057
It is unfair for strangers to have jobs in this community while indigenes have no jobs	-.010	.009	-.099	-.076	.935
Our society would be better off if the distribution of wealth was more equal	.003	.009	.118	.110	.855

Note. Bolded items indicate factor structure and specific items in each factor component. These items were retained and used in subsequent PA and EFA. The five-factor model explained about 79% of the variance, with Factor 1 accounting for 32.8% of the TVE.

Exploratory Factor Analysis

Based on Mary Douglas' (1963) original grid-group model and Dan Kahan's recent Individualism-Egalitarianism model, the ideal Ghanaian CCWS would have a two-factor structure. Therefore, beyond the initial item reduction, an EFA was conducted using the 16 items retained after the item-screening process. The goal of the EFA was to validate which components of the scale to retain. Despite that both the eigenvalues greater than one criterion and the Scree plot method had supported a five-factor solution, due to the weaknesses of both approaches — discussed in the preceding sections (see also Hayton, Allen, & Scarpel, 2004), an eigenvalue Monte Carlo or Parallel Analysis was conducted (see example, O'Connor, 2000; Hayton et al., 2004). The PA was conducted using O'Connor's (2000) SPSS syntax. For this test, eigenvalues were drawn at the 95th percentile from 1,000 random permutations of the data from the actual sample. And after

comparing the actual and the random permutations, only those factors with *actual* eigenvalues greater than the *randomly generated* eigenvalues were retained. The results are presented in Table 14. The results indicated that four *actual* eigenvalues were greater than the *permutations* generated via the PA (using both the mean and 95th percentile criteria). Therefore, a four-factor solution was retained. A closer look at the factor structure suggests that while the items on the grid (hierarchy-egalitarianism) dimension were extracted as a single factor, the group (individualism-communitarianism) dimension extracted three separate components.

Based on the four-factor solution extracted via the PA, an EFA was conducted using a PAF. For the purposes of item retention, items had to meet three criteria. They were required to post: MSAs greater than .50, extracted communality scores greater than .50, and factor loadings of at least .50. All items satisfied the first condition (i.e., all MSAs were .50 or higher). No complex structure was observed.

Table 14

Raw and Random Eigenvalues from Parallel Analysis Test (Ghanaian CCWS)

Factor	Raw Data	Random (Mean)	Random (95th Percentile)
1	5.241607	1.668245	2.013517
2	3.024159	1.480517	1.607727
3	1.910355	1.368549	1.464765
4	1.388161	1.273947	1.350009
5	1.072050	1.196628	1.256301
6	.576575	1.127198	1.177125

Note: Eigenvalues for Factors 1, 2, 3, 4, 5, and 6 were shown to definitively establish results pattern. Subsequent factors were omitted from the table as pattern is clearly established.

However, the fourth factor consisted of only two items (“*Too many laws & regulations have stopped us from effective fishing in this community*” and “*Too many*

laws & regulations have stopped us from effective trading in this community”). For the sake of parsimony, these two items were excluded from the model. The first factor, which is analogous to the grid (hierarchy-egalitarianism) dimension in the Cultural Theory, consisted of six items. The group (individualism-communitarianism) dimension had two subcomponents: business autonomy, and government regulation of corporate behavior. The two group subcomponents each had three items. The final scale items are summarized in Appendix C. The grid dimension (Factor 1) explained 42.85% of the variance, the business autonomy factor explained 23.40% and the attitude toward government regulation of corporate behavior factor explained 11.03% of the variance. The entire model explained 77.32% variance. The communalities, and factor loadings are presented in Table 15.

Table 15

Final Rotated Component Scores and Factor Loadings for Ghanaian CCWS

Item	Component			Communality
	1	2	3	
Government needs to make laws that keep corporations from harming people in this community				
Government needs to make laws that keep corporations from harming the natural environment in this community			.827	.776
Government needs to make laws that keep corporations from harming local communities			.788	.609
Businesses should be allowed to do whatever they want to people without governments interference		.921		.666
Businesses should be allowed to do whatever they want to the natural environment without governments' interference.		.848		.758
Businesses should be allowed to do whatever they want to local communities without governments' interference.		.796		.785
It is unfair to stop people from fishing at places they used to fish	.969			.946
It is unfair to stop people from farming at paces they used to farm	.968			.951
It is unfair to stop people from trading where they used to trade	.956			.616
It is unfair for strangers to own land in this community while indigenes cannot afford any.	.946			.915

It is unfair for strangers to have jobs in this community while indigenes have no jobs	.794	.915
Our society would be better off if the distribution of wealth was more equal	.791	.609

Note. Only factor loadings greater than .40 are reported here. The three-factor model has a Total Variance Explained (TVE) of 77.32%.

Replicability Test for Ghanaian Cultural Cognition Worldview Scale

A split test sample validation test (Thompson, 2004; Osborne & Fitzpatrick, 2012) was conducted on the extracted factors to assess the likelihood of the factor structure being replicated from samples drawn from the same or similar populations. In other words, it sought to test the reliability of the proposed Ghanaian CCWS. As was the case for the Sense of Community measure and the Schwartz (1992) WVS development and testing, for the replicability test, the sample was split and all cases were randomly assigned to one of two groups. The assignment of cases to groups was done using a randomly generated seed in SPSS. The replicability test indicates that the factor structure of the Ghanaian CCWS developed in this study is likely to be replicated in subsequent studies that use representative samples from the same or similar population. A PCA conducted on both split samples satisfied two replicability conditions (Osborne and Fitzpatrick, 2012): it returned similar single-factor structure and the same number of items for each factor it extracted. Table 16 summarizes the results of the replicability analysis.

In the next section, I present analyses and results from the testing and development of a measure of perceived corporate sustainability.

Table 16

Factor Loadings and Communalities for Ghanaian CCWS
a. Split sample 1

Item	Loading			Communality
	1	2	4	
Government needs to make laws that keep corporations from harming people in this community			.888	.732
Government needs to make laws that keep corporations from harming the natural environment in this community			.782	.760
Government needs to make laws that keep corporations from harming local communities			.801	.607
Businesses should be allowed to do whatever they want to people without governments interference		.794		.663
Businesses should be allowed to do whatever they want to the natural environment without governments' interference.		.869		.772
Businesses should be allowed to do whatever they want to local communities without governments' interference.		.917		.787
It is unfair to stop people from fishing at places they used to fish	.969			.952
It is unfair to stop people from farming at paces they used to farm	.971			.956
It is unfair to stop people from trading where they used to trade	.802			.620
It is unfair for strangers to own land in this community while indigenes cannot afford any.	.953			.922
It is unfair for strangers to have jobs in this community while indigenes have no jobs	.945			.922
Our society would be better off if the distribution of wealth was more equal	.800			.614

b. Split sample 2

Item	Loading			Communality
	1	2	3	
Government needs to make laws that keep corporations from harming people in this community			.897	.771
Government needs to make laws that keep corporations from harming the natural environment in this community			.841	.762
Government needs to make laws that keep corporations from harming local communities			.786	.609
Businesses should be allowed to do whatever they want to people without governments interference		.737		.634
Businesses should be allowed to do whatever they want to the natural environment without governments' interference.		.888		.777
Businesses should be allowed to do whatever they want to local communities without governments' interference.		.900		.769
It is unfair to stop people from fishing at places they	.963			.952

Item	Loading			Communality
	1	2	3	
Government needs to make laws that keep corporations from harming people in this community			.897	.771
Government needs to make laws that keep corporations from harming the natural environment in this community used to fish			.841	.762
It is unfair to stop people from farming at paces they used to farm	.970			.955
It is unfair to stop people from trading where they used to trade	.801			.618
It is unfair for strangers to own land in this community while indigenes cannot afford any.	.961			.926
It is unfair for strangers to have jobs in this community while indigenes have no jobs	.949			.922
Our society would be better off if the distribution of wealth was more equal	.798			.615

Note. Table indicate similar pattern structure from the randomly generated samples as well as the actual sample. The overall model in Sample 1 explained 77.55% of variance and that of sample 2 explained 77.58%.

Perceived Corporate Sustainability Measure Scale Testing and Adaptation

In addition to the a focus on how (cultural) worldviews and information networks (i.e., risk amplification stations) complicate public environmental-health risks perceptions, this study was also interested in whether or not these factors influenced people’s perceived corporate sustainability (CS) and —more broadly — corporate reputation. Again, the researcher’s search did not find any scales that had been tested among a Ghanaian sample. Therefore, a number of items generated and adapted from literature dealing with issues such as stakeholder engagement, community engagement, public relations, and corporate reputation were collated and tested (e.g., Terblanche, 2015; Walsh & Beatty, 2007; Walsh, Beatty, & Shiu, 2009; Kim, 2001). The results of this scale testing are presented in the proceeding section.

Item Generation, Screening, and Reduction

As a first step in this process, the researcher generated, screened, adapted, and reduced questions from sources such as (Kim, 2001; Terblanche, 2015; Walsh, Beatty, & Shiu, 2009; Walsh & Beatty, 2007). The survey anchored all questions on a seven-point disagree-agree scale. A higher score was indicative of a higher level of agreement to the statements. Following the item screening process (e.g., Matsunaga, 2010), a PCA with Promax rotation ($kappa = 4$) was employed on 18 items that were deemed to have face validity. The items covered Tullow Ghana Limited's perceived community engagement, role in development, environmental responsibility, corporate leadership, service quality, and future profitability.⁴⁵ The goal in this initial item screening process was to identify and remove items that did not correspond with other items in the scale.

The inspection of the correlation matrix indicated numerous variables had Pearson r of .30 or greater. All items had Measures of Sampling Adequacy (MSA) higher than the minimum threshold of .50 or greater (Cerny & Kaiser, 1977) and communality scores were also higher than the .50 and therefore retained. The KMO measure was .753, which exceeds the recommended KMO value of .50 (Kaiser, 1970, 1974; Cerny & Kaiser, 1977). Bartlett's Test of Sphericity was also significant: $\chi^2(153) = 1533.719, p < .001$. The MSA and communality scores are presented in Table 17. Despite the high communality and MSAs, three items ("*It offers high quality services,*" "*It seems to make an effort to create new jobs,*" and "*It is a reliable company*") were not used in subsequent analyses because they exhibited complex structures.

⁴⁵ For respondents who reported they had not heard of Tullow, items were prefixed with the "the company that is currently engaged in offshore oil exploration and production".

Table 17

Community Scores for Perceived Corporate Sustainability Measure

Item	MSA	Community
It has employees who treat local communities courteously	.694	.777
It has employees who are concerned about local community needs	.680	.566
It is concerned about the local communities it operates in	.847	.700
It treats its local communities fairly	.730	.837
It takes the rights of local communities seriously	.812	.707
It seems to care about all of its community members	.749	.674
It looks like a good company to work for	.762	.832
It seems to treat its people well	.743	.647
It seems to have excellent leadership	.863	.701
It seems to recognize and take advantage of market opportunities	.728	.626
It looks like it has strong prospects for future growth	.694	.807
It is a strong company	.850	.729
It offers high quality services	.801	.628
It seems to make an effort to create new jobs	.729	.746
It seems to be environmentally responsible	.575	.825
It seems it to ensure a clean environment	.848	.705
It supports development projects	.858	.753
It is a reliable company	.621	.755

Note. Bolded items were not retained for further analysis because despite their high MSA and community scores, they exhibited complex structures.

After the removal of these three items, the overall Kaiser-Meyer-Okin (KMO) MSA was .783, which exceeded the required threshold of .50 as well as the more conservative .60 threshold (Kaiser, 1970, 1974; Cerny & Kaiser, 1977). In addition, Bartlett's Test of Sphericity was significant: $\chi^2(105) = 1202.591, p < .001$. The remaining 15 items posted simple structures. All factor components with eigenvalues higher than 1 were extracted, which returned a four-factor solution. In addition to the eigenvalues, a Scree plot method supported the four-factor solution. The first factor accounted for 39.8% total variance, the second accounted for 12.45%, the third accounted for 11.18%, and the fourth accounted for 8.13% of variance. The TVE was 71.60%. The rotated factor loadings are presented in Table 18.

Table 18

Initial Rotated Component Scores for Perceived Corporate Sustainability Measure

Item	Components			
	1	2	3	4
It has employees who treat local communities courteously.	.961	-.089	-.254	.027
It has employees who are concerned about local community needs	.568	.260	.132	-.075
It is concerned about the local communities they operate in	.613	-.028	.265	.141
It treats its local communities fairly	.930	-.019	-.220	.080
It takes the rights of local communities seriously	.645	-.128	.389	.000
It seems to care about all of its community members	.301	-.068	.657	-.082
It looks like a good company to work for	.229	.141	-.035	.747
It seems to treat its people well	-.074	-.152	.211	.749
It seems to have excellent leadership	.361	.608	.099	-.039
It seems to recognize and take advantage of market opportunities	-.201	.015	.800	.153
It looks like it has strong prospects for future growth	-.177	.064	.922	.042
It is a strong company	.107	.072	-.036	.804
It seems to be environmentally responsible	.074	.951	.059	-.329
It seems it to ensure a clean environment	-.168	.829	.003	.191
It supports development projects	-.124	.826	-.103	.230

Note. Bolded items represent items that constitute each of the four factor components. These fifteen items were retained and used in subsequent PA and EFA. The four-factor model explained about 71.6% of the variance.

Exploratory Factor Analysis

In order to confirm which components of the corporate reputation measure to retain, an EFA was also conducted using the 15 items retained after the item-screening process. Despite that both the Kaiser-Guttman (i.e., “eigenvalues greater 1.0”) and the Scree plot methods had supported a four-factor solution, they are not without shortcomings (see, for example Hayton, Allen, & Scarpel, 2004). Therefore, an eigenvalue Monte Carlo or Parallel Analysis (e.g., Hayton, Allen, & Scarpel, 2004) was conducted using O’Connor’s (2000) SPSS syntax. For this test, eigenvalues were drawn at

the 95th percentile from 1,000 random permutations of the data from the actual sample. After comparing the actual and the random permutations, only those factors with *actual* eigenvalues greater than the randomly generated eigenvalues were retained. The results, which are presented in Table 19, indicated that the three *actual* eigenvalues were greater than the permutations generated via the PA (using both the 50th and 95th percentile criteria). Therefore, unlike the Keiser-Guttman and the Scree test approach to component retention, the PA indicated a three-factor solution. Therefore, three items (“*It looks like a good company to work for,*” “*It seems to treat its people well,*” and “*It is a strong company*”) were not retained for further analysis.

Table 19

Raw and Random Eigenvalues from Parallel Analysis for Perceived Corporate Sustainability Measure

Component	Raw Data	Random (Mean)	Random (95th Percentile)
1	5.971894	1.621740	1.840177
2	1.871903	1.455257	1.585768
3	1.677289	1.340661	1.443408
4	1.218877	1.246879	1.333610
5	.768773	1.166932	1.235720
6	.652752	1.097834	1.153806

Note: Eigenvalues for Factors 1, 2, 3, 4, 5, and 6 were shown to definitively establish a three-factor results pattern. Subsequent factors were omitted from the table as pattern was clearly established.

Based on the three-factor solution extracted via the PA, an EFA was conducted using a PAF, KMO = .743. Bartlett’s Test of Sphericity was also significant: $\chi^2(15) = 419.75, p < .001$. For the purposes of item retention, items were required to post MSAs, extracted communality scores, and factor loadings that were .50 or greater. See Table 20 for the communalities and factor loadings. All measures were in excess of .60, and therefore satisfied the criteria for retention. In addition, none of the six items retained had

complex structures. A two-factor structure was returned. The first factor (*corporate leadership and stewardship*) explained 53.51% of the variance in the model ($\alpha = .829$, $M = 19.57$, $SD = 5.31$). The second factor (*community-based corporate reputation*) accounted for 24.73% of the TVE ($\alpha = .77$, and $M = 9.43$, $SD = 3.20$). Thus, in all, the two-factor model — consisting of six items — explained 78.24% of the *perceived corporate sustainability* among the sample studied. The final scale items are presented in Appendix C.

Table 20

Final Rotated Component Scores and Factor Loadings for Perceived Corporate Sustainability Measure

Item	Loading		Communality
	1	2	
It has employees who treat local communities courteously		.844	.689
It treats its local communities fairly		.986	.962
It seems to have excellent leadership	.616		.597
It seems to be environmentally responsible	.764		.569
It seems it to ensure a clean environment	.842		.664
It supports development projects	.834		.663

Note. Exploratory factor analysis based on principal axis factoring. Only factor loadings greater than .40 are reported here. TVE for this two-factor perceived corporate sustainability measure was 78.24%. Factor 1 explained 53.51% of the variance and factor 2 explained 24.73%.

Replicability Test for Perceived Corporate Sustainability Measure

A split test sample validation test (Thompson, 2004; Osborne & Fitzpatrick, 2012) was conducted on the extracted factors to assess the likelihood of the factor structure being replicated from samples drawn from the same or similar populations. The goal of this replicability testing was to assess the reliability of the proposed perceived corporate sustainability measure (PCSM). The sample was split and all cases were randomly

assigned to one of two groups. The assignment of cases to the groups was done using a randomly generated seed in SPSS. Table 21 summarizes the results of the replicability analysis. The outcome of this test indicates that the factor structure of the PCSM developed in this study is somewhat likely to be replicated in subsequent studies that use representative samples from the same (or similar population). A PAF conducted on both split samples satisfied Osborne and Fitzpatrick's (2012) first replicability criterion. That is, it returned a similar two-factor structure. However, the more conservative criterion — that all factors should return the same number of items and post factor loadings within a “reasonable range” — was only marginally fulfilled. As seen in Table 21 one item (“*It seems to have an excellent leadership*”) in Sample 1 belonged to the *corporate leadership and stewardship* factor, as it was in the raw data. But the same item was assigned to the *community-based corporate reputation* dimension in Sample 2. Several iterations of the data yielded a similar crossovers and sometimes complex structure. However, as the literature suggests (e.g., Osborne and Fitzpatrick, 2012), this is a likely manifestation of the relatively small sample size rather than the instruments' lack of reliability. In view of this reasoning, coupled with the exploratory nature of this study and the fact that the survey was administered face-to-face, the perceived corporate sustainability measure herein developed is regarded as a valid⁴⁶ and reliable measure of the construct it is testing.

⁴⁶ Both face and construct validity

Table 21

Factor Loadings and Communalities for PCSM
a. Split sample 1

Item	Loading		Communality
	1	2	
It has employees who treat local communities courteously.		.994	.983
It treats its local communities fairly		.997	.989
It seems to have excellent leadership	.658		.591
It seems to be environmentally responsible	.713	.86	.506
It seems it to ensure a clean environment	.776	.86	.598
It supports development projects	.774	.85	.595

b. Split sample 2

Item	Loading		Communality
	1	2	
It has employees who treat local communities courteously.	1.0		.99
It treats its local communities fairly	1.0		.99
It seems to have excellent leadership	.57		.58
It seems to be environmentally responsible		.86	.73
It seems it to ensure a clean environment		.86	.74
It supports development projects		.85	.74

Note. Bolded item is assigned to the *community-based corporate reputation* factor in this sample.

Next, the results on public perceptions about the risks associated with Ghana's offshore oil production are presented.

What Do Residents Fear About Ghana's Offshore Oil Exploration and Production?

This study was primarily interested in the antecedents (cultural, contextual, and mediated) of people's judgments and perceptions about Ghana's offshore oil exploration and production. Before presenting results on these, I first present an analysis of what the major concerns are. This section assesses the environmental, social, and economic concerns (and benefits) people associate with the offshore exploration activities. The concerns are classified in two different ways. The first is the taxonomy for thinking about risk perceptions, which has been discussed earlier in this chapter. This taxonomy

classified the mechanisms that underlie public risk perceptions as scapegoating and/or tacit knowing. As explained on earlier, this categorization was derived from interviews with opinion leaders, community leaders, activists, and other individuals in the study area, with implicit meanings (Douglas, 1999) and mental models (Morgan et al., 2002) as analytical tools. The second taxonomy is based on the concept of sustainable development and classifies public concerns simply as environmental, social, and economic. The environmental concerns focus mainly on (possible) effects on the natural environment; and social concerns emphasize the effects oil exploration activities have — or could have — on the general way of life in adjoining communities. The economic concerns include net livelihood implications at the micro level and macroeconomic effects such as lack of monetary flow to the public sector. The two taxonomies of thinking about the perceived risks and benefits associated with Ghana’s oil exploration activities are discussed in turn.

For illustrative purposes—and to provide grounds for further analyses—I examined the basic structure of public risk perceptions and concerns. The general extent to which local residents perceive Tullow Ghana Limited’s corporate sustainability efforts (or lack of) as adequate are also assessed and reported.

What Do Residents Think About the Benefits of Ghana’s Oil Production?

As summarized in Table 22a, generally, residents were found to be highly optimistic about the contribution Ghana’s oil exploration and production activities could make toward their general well-being. For example, while only 8% of respondents “strongly disagreed” or “disagreed” that, “*The benefits of petroleum production are likely to be very large,*” 86.7% either somewhat agreed, agreed or strongly agreed with the

statement. When the question was posed in terms of benefits versus risks (i.e., “*On the whole, the benefits of the petroleum production will outweigh the risks*”), residents did not respond any different than they did to the first question. Those who were pessimistic about the overall benefits (vis-à-vis risks) of the offshore oil production activities were in the minority (22.8%), while the optimists were in the majority (64.7%). Similarly, those who generally agreed⁴⁷ (78.4%) with the view that, “*The offshore petroleum production will improve our economic well-being*” were greater than those who disagreed with the statement. Interestingly, those who generally agreed⁴⁸ with the statement, “*The offshore petroleum production will improve our health,*” also exceeded the number of respondents who generally disagreed with the statement, accounting for 55.9% and 34.4% respectively.

To further understand local residents’ perception of the benefits associated with the offshore oil production, their views on Ghana’s offshore oil exploration and production as a *development imperative* was also assessed: that is, the view that the oil production is necessary to meet the general development needs and energy needs at the national and community levels. (See Table 22b.) Compared to the results pattern in Table 22a, it was found that an overwhelming majority of respondents viewed Ghana’s oil production as a development imperative. Close to 90 percent (i.e., 87.5%) and 85.3% of the respondents agreed⁴⁹ that, “*Offshore petroleum production is necessary to meet the nation’s development needs*” and “*Offshore petroleum production is necessary to meet the*

⁴⁷ This includes those who said they “somewhat agree,” “agree,” as well as those who said they “strongly agree.”

⁴⁸ This includes those who said they “somewhat agree,” “agree,” and those who said they “strongly agree” to the statement.

⁴⁹ That is sum of those who “strongly agreed,” “agreed,” and “somewhat agreed” as opposed to the sum of those who “strongly disagreed,” “disagreed,” and “somewhat disagreed.”

community's development needs," respectively. But only 5.7% and 5.1% disagreed on the respective issues. And, 90.5% of the respondents surveyed supported the view that the offshore petroleum production is "necessary to meet the nation's energy needs," while 84.6% thought it was "necessary to meet the [local] community's energy needs." Despite that the respondents supported the oil-production-as-a-development-imperative view, more people thought the petroleum production was necessary for national needs than local needs.

Table 22

Perceived Benefits of and Support for Ghana's Offshore Oil Production

a. Perceived benefits of Ghana's offshore oil exploration and production

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree	N
The benefits of the petroleum production are likely to be very large	2.9%	5.1%	0	5.1%	8.8%	22.8%	55.1%	136
On the whole, the benefits of the petroleum production will outweigh the risks	7.4%	11.1%	4.4%	11.9%	16.3%	29.6%	19.3%	135
The offshore petroleum production will improve our health	13.2%	15.4%	5.9%	9.6%	14.7%	18.4%	22.8%	136
The offshore petroleum production will improve our economic well-being	9.6%	2.9%	2.9%	5.9%	8.8%	26.5%	43.4%	136

b. Support for offshore oil production as a development imperative

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree	Total
Offshore petroleum production is necessary to meet the nation's development needs	3.0%	1.5%	2.2%	4.5%	11.2%	29.1%	48.5%	134
Offshore petroleum production is necessary to meet the community's development needs	3.7%	3.0%	2.2%	4.5%	11.2%	31.3%	44.0%	134
Offshore petroleum production is necessary to meet the nation's energy needs	2.3%	.8%	2.3%	2.3%	15.0%	33.8%	43.6%	133
Offshore petroleum production is necessary to meet the community's energy needs	3.1%	1.5%	2.3%	4.6%	15.4%	32.3%	40.8%	130

Note: Entries represent percentage of respondents who strongly disagreed, disagreed, somewhat disagreed, somewhat agreed, agreed, or strongly agreed to each question posed

Although the raw percentages support this view, a further statistical test did not show a significant difference between the public's support for petroleum production as a *national* development imperative versus a *local* development imperative. A paired-sample *t*-test was calculated to compare the mean support for the view that "Offshore petroleum production is necessary to meet the nation's development needs" to the mean support for the view that "Offshore petroleum production is necessary to meet the community's development needs." The mean on national development imperative was 7.38 (*SD*=11.32) and that for community development was 7.24 (*SD*=11.35). No significant difference was found ($t(135) = 1.63, p > .05$). A second paired-sample *t*-test was run to assess the

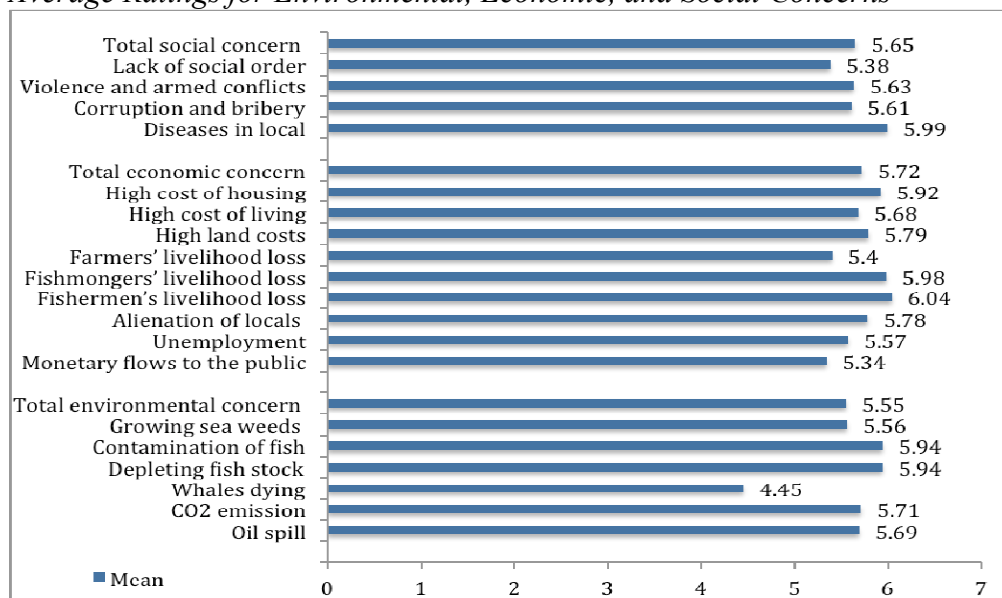
difference between the view that petroleum production was necessary to meet Ghana’s energy needs *versus* the community’s energy needs. The mean for the former was 8.08 ($SD=13.76$) and that for the latter was 9.99 ($SD=19.24$). Again, the analysis did not find a significant difference between the two views ($t(135) = -1.62, p>.05$).

How Concerned Are People About Tullow’s Negative Impacts?

As seen in Figure 5, the high mean scores, which range between 6.04 and 4.45, indicate that the average person is somewhat concerned or very concerned about the negative repercussions of Ghana’s offshore petroleum production. At the aggregate level, local residents appear more concerned about economic risks, followed by social risks, and environmental risks in that order.

Figure 5

Average Ratings for Environmental, Economic, and Social Concerns



Note. $N=136$. Values represent mean values for how concerned local residents are that Ghana’s offshore oil exploration and production would lead to these issues. All items were on a 7-point scale, when 1 represents “No important at all” and 7 represents “Extremely Concerned.”

However, concluding that residents of Half Assini are more concerned about the economic consequences of oil production than they are about the ecological impacts could be misleading. Therefore, in this case, examining the individual item means is more informative than the aggregate. Details are presented in Table 23.

Table 23

Average Ratings for Environmental, Economic, and Social Concerns

Concern	Mean	Median
<i>Environmental</i>		
Oil spill	5.69	6
CO ₂ emission	5.71	6
Whales dying	4.45	5
Depleting fish stock	5.94	7
Contamination of fish	5.94	7
Growing sea weeds	5.56	6
Total	5.55	
<i>Economic</i>		
Inadequate monetary flows to the public sector	5.34	6
Unemployment	5.57	7
Alienation of locals from the industry	5.78	7
Fishermen's loss of livelihood	6.04	7
Fishmongers' loss of livelihood	5.98	7
Farmers' loss of livelihood	5.40	6
High land costs	5.79	7
High cost of living	5.68	7
High cost of rent and accommodation	5.92	7
Total	5.72	
<i>Social</i>		
Diseases in local communities	5.99	7
Corruption and bribery	5.61	6
Violence and armed conflicts	5.63	6
Lack of social order	5.38	6
Total	5.65	

Note. N=136

On a 7-point scale, with 1 being “not concerned at all” and 7 being “extremely concerned,” the top three issues people were most concerned about are fishermen’s losing their livelihoods ($M=6.04$), the outbreak of diseases in the local communities ($M=5.99$), fishmongers losing their livelihoods ($M=5.98$), and contamination of fishes in the ocean ($M=5.94$) in descending order. And the issues they are relatively less concerned about are whales dying ($M=4.45$), inadequate monetary flows to the public sector ($M=5.34$), and a potential breakdown in social order (5.38) in ascending order. Apart from whales dying being on average the issue most people were least concerned about, it also had the lowest median score.

An examination of the breakdown for the individual issues shows that in contrast to the high expectation or belief that the oil production would lead to socioeconomic development, most respondents were concerned that the exploration activities might result in ecological damage. These concerns⁵⁰ are oil spills, hazardous amounts of carbon dioxide emissions, sea mammals (i.e., whales) dying, depleting fish stock, contamination of fish, and free-floating seaweeds (i.e., *sargassum*).

As seen in Table 24, for each of these environmental issues, individuals who said they were “very concerned,” “concerned,” and “somewhat concerned” exceeded the number of persons who reported that they were “very unconcerned,” “unconcerned” and “somewhat unconcerned.”

⁵⁰These issues were identified during the formative research stage through interviews with residents and opinion leaders in the local communities as well as through media scanning.

Table 24

Environmental Concerns About Ghana's Offshore Oil Exploration and Production

	Not Concerned at all	Not Concerned	Somewhat Unconcerned	Neutral	Somewhat Concerned	Concerned	Very Concerned	<i>N</i>
Oil spill	6.6%	2.9%	1.5%	6.6%	15.4%	19.9%	47.1%	136
CO ₂ emission	6.6%	2.2%	2.2%	5.1%	13.2%	27.2%	43.4%	136
Whales dying	17.0%	9.6%	7.4%	11.9%	11.1%	17.0%	25.9%	135
Depleting fish stock	3.7%	2.9%	1.5%	5.1%	12.5%	22.8%	51.5%	136
Contamination of fish	4.4%	5.9%	2.2%	2.9%	6.6%	19.1%	58.8%	136
Growing sea weeds	6.0%	5.3%	3.8%	6.8%	13.5%	18.8%	45.9%	133

Note: Entries represent percentage of responses in each category.

People were most concerned about depleting fish stocks, contamination of fishes, carbon dioxide emissions, oil spill, growing sea weeds (along the coastline), and whales dying as a result of the offshore petroleum activities — representing 86.6%, 84.5%, 83.8%, 82.4%, 76.5%, and 53.6%, respectively.⁵¹

Similar to the findings about environmental concerns, respondents were found to be generally concerned about the economic implications Ghana's offshore petroleum activities could have on the country (at the macro-level), the community (local level), and on individuals. Nine economic concerns were examined: inadequate monetary flows to the public sector, unemployment, alienation of locals from the industry, fishermen's loss of livelihood, fishmongers' loss of livelihood, farmers' loss of livelihood, high cost of living, and high cost of rent and accommodation.

As seen in Table 25, for each of these economic concerns, individuals who said they were “very concerned,” “concerned,” and “somewhat concerned” exceeded those who reported that they were “very unconcerned,” “unconcerned,” and “somewhat unconcerned.” In summary, the residents surveyed were most concerned about high cost of housing (87.6%), fishermen's loss of livelihood (86%), fishmongers' loss of livelihood (85.3%), high cost of lands (83.9%), alienation of local residents from the oil industry (81.7%), high cost of living (79.4%), unemployment (77.3%), farmers' loss of livelihood (74.3%), inadequate monetary flow to the public sector (68.5%).

⁵¹ That is sum of the proportion of respondents who were “very concerned” “concerned,” and “somewhat concerned.”

Table 25

Economic Concerns about Ghana's Offshore Oil Exploration and Production

	Not Concerned at all	Not Concerned	Somewhat Not concerned	Neutral	Somewhat Concerned	Concerned	Very Concerned	Total
Inadequate monetary flows to the public sector	6.1%	3.8%	7.6%	11.5%	12.2%	20.6%	38.2%	131
Unemployment	10.3%	5.1%	2.9%	4.4%	7.4%	16.2%	53.7%	136
Alienation of locals from the industry	5.1%	5.9%	3.7%	3.7%	11.8%	12.5%	57.4	136
Fishermen's loss of livelihood	4.4%	2.2%	2.2%	5.1%	6.6%	21.3%	58.1%	136
Fishmongers' loss of livelihood	5.2%	2.2%	3.0%	3.0%	9.0%	20.9%	56.7%	134
Farmers' loss of livelihood	11.9%	7.4%	2.2%	3.7%	5.9%	20.0%	48.9%	135
High land costs	6.7%	3.7%	3.0%	2.2%	9.6%	24.4%	50.4%	135
High cost of living	8.9%	5.2%	2.2%	3.7%	4.4%	23.7%	51.9%	135
High cost of rent and accommodation	6.6%	2.2%	.7%	2.9%	9.6%	26.5%	51.5%	136

Note: Entries represent percentage of responses in each category.

Table 26

Social Concerns of Ghana's Offshore Oil Exploration and Production

	Not Concerned at all	Not Concerned	Somewhat Unconcerned	Neutral	Somewhat Concerned	Concerned	Very Concerned	Total
Diseases in local communities	5.9%	2.2%	1.5%	4.4%	4.4%	26.5%	55.1%	136
Corruption and bribery	6.7%	5.2%	2.2%	8.1%	9.6%	20.0%	48.1%	135
Violence and armed conflicts	5.9%	3.7%	5.1%	6.6%	10.3%	22.1%	46.3%	136
Lack of social order	5.2%	5.9%	5.9%	7.4%	16.3%	23.0%	36.3%	135

Note: Entries represent percentage of responses in each category.

With respect to what is termed ‘social risk’ in this study (i.e., diseases in local communities, corruption and bribery, violence and armed conflicts, and lack of social order), a generally high level of concern was found. Thus on all these social issues, most people reported that they were “very concerned,” “concerned,” and “somewhat concerned” — more than those who said they were “not concerned at all,” “not concerned,” and “somewhat not concerned.” See Table 26 for these results. In sum, respondents were most concerned that the oil exploration and production could lead to diseases in their local communities (86%), violence and armed conflicts (78.7%), corruption and bribery (77.7%), and lack of social order (75%), in that order.

In addition to measuring Half Assini residents’ concerns about the environmental, economic, and social repercussions of Ghana’s offshore oil production, respondents’ risk perception was also assessed using Kahan’s (2011) industrial strength risk perception measure. As reported in Table 27, more people think Ghana’s oil production activities pose high risk⁵² for their local community than for the country as a whole. This finding is not surprising, giving the relative proximity of the oil field to the adjoining coastal districts.

A paired-sample *t*-test was calculated to compare the mean ‘national oil risk perception’ and the ‘local community oil risk perception.’ The mean for the amount of risks the offshore oil production poses for Ghana as a whole was 4.87 (*SD*=1.71) and the mean for the risks it poses for the local community was 5.45 (*SD*=1.60). The analyses revealed a significant difference between the mean of the two risk perception scores, $t(131) = -4.73, p < .001$. A second paired-sample *t*-test was ran to assess the difference between the perceived risks the oil production poses for the environment, health, and safety of *Ghana as a whole* and the *local community*. The

⁵² Includes three response categories: “a lot of risk,” “risk,” and “quite a bit of risk.”

mean for the former was 5.20 ($SD=1.83$) and that for the latter was 5.48 ($SD=1.66$). Again, this analysis yielded a significant result, $t(131) = -3.10, p < .003$. Thus, generally, people were more likely to perceive the risks the offshore oil exploration and production pose for their local communities to be higher than the risks the oil activities pose for the country—Ghana—as a whole. While this finding seems intuitive, it runs contrary to results reported by other researchers (e.g., Lima & Castro, 2005).

Besides risk perceptions and concerns, this study was also interested in finding out the about perceived CSR —corporate sustainability. In the next section, the researcher presents an overview of results about the extent to which the surveyed public, and by extension the study population, *trust* and *perceive* Tullow Ghana Limited as a responsible company: an agent of socio-economic change and a good environmental steward.

Table 27

Industrial Strength Risk Perception (General Risk Perception)

	No Risk at all	No Risk	Not much Risk	Neither	Quite a Bit of Risk	Risk	A lot of Risk	Total
Ghanaian society as a whole	6.0%	3.7%	10.4%	17.9%	20.9%	20.9%	20.1%	134
This community as a whole	3.0%	3.7%	7.4%	9.6%	15.6%	31.1%	29.6%	135
Environment, health, and safety of this country	6.0%	4.5%	9.0%	11.2%	15.7%	22.4%	31.3%	134
Environment, health, and safety of this community	3.8%	3.8%	6.0%	11.3%	10.5%	32.3%	32.3%	133

Note: Entries represent percentage of responses in each category. The question posed was: On a scale of 1-7, with 1 being “least” and 7 being most, how much risk does Ghana’s offshore oil production pose for (a) the Ghanaian society, (b) the local community, (c) environmental health, safety of the country, and (d) the environmental health and safety of the community.

Trust and Perceived Corporate Sustainability

First, to assess the extent to which local residents trust Tullow Ghana Limited, the study asked them to rate extent to which they agreed to the five questions (1= least agreement and 7= most agreement). The questions were, “I trust this company,” “I have great confidence in this company,” “This company has high integrity,” “I can depend on this company to do the right thing,” “This company can be relied upon” ($\alpha = .902$, $M=22.35$, $SD= 7.24$). For the first scale item, the proportion of respondents who self-reported that they trust Tullow were greater (59.7%) than those who reported otherwise (23.1%). A similar pattern was found for the other four items. Together, 60%, 49.6%, 55.1%, and 54.4% of the respondents “strongly agreed,” “agreed,” and “somewhat agreed” to the second, third, fourth, and fifth scale items respectively. See Table 28 for a breakdown.

Second, a six-item PCSM (reported earlier in this chapter) was used to ascertain the extent to which local residents perceived Tullow as a ‘responsible’ company. The measure had two subscales. The first is *corporate leadership and stewardship* ($\alpha = .829$, $M = 19.57$, $SD = 5.31$), and the second is *community-based corporate reputation* ($\alpha = .77$, and $M = 9.43$, $SD = 3.20$). Despite the high proportion of residents who were concerned about the potential ecological, economic, and social risks that could result from Ghana’s offshore oil activities, majority of them had a favorable view of Tullow Ghana’s⁵³ environmental stewardship and community engagement. See Table 29 for details.

⁵³ Tullow Ghana Limited is the lead operator of the Jubilee oilfield, which is where oil production is currently ongoing. Majority (74.3%) of the surveyed public could not recognize the name “Tullow Oil,” and therefore the question was posed as “To what extent do you agree with these statements about *the company operating the oil field?*”

Table 28

Extent to Which Respondents Trust Tullow Oil (i.e., Corporate Trust)

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree	Total
I trust this company	11.9%	6.0%	5.2%	17.2%	23.9%	16.4%	19.4%	134
I have great confidence in this company	6.2%	9.2%	6.2%	18.5%	23.8%	25.4%	10.8%	130
This company has high integrity	6.6%	7.4%	9.1%	27.3%	21.5%	19.0%	9.1%	121
I can depend on this company to do the right thing	7.1%	8.7%	7.1%	22.0%	19.7%	25.2%	10.2%	127
This company can be relied upon	8.0%	7.2%	4.8%	25.6%	23.2%	20.0%	11.2%	124

More than 60 percent (61.7%) of the respondents agreed that Tullow Oil’s employees treat local communities with respect, while 23.3% disagreed. Similarly, 73.6% thought Tullow Oil treats local communities fairly, while 19.4% opposed this view. The perceived corporate sustainability items that had the most people disagreeing was “[Tullow Oil] seems to ensure a clean environment,” with was opposed by 22.5% of the respondents. On this item, close to 60 percent (59.7%) responded to the question in the affirmative.

Table 29

Description of Respondents’ Perceived Corporate Sustainability

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree	Total
It has employees who treat local communities courteously	9.0%	6.8%	7.5%	15.0%	21.8%	22.6%	17.3%	133
It treats its local communities fairly	8.2%	5.2%	6.0%	17.2%	26.1%	23.9%	13.4%	134
It seems to have excellent leadership	3.1%	2.3%	5.4%	15.5%	21.7%	27.1%	24.8%	129
It seems to be environmentally responsible	6.2%	6.9%	6.2%	17.7%	30.0%	20.8%	12.3%	130
It seems to ensure a clean environment	7.8%	8.5%	6.2%	17.8%	27.1%	18.6%	14%	129
It supports development projects	7.8%	3.1%	8.5%	12.4%	18.6%	33.3%	16.3%	129

The following sections address the main research questions 1, 2, 4, and 5 posed by this project. These questions pertain to how different cultural orientations predict risk perceptions associated with Ghana’s offshore oil and the role of affective mental imagery

in the risk perception attitude-formation process. It also includes results on the role of formal and informal information networks, and whether or not perceived corporate sustainability amplifies or attenuates risk perceptions. Before answering the research questions, a correlation matrix was run to assess how these predictors related to each other (Table 30a) and how the outcomes relate to each other (Table 30b).

Table 30

Correlation Matrix of Four Cultural Worldviews, Affect Scales, Risk Perception Measures, and Support for Oil Activities

a. Four Worldviews and Affect Scales

Measure	1	2	3	4	5	6	7	8	9
Community Attachment 1	--								
Community Attachment 2	.328**	--							
Grid Measure	.045	.075	--						
Cultural Preservation	.024	.132	.073	--					
Offshore Oil Affect	-.157	-.239	-.100	.041	--				
Tullow Affect	-.155	-.272	.120	-.204	.536*	--			
Community Attachment 3	.037	.226**	.032	.141	.099	.322	--		
Government Regulation	-.042	-.174*	-.052	-.448**	.009	.073	-.313**	--	
Business Autonomy	.065	-.008	.169*	-.070	.215	-.121	-.226**	.343**	--

Note. N= 136. **Correlation is significant at 0.01 level (2-tailed). *Correlation is significant at 0.05 level (2-tailed). Tullow's affective rating and preservation worldview have the highest correlation, which is positive. This followed by preservation and government regulation (which is negative), and this is followed by attitude toward government regulation and preservation worldview, which is also negative.

b. Risk Perception Measures and Support for Oil Activities

Measures	1	2	3	4	5	6
Perceived Benefits	--					
Environmental Concern	.083	--				
Economic Concern	.053	.179*	--			
Social Concern	-.002	.221**	.074	--		
General Risk Perception	-.111	.229**	.137	.174*	--	
Support for Oil Activities	-.010	-.186*	-.012	-.071	-.108	--

Note. N=136 *Correlation is significant at 0.05 level (2-tailed). **. Correlation is significant at 0.01 level (2-tailed). Perceived benefit is not significantly correlated with any of the risk perception measures. Environmental concern is positively correlated with economic concern and social concern, but is inversely related to support of oil activities. General risk perception is also positively correlated with social concern.

Worldviews and General Risk Perception (ISM)

To address RQ1 (i.e., “Do different cultural worldviews predict different environmental, economic, and social risk associated with oil drilling activities offshore West Cape Three Point?”), a series of simple regression analyses were conducted using the Ghanaian Cultural Cognition Worldviews Scale, the short form of Schwartz’ (1994) World Values Scale, the Sense of Community measure adapted from the environmental psychology and public policy literature (e.g., MacMillan & Chavis, 1986; Irwin, Simmons, & Walker, 1999; Lima & Castro, 2005) as predictors and on a number outcome variables: industrial strength risk perception measure (Kahan, 2011), environmental, economic and social concerns, perceived benefits, and support for offshore oil production.

Community Orientation and General Risk Perception

The industrial strength risk perception measure (ISM) (“*How much risk does Ghana’s offshore petroleum production pose for the environment, human health, safety, or prosperity of this community?*” and “*How much risk does Ghana’s offshore petroleum production pose for the environment, human health, safety, or prosperity of this country?*”) was regressed on the all three subcomponents of the sense of community measure. The sense of community measures were used as proxies for individuals’ attachment to their local community or their community orientation. First, a simple linear regression was calculated to predict respondents’ overall risk perception (i.e., ISM) based on their *general emotional tone* about their community. The regression equation was significant with the model explaining about 10% (i.e., $R^2 = .099$) of the variance in risk perceptions

associated with offshore oil production, $F(1, 132) = 14.53, p=.000$. Respondents' predicted risk perception was equal to $4.0 + .26$ (General Emotional Tone). Thus, the effect of general emotional tone on risk perception was positive such that local residents' average risk perceptions increased by 25 points for every 100 unit increase in residents' general emotional feeling towards their local community, $b= .32, t = 3.81, p= .000, 95\% \text{ CI} [.13, .40]$. These results imply that as people expressed a more positive feeling about their local community, they tended to think the risks associated with offshore oil production were higher. They become more inclined to think that the petroleum exploration and production in that region posed a lot more risk for the environment, human health, safety, and prosperity of the community in particular and Ghana as a whole. In other words, they become more protective of their environment. This association between affinity for their local community and risk perceptions is perhaps an indication of some form of identity-protective cognition (see e.g., Kahan et al., 2007).

Second, risk perception was regressed on a two-item *individual sense of community* measure. The regression equation was found to be significant, $F(1, 132) = 8.86, p=.003$, and the model predicted a 6.3% of the variance in the risks residents associated with Ghana's offshore oil production. Respondents' predicted risk perception was equal to $3.90 + .26$ (Sense of Community). As seen from the equation specified above, the effect sense of community has on public risk perception was also positive such that local residents' average risk perceptions increased 26 points for every 100 point increase in their sense of community, $\beta= .25, b= .26, t = 2.98, p= .003, 95\% \text{ CI} [.09, .44]$. Thus, as people felt better about their community they tended to think the risks associated with offshore oil production were higher, perhaps an indication of 'identity' protective

cognition (Kahan et al., 2007). Third, to determine whether community integration (another measure of psychological sense of community) was associated with risks perceptions, a simple linear regression test was conducted. The regression equation was not significant, $F(1, 134) = .04, p = .85$. The model explained no variance in the risks people associated with the offshore petroleum production activities. Thus, the extent to which residents are integrated into the local community was not a significant predictor of the risks they associated with the oil production activities offshore West Cape Three Point.

Universal Values and General Risk Perception

Besides using sense of community as a proxy for community orientation worldviews, the study also regressed Schwartz' (1992, 1994) WVS on risk perception to assess the extent to which cultural worldviews relate to individual's environmental risk perceptions. A first regression analysis using the seven-item WVS tested in this research did not find the set of universal values to be a significant predictor of risk perception among the Ghanaian population studied here, $F(1, 132) = 1.1, p = .29, R^2 = .008$. However, when a shorter four-item scale with items that were chosen to theoretically reflect the Cultural Theory's idea of how value orientations inform social organization, social practices, and views, a significant regression equation was found, $F(1, 131) = 10.33, p = .002$. The four items are universalism (in this case, environmental protection), respect for tradition, conformity, and security (all of which capture aspects of Mary Douglas' grid-group typology) (Cronbach's alpha (α) = .65). In this dissertation, this four-item

worldview measure is called “preservation” —a *grid* orientation that reflects people’s orientation towards preserving their general ways of life, including environment, security, conformity, and respect for authority. The model containing the preservation worldview dimension predicted about 7% of the variance in the risks individuals associated with Ghana’s offshore oil production. Respondents’ predicted risk perception was equal to 1.28 +.63 (Universal Values). The effect of these universal values (i.e., environmental protection, respect for tradition, conformity, and security) on risk perception was positive such that local residents’ average risk perceptions increased 63 points for every 100 point increase in their orientation toward respect for tradition, environmental protection, conformity, and security, $b = .63$, $\beta = .26$, $t = 3.13$, $p = .002$, 95% CI [.23, 1.02]. Thus, as the public became more oriented toward environmental protection, respect for tradition, conformity, and security, they tended to perceive the risks associated with Ghana’s offshore oil production as high.

Ghanaian Cultural Cognition Measure and General Risk Perception

A third measure of cultural worldviews used in this study was the Ghanaian version of cultural cognition worldview scale (GCCWS) developed and tested for construct validity as part of this project. The GCCWS had three subscales: one grid and two group components. The grid dimension assessed people’s latent disposition toward equity and fairness, with egalitarianism (low grid) and hierarchy (high grid) as two ends of the conceptual continuum. The group dimensions measured latent orientations toward government regulation and corporate autonomy, with individualism (low group) and

communitarianism (high group) as polar opposite of this factor. It was expected that individuals with relatively egalitarian orientations (as opposed to hierarchists) to view the petroleum production as a source of widening inequality and therefore perceive the risks associated with it as high. Similarly, individuals who ascribed to a “we are in this together” worldview (high group or communitarianism) were expected to judge the risks associated with Ghana’s oil production as high, while individualists perceive the risks as low. However, the linear regression for this grid measure did not yield a significant result, $F(1, 132) = .97, p=.33$. It explained a negligible proportion of the variance in risks perception ($R^2=.007$). Also, the two group measures — attitude toward government’s role in regulating corporate behavior and business autonomy— were not found to be significant predictors of public risk perceptions, posting $F(1, 132) = .47, p=.50, R^2 =.004$ and $F(1, 132) = .71, p=.40, R^2 =.005$ respectively. Thus, cultural worldview as measured with the Ghanaian cultural cognition worldviews scale was not a significant predictor of risk perceptions (measured with the ISM). An alternative interpretation (one which is favored in this study) is that the scales were not able to detect risk perceptions associated with Ghana’s petroleum exploration activities.

Worldviews and Environmental, Economic, and Social Concern

Similar analyses were run using environmental concern, economic concern, and social concern in lieu of the industrial strength risk perception measure. The results for the three types of concerns are presented as follows.

Worldviews and Environmental Concern

First, none of the three sets of community measures (i.e., emotional tone, individual sense of community, and community integration) were found to be significant predictors of environmental concern associated with Ghana's offshore oil production.⁵⁴ Second, two of the GCCWS —attitudes toward equity and fairness⁵⁵ and attitudes toward business autonomy⁵⁶ —did not yield any significant associations with environmental concerns. However, people's beliefs about government's role in regulating corporate behavior, which is a third component of the GCCWS, significantly predicted how concerned they were that petroleum production might lead to some environmental problems, $F(1, 134) = 6.10, p = .02$, with an R^2 of .04. Based on the observed belief in government regulations, environmental concern is predicted to be $6.3 + (-.27)(\text{belief in government regulation})$. The effect of this worldview dimension on environmental concern was negative such that on average, the public's environmental concern reduced by 27 points for every 100 point increase in their belief that government should regulate corporate behavior, $\beta = -.21, b = -.27, t = -2.47, p = .01, 95\% \text{ CI}[-.49, -.06]$. Thus, surprisingly, as the average local resident shared in the view that government *ought* to regulate corporate behavior, he or she became more skeptical that offshore petroleum activities could lead to environmental damage. This result suggests that those who share in this

⁵⁴ The linear regression, using the first sense of community measure (i.e., general emotional tone) was not significant, $F(1, 134) = .69, p = .41, R^2 = .005$. Similarly, the second and third sense of community factors did not yield significant results. Their respective equations were $F(1, 134) = .64, p = .42, R^2 = .005$ and $F(1, 134) = .04, p = .85, R^2 = .005$.

⁵⁵ The linear regression calculated to predict environmental concern based on people's grid worldviews was not significant $F(1, 134) = 1.10, p = .30, R^2 = .008$.

⁵⁶ Also, our analyses did not find a significant association between attitudes toward business autonomy and environmental concern, $F(1, 134) = .38, p = .54, R^2 = .003$.

worldview might be doing more than ascribing to government regulation: it appears they also have *faith* in government's ability to regulate the offshore petroleum production industry in a way that would prevent or at least minimize ecological harm.

Third, the four-item cultural preservation dimension adapted from Schwartz (1992, 1994), was found to be a significant predictor of environmental concerns people had about the offshore petroleum activities, $F(1,133) = 8.48, p=.004$. The model predicted 6% of the variance in environmental concerns people had about the oil production. The predicted environmental concern was equal to $2.90 +.45$ (Preservation). The effect of the universal *preservation* worldview, comprising values such as environmental protection, respect for tradition, conformity, and security, on environmental concern was positive. The effect was such that the average local residents' environmental concern increased by 45 points for every 100 point increase in their orientation to respect for tradition, environmental protection, conformity, and security, $\beta = .25, b = .45, t = 2.9, p = .004, 95\%$ CI [.15, .76]. Thus, people who ascribed to ideals such as environmental protection, respect for tradition, social conformity, and security were more likely to think the offshore oil production might result in some ecological problems such as oil spills, CO₂ emissions, contamination of fishes in the ocean, and a general depleting in fish stock.

A multiple linear regression was calculated to predict respondents' environmental concern based on their universal values (as measured with the four-item WVS) and their views on government's role in regulating corporate behavior. A significant regression coefficient was found, $F(2, 132) = 5.1, p=.007$. The model predicted 7.2% of the variance in environmental concerns people had about the oil production. The predicted environmental concern was equal to $3.08 +.35$ (Preservation) $- .16$ (Belief in Government

Regulation). Holding attitudes toward government regulation constant, the effect of this universal preservation worldview on environmental concern was positive such that the average local residents' environmental concern increased by 35 points for every 100 point increase in their orientation to tradition, environmental protection, conformity, and security, $b = .35$, $t = 2.0$, $p < .05$, 95% CI [.01, .69]. Conversely, holding *preservation* constant, the effect people's attitudes toward government regulation had on their environmental concern was negative such that the average local residents' environmental concern decreased by 16 points for every 100 point increase in their belief that government ought to regulate corporate behavior, $b = -.16$, $t = -1.32$, $p = .19$. Therefore, only *preservation* significantly contributed to this model.

Worldviews and Economic Concern

A series of simple linear regressions were conducted to assess the relationship between cultural worldviews as measured with the PSoC measure, the Ghanaian cultural cognition worldview measure, and the preservation worldview measure. None of the analyses yielded a significant result. For example the relationship between belief in government's role in regulating corporations did not produce a significant regression equation, $F(1, 134) = .76$, $p = .39$, with an R^2 of .006. Also, preservation did not significantly predict economic concerns people had about the offshore oil production, $F(1, 133) = .01$, $p = .92$.

Worldviews and Social Concern

First, none of the three sense of community measures (i.e., emotional tone, individual sense of community, and community integration) were found to be significant predictors of social concern associated with Ghana's offshore oil production. The linear regression, using the first sense of community measure (i.e., *general emotional tone*) was not significant, $F(1, 134) = .56, p=.46, R^2=.004$. Similarly, the second and third sense of community factors did not yield significant results. *Individual sense of community* yielded ($F(1,134) = .09, p=.76$, with a negligible variance explained of $R^2=.001$ and *community integration*, $F(1, 134) = .54, p=.46, R^2=.004$. A similar non-significant pattern of results were found for the association between attitudes toward equity and fairness, $F(1, 134) = .03, p=.86, R^2=.0$, attitude toward business autonomy, $F(1, 134) = .04, p=.84, R^2=.0$, and attitude toward government regulation of corporate actions, $F(1, 133) = 1.18, p=.28, R^2=.009$). Also, a simple linear regression between people's position on the four universal preservation values (as measured with the WVS) and their social concern was not significant, $F(1, 134) = .08, p=.78$.

Next, results on how worldviews were associated with the benefits people associated with Ghana's offshore petroleum production are presented.

Worldviews and Perceived Benefits

First, none of the three sense of community measures (i.e., emotional tone, individual sense of community, and community integration) were found to be significant

predictors of the perceived benefits of Ghana's offshore oil production.⁵⁷ Second, two of the GCCWS —attitudes toward equity and fairness⁵⁸ and attitudes toward business autonomy⁵⁹ —did not yield significant associations with perceived benefits. However, people's beliefs about government's role in regulating corporate behavior, a third component of the GCCWS (i.e., belief in government regulation), significantly predicted the extent to which people thought the petroleum production activities would inure to the benefit of their community and Ghana as a whole, $F(1, 134) = 6.55, p=.012$, with an R^2 of .05. Based on the observed belief in government regulations, perceived benefit was predicted to be $5.65 + (-.39)(\text{Belief in Government Regulation})$. The effect of this worldview on perceived benefit was negative such that on average, the public's perceived benefit reduced by close to 40 points for every 100 point increase in their belief that government *should* regulate corporate behavior, $\beta = -.22, b = -.39, t = -2.56, p = .012$, 95% CI[-.69, -.09]. Thus, on average, local residents who shared in the view that government ought to regulate corporate behavior tended to think that little benefits would accrue from the country's offshore oil production.

Third, the four-item cultural preservation worldview dimension was found to marginally predict perceived benefits, $F(1, 133) = 3.72, p=.06, R^2 = .027$. The predicted perceived benefit was equal to $2.28 + .42 (\text{Preservation})$. The effect of these universal

⁵⁷ The linear regression, using the first sense of community measure (i.e., general emotional tone) was not significant, $F(1, 134) = .41, p=.53, R^2=.003$. Similarly, the second and third sense of community factors did not yield significant results. Their respective equations were $F(1, 134) = 1.61, p=.21, R^2=.01$ and $F(1, 134) = 1.03, p=.31, R^2=.008$.

⁵⁸ The linear regression calculated to predict perceived benefit based on people's grid worldviews was not significant, $F(1, 134) = 1.10, p=.30, R^2=.008$.

⁵⁹ Also, our analyses did not find a significant association between attitudes toward business autonomy and perceived benefits, $F(1, 134) = .28, p=.60, R^2=.002$.

values — environmental protection, respect for tradition, conformity, and security — on perceived benefit was positive. Thus, two individuals who have a 100 point difference in their orientation toward respect for tradition, environmental protection, conformity, and security would have about a 42-point difference in their benefits perception, $\beta = .17$, $b = .42$, $t = 1.93$, $p = .06$, 95% CI[-.01, .84]. Between the two people, the individual who has a lower value orientation would perceive the least benefit. Thus, people who ascribe to ideals such as environmental protection, respect for tradition, social conformity, and security are more likely to think the offshore oil production would benefit the Ghanaian society — improve health and economic conditions.

Addressing Research Question 1

As seen in these varied results, the findings regarding Research Question 1 (RQ1) indicate that some cultural worldviews predict public views on the putative risks associated with Ghana's offshore petroleum industry, but other values do not. And, this depends on how risk perceptions are conceptualized. While some cultural worldviews are associated with particular conceptions and measurements of risk, and therefore predict those risk perceptions, other cultural worldviews do not. Thus, people's sense of attachment to their local community and the degree to which they ascribe to a preservation worldview are useful predictors of their views about the extent to which Ghana's offshore petroleum production poses a risk to the natural environment, human health, safety, and prosperity of (a) their local community, and (b) the country as a whole.

When risk perceptions was conceptualized in terms of public concern— environmental, economic, and social, — the study found no associations between cultural worldviews and social and economic concerns associated with the petroleum production activities. However, two value orientations, preservation and support for government regulation of corporate behavior, were both significantly associated with environmental concern. Preservation (i.e., environmental protection, conformity, tradition, and security) was positively associated with environmental concern, while support for government regulation of corporate behavior was inversely related to environmental concern.

Affective Imagery and Risk Perception

In this study, “Tullow Oil” and “Ghana’s offshore petroleum production” were used as stimuli to elicit mental images from the respondents.⁶⁰ The goal here was to ascertain respondents’ cognitive and affective responses to the offshore petroleum production in general, and Tullow Ghana Limited in particular. In all, 232 and 237 images were elicited for “Tullow Oil,” and “Ghana’s offshore oil production” respectively, for a total of 469 images. Each participant provided between 0 and 3 images for each stimuli. Average rating (on a five-point scale) for Tullow Oil’s images was 3.83, and that for Ghana’s offshore oil production was 4.2. Thus, local residents were more likely to rate their images about Ghana’s offshore oil production more favorably than they did for Tullow Oil.

⁶⁰ There were 130 first-image elicitations, 70 second-image elicitations, and 32 image elicitations during the third round of questioning. For “offshore oil production,” 131 images were elicited the first time, followed by 77, and the third elicitation returned 29 images.

Surprisingly, but consistent with general results in this study, the affective ratings of the images for both stimuli (Tullow and Offshore oil production) were either rated “positive” or “very positive.” For example when asked to rate the first three images that came to mind when they thought about Tullow Oil, a few of the respondents (16.9%) rated those images unfavorably (i.e., “very negative” and “negative”), while about three-quarters (75%) rated their mental images favorably. When “Ghana’s offshore oil production” was used as the stimuli to elicit the respondents’ mental images, only 8.7% rated their images negatively. And more than eight out of 10 (85.2%) rated their images positively. This was contrary to our expectation, although post fact, it makes sense that the overall mental images people have about Ghana’s petroleum production activities are predominantly favorable. Details are presented in Table 31.

Table 31

Affective Rating for Mental Images of Tullow Oil and Ghana’s Offshore Petroleum Production

Stimuli/Affective Image	Very Negative	Negative	Neither	Positive	Very Positive	N
Tullow Oil						
Image One	9	5	13	58	45	130
Image Two	6	10	5	22	27	70
Image Three	5	2	3	8	14	32
Total	20	17	21	88	86	232
Offshore Oil Production						
Image One	8	4	6	59	54	131
Image Two	3	2	5	28	39	77
Image Three	3	0	1	9	16	29
Total	14	6	12	96	106	237

Note. The images (1, 2, and 3) constitute the cognitive component of the perceptions and evaluations (very negative to very positive) constitute the affective components of those cognitions. Entries are frequencies for each response category.

The second research question (RQ2) was: To what extent is affect implicated in the cultural cognition process, as demonstrated in response to RQ1? As extant research (e.g., Leiserowitz, 2006; Peters & Slovic, 1996) suggests, affect and imagery are important influences on how the public perceive putatively risky and contentious issues such as climate change and nuclear power. With RQ2, therefore, the researcher wanted to ascertain the overall effect of affective imagery on how local residents in Ghana's coastal district perceive the risks associated with offshore petroleum production and exploration, and whether or not affect would predict risk perceptions beyond cultural value orientations. First, the relationship between affective imagery and risk perception as measured with the ISM,⁶¹ environmental concern, economic concern, social concern, and perceived benefits are examined.

Affective Imagery and General Offshore Oil Risk Perception at Local and National Levels

The industrial strength risk perception measure was regressed on overall affective rating of Tullow Ghana Limited's mental images and offshore oil production, where a high affective rating score means positive affect and lower score means negative affect. The analysis⁶² between the total affective rating of Tullow Oil and general risk perception yielded a significant regression equation, $F(1, 30) = 6.12, p=.019$. The model predicted

⁶¹ The industrial strength risk perception measure contained two questions: "*How much risk does Ghana's offshore petroleum production pose for the environment, human health, safety, or prosperity of this community?*" and "*How much risk does Ghana's offshore petroleum production pose for the environment, human health, safety, or prosperity of this country?*"

⁶² Using offshore oil production's total affective rating however, did not yield a significant result, $(F(1,26) = .11, p=.75)$.

17% of the variance in risk perceptions associated with Ghana's offshore oil production, $\beta = -.41$, $b = -.15$, $t = -2.48$, $p = .019$, 95% CI[-.28, -.08]. The predicted risk perception was equal to $7.22 - .15$ (Tullow Oil Total Affective Rating). The effect of affective rating on risk perception was negative such that for every 100 point dip in how the average local resident rated the images he or she associated with petroleum production offshore West Cape Three Point a 15-point increase in their risk perceptions was observed. To state this differently, a *SD* improvement in an individual's affective rating would be associated with a .4 decrease in risk perception. Thus, people who have positive mental images about Ghana's oil production tended to see the production activities as posing little risk for the environment, human health, safety, and security of their local community and Ghana as a whole. Intuitively, the images that first come to mind when one thinks about an attitude object — in this case Tullow Ghana Limited and offshore oil production — is expected to be the most powerful (Peters & Slovic, 1996). However, a separate regression analysis using the first image rating and did not find a significant result, $F(1, 128) = .11$, $p = .74$, $R^2 = .001$. Similar analyses using ratings for image 2 and 3 did not yield significant outcomes.

Affective Imagery and Environmental Concern

A simple linear regression was calculated to predict public environmental concern based on their total affective ratings. A higher environmental concern score meant people were more worried about the potential harmful effect the oil production could have on the environment, including the marine ecosystem. As was the case for general risk perception

and affect, a significant association between the total affective rating of “offshore oil production”⁶³ and environmental concern was found, $F(1, 27) = 7.5, p=.011$. The model predicted 22% of the variance in environmental concern people had about Ghana’s offshore oil production, $\beta=.47, b=.16, t = 2.73, p=.011$. The predicted environmental concern was, therefore, equal to $3.64 + .16$ (Offshore Oil Production Total Affective Rating). The effect of affective rating on risk perception was positive such that as affective ratings appreciate by 100 points, environmental concern would also increase by 16 points. Or, a *SD* increase in affect would be associated with about .5 increase in risk perception. This result is contrary to what one would expect, given the evidence linking positive affect to lower environmental risk perception (e.g., Leiserowitz, 2006; Peters & Slovic, 1996; Slovic, 2000; Slovic et al., 2004). Stated differently, people who feel positively about offshore oil production, rather than being less worried about environmental damage, tended to worry more about environmental harm. Contrary to the expectation that the first images that come to people’s minds when they think about an attitude object is likely to be most affect laden and most powerful (Peters & Slovic, 1996), an item-by-item affective imagery analyses (Leiserowitz, 2006) revealed the contrary. The first and second image ratings, individually, did not significantly predict environmental concern, $F(1, 27) = .79, p=.38, R^2=.006$ and $F(1, 75) = .59, p=.045, R^2 = .008$ respectively. It was the third image rating that rather *individually* significantly predicted environmental concern, $F(1, 27) = 6.13, p=.02, R^2= .19, \beta=.43, b=.31, t=2.48$.

⁶³ The association between people’s total affective rating of “Tullow Ghana Limited” and their environmental concern was near significant, $F(1,30) = 1.91, p=.06$, with variance explained of 11% ($R^2 = .11$), $b=.13, t=1.91$.

Affective Imagery and Economic Concern

The simple linear regression that was used to calculate and predict public environmental concern based on their total affective rating did not find any significant associations. This was true when “Tullow Oil” as well as when “offshore oil production” was used as stimuli, $F(1, 30) = .66, p=.42, R^2=.02$ and $F(1, 27) = .24, p=.63, R^2=.009$ respectively.

Affective Imagery and Social Concern

A simple linear regression was also calculated to predict public social concerns (i.e., diseases, conflicts, and violence) based on local residents’ total affective ratings. A higher social concern score meant people were more worried about the potential social and human effects that could accrue from the offshore oil production activities. As was the case for economic concern and affect, the study found no significant association between the total affective rating for “offshore oil production” and social concern, $F(1, 27) = 2.68, p=.11, R^2= .09$. Neither did it find a significant association between the total affective ratings for “Tullow Oil” and social concern, $F(1, 27) = .65, p=.69, R^2= .005$.

An item-by-item affective image analysis for images 1, 2, and 3 however found a significant relationship between how people rated their first “offshore oil production” and their social risk perception, as measured with “social concern,” $F(1, 129) = 7.16, p=.008$. The model predicted 5.3% of the variance in social concern, $\beta = -.23, b = -.95, t = -2.68, p = .008, 95\%[-1.65, -.25]$. The predicted social concern was, therefore, equal to $10.01 + -.95$ (Affective Rating of Offshore Oil Production’s First Imagery). The effect of affective

rating of the first image on social concern was negative such that as two individuals who had a 100 point difference in their affective rating would have a 95 point difference in their social concern. The person who rated the image more positively (i.e., higher affective rating) would be less concerned about the social consequences that could accrue from the offshore oil production.

A regression analysis based on the affective rating for image 2 did not post a significant result, $F(1, 75) = 1.27, p=.26, R^2=.017$. However, analysis for the third “offshore oil production image⁶⁴” posted a significant and more powerful model, $F(1, 75) = 4.61, p=.041$. And the model explained about 15% ($R^2=.15$) of the variance in social concern, $\beta= .38, b= .34, t = 2.15, p= .041, 95\% [.02, .66]$. Based on people’s affective rating of the third image they associated with Ghana’s offshore oil production, the predicted social concern was, therefore, equal to $4.51 +.34$ (Affective Rating of Offshore Oil Production’s Third Imagery). The effect that affective rating of the third mental imagery had on social concern was positive. Two individuals who had a 100-point difference in their affective rating would have a 34-point difference in their social concern. The person who rated the image more positively (i.e., higher affective rating) would be more concerned about the social consequences that could accrue from the offshore oil production. Thus, while the first affective rating was inversely related how concerned local residents were that offshore oil production could lead to social problems, the third affective rating was positively related to social concern. This suggests that beyond a certain point, as people reflect on the offshore oil production irrespective of how one feels – good or bad – social concern would be negative.

⁶⁴ None of the three images elicited via the “Tullow Oil” imagery (i.e., what is the first image that comes to mind when you think about Tullow Oil”) posted a significant regression equation.

In summary, the research produced two contradictory findings were made regarding how affect relates to the social risk people associate with Ghana's offshore oil activities. One, the affective imagery of the first cognitive image people have about Ghana's offshore oil production was negatively associated with whether or not they felt the oil production could have some negative social implications. This result is more consistent with what pertains in the literature on affect and risk perceptions (e.g., Leiserowitz, 2006; Peters & Slovic, 1996). Two, the affective rating of the third cognitive image was positively related to the social risks people associate with offshore oil production, which meant people who felt good tended to perceive higher social risks.

Affective Imagery and Perceived Benefits

To assess how affective imagery relates to the benefits people associated with Ghana's offshore oil production, another linear regression was calculated. And there was no significant relationship between affective evaluations of "Ghana's offshore oil production" and perceived benefit, $F(1, 27) = .01, p=.91, R^2= .0$. The association between affective evaluations of "Tullow Oil" and perceived benefit was however approaching significance, $F(1, 30) = 3.84, p=.059$, and the model explained 11% of the variance in perceived benefit associated with oil production activities ($R^2= .114, \beta=.34, b=.19, t=.1.96$). The researcher again conducted separate regression models for images 1, 2, and 3. The model for affective imagery 3 was not significant, $F(1, 30) = 1.74, p=.20, R^2=.06$. The model for image 1 and 2 were both significant, but consistent with earlier findings reported in this chapter, the former predicted perceived benefit slightly better, $F(1, 128) =$

7.69, $p=.006$, $R^2=.06$, $\beta= .23$, $b=.38$, $t=2.77$, than the model for the latter, $F(1, 68) = 5.0$, $p=.029$, $R^2=.07$, $\beta= .26$, $b=.38$, $t=2.24$.

For the model containing image 2, the predicted perceived benefit was equal to $3.05 + .38$ (Affective Rating of Offshore Oil Production's Second Imagery). The effect *affective imagery* had on *perceived benefit* was positive such that two individuals who had a 100-point difference in their affective rating would have a 38-point difference in their perceived benefit. And the individual who rated the image more positively (i.e., higher affect) would perceive the offshore oil production as more beneficial. For the model containing image 1, the predicted perceived benefit was equal to $3.48 + .38$ (Affective Rating of Offshore Oil Production's First Imagery). Similarly, it was found that the effect of affective imagery on perceived benefit was positive such that two individuals who had a 100-point difference in their affective rating would have a 38-point difference in their perceived benefit. And the individual who rated the image more positively (i.e., higher affect) would perceive the offshore oil production as more beneficial.

Affective Imagery, Worldviews, and Risks Perception

A key assumption in the Cultural Theory as well as its recent Cultural Cognition variant is the view that a worldview is an affective (and cognitive) orienting disposition (Kahan et al., 2009; Peters & Slovic, 1996; Slovic et al., 2004). As shown in the preceding analyses, worldviews and affect both predicted risk perceptions, but how well do they together predict risk perceptions?

Worldview, Affect, and General Risk Perception

Addressing this question required two things: First, the study examined how well worldview factors and affect worked *together* to explain the variance in risk perceptions. Second, it examined whether or not affect and worldviews *uniquely* predict risk perceptions. A series of multiple regressions using industrial strength risk perception measure as the outcome variable and four predictors were conducted. The predictors used were general emotional tone about community, individual sense of community attachment, and universal preservation (as worldview predictors) and total affective rating of Tullow Oil and Offshore oil production (as affect predictors). The goal here was to determine if affect predicted risk perceptions above and beyond worldviews. All variables were coded on a seven-point scale, where 1 represented the lowest score and 7 represented the highest score. The analysis was run in two different ways, first using only individuals who provided all six mental images about Tullow oil *and* Ghana's offshore oil production. For the second analysis, the entire sample was used — a mix of those who provided only one, two, three, four, five, or six images.

To assess how well affect and worldviews explained the variance in residents' risk perceptions, all four (two worldview and two affect) variables were simultaneously entered. Using a sample of individuals who provided all six affective images, the model was found to be significant, $F(4, 12) = 4.03, p = .027, R^2 = .57$. Thus, the entire model explained 57% of the variance in risk perceptions about Ghana's offshore oil production. All factors, except emotional tone, significantly contributed to the model, $p = .06$. The predicted risk perception was equal to $6.48 - .50$ (Emotional tone of expression about community) + $.32$ (Individual sense of community) + $.17$ (Total Affective Rating of

offshore oil) – .14 (Total affective rating of Tullow Oil). Thus, holding all factors constant, a 100-point improvement in the average person's emotional expression about his or her community would lead to a 50 point decrease in risk perceptions, perhaps an indication of optimism bias (see, for e.g., Helweg-Larsen & Shepperd, 2001) and/or identity protective cognition (Kahan et al., 2008). Individual sense of community and people's affective rating of the images they associate with Ghana's offshore petroleum production, however, had a positive effect on risk perceptions. Controlling for the effect of all other variables, a 100-point increase in these respective variables would lead to a 32-point and 17-point increase in risk perceptions. Conversely, two individuals who have a 100-point difference in their affective evaluation of the images they associate with Tullow Oil would have a 14-point difference in their risk perceptions. Of these two individuals, the one who has the least positive ratings would have the higher risk perception.

The same analyses were conducted using the entire sample. Although the model was significant, it explained less variance in individuals' risk perceptions, $F(4, 129) = 5.103, p = .027, R^2 = .14$. Neither of the two affect variables significantly contributed to the model $p > .05$, and the coefficients approximated zero. The fact that the analysis involving only those individuals who provided the maximum number of images and those who did not provide all six images yielded significant outcomes suggests that both the *number* and affective *rating* of images residents have (or at least provided) are important predictors of their risk perceptions.

For the second component of RQ2, which is whether or not affect *uniquely* predicted risk perceptions above and beyond worldviews, a series of hierarchical multiple regressions were conducted. The results are summarized in Table 32.

Model 1 found that together, three worldviews (general feeling about one's local community, sense of attachment, and cultural preservation) were not significant predictors of residents' perception about the risks Ghana's offshore petroleum production poses for the environment, human health, safety, and prosperity, $F(3, 13) = 2.29, p = .13, R^2 = .35$. Moreover, none of the three worldviews significantly predicted risk perceptions ($p > .05$). An examination of the collinearity diagnostics suggested that the non-significance of worldviews was not due to excessive multicollinearity. However, given the general results pattern and relatively high variance explained (35%), it is plausible that the small sample size might have contributed to the non-significant outcome.

Model 2 found that worldviews and affect together significantly predicted risk perceptions associated with offshore oil production in Ghana, $F(5, 11) = 3.11, p = .05, R^2 = .59$. Thus, the overall worldview-affect model explained about 59% of the variance in risk perception. With the exception of universal preservation orientation ($p = .59$) and general emotional tone, which was marginally significant ($p = .058$), all other worldviews as well as the two affect variables significantly added to the model.

In deference to parsimony, however, universal preservation was dropped from the model and the analysis was repeated. And this improved strength of evidence for Model 1, $F(2, 14) = 3.49, p = .06, R^2 = .33$. and the overall model, $F(4, 12) = 4.03, p = .03, R^2 = .57$,

which implies that these worldview measure and affect explained 57% of the variance in risk perceptions.

Table 32

Multiple Regression of Sense of Community, Affect, and Risk Perception

Predictor	Model 1 (Community Worldview)	Model 2 (Full Model)
Emotional tone about community	-.35	-.41
Individual sense of community	.45	.48*
Total offshore oil affect		.50*
Total Tullow Oil affect		-.53*
<i>F</i>	3.49	4.03*
<i>R</i>	.58	.76
<i>R</i> ²	.33	.57
ΔR^2		.24
ΔF		.11

Note. Dependent variable: Industrial strength risk perception, coded 1 (low risk) to 7 (high risk). Entries for variables are standardized regression coefficients. *Significant at .05. For Model 1, $p=.059$. For Model 2, $p=.027$

To address the question about whether affect would significantly predict risk perceptions over and above worldviews, an incremental partitioning method (see Pedhazur, 1997) was used to examine the significance of the change in variance explained due to adding affect to the model. In other words, the study assessed how much affect contributed to the model after controlling the effect of community orientation on risk perception. Community orientation contributed 33% to the overall model. Affect *uniquely* contributed a variance explained of 24% (see Table 32). That is, over and above individual sense of community and tone individuals used to express themselves about their local community, affect accounted for about a quarter of the variance of risk perception. Despite this relatively high unique variance explained, and the fact that affect had slightly higher coefficients than worldviews, its unique variance explained was not

found to be statistically significant, $\Delta R^2 = .24, p = .068$. A look at the coefficients⁶⁵ suggests the plausibility of an indirect effect — affect mediating the effect of worldview on risk perception. When affect variables were entered into the model first before adding the worldview measures, affect contributed less to the model (unique variance = .17%) while worldview measures contributed more to the model (41%). The fact that residualizing community orientation increased affect's contribution to the model further points to the plausibility of a mediation effect. In the second instance as well, the model was significant, $F(4, 12) = 4.03, p = .03, R^2 = .57$. Thus, it is likely that worldviews are having *both* direct and indirect effects on the outcome variable, but considering the relatively small sample size, it does not lend itself to further path analysis.

Pro-Government Regulation Worldview, Affect, and Environmental Concern

The study also examined the relationship between: (a) affective ratings of Tullow Oil's corporate images and Ghana's offshore oil production; (b) public attitudes toward government's normative role of regulating corporate behaviors, which is an individualism-communitarianism or group worldview; and (c) environmental concerns as the outcome variable. Similar to the analysis for sense of community and affect in the preceding section, a series of multiple regressions⁶⁶ were conducted.

⁶⁵ Since variance partitioning relies on R^2 , which is itself sample size dependent, variance partitioning is not without its flaws (see Pedhazur, 1997).

⁶⁶ The goal here was to determine how well the predictors performed together and to determine whether or not affect predicted risk perceptions above and beyond worldviews. All variables were coded on a seven-point scale, where 1 represented the lowest score and 7 represented the highest score.

To assess how well affect and cultural worldview based on the “government regulation” dimension explained the variance in residents’ environmental concern, the researcher simultaneously entered all three variables in a regression analysis. A sample of individuals who provided all six affective images was used, and the model performed better at predicting environmental concern. In other words, a model that contained affect *and* the government regulation worldview variable performed better at explaining environmental concern than each variable did individually, $F(3, 13) = 5.33, p = .013, R^2 = .55$. Thus, the entire model explained 55% of the variance in how concerned the public was about Ghana’s offshore oil production. Affective rating of Tullow Oil and attitude toward government regulation did not significantly contribute to the overall model, posting coefficients of .05 ($p = .32$) and .02 ($p = .84$) respectively. But affective rating of offshore oil production had a significant and positive effect on environmental concern, $b = .17, t = 2.68$ and $p = .02$. This implies persons who (a) do not subscribe to the worldview that government *ought* to regulate corporate actions and behaviors, (b) rate the images they associate with Tullow Oil favorably, and (c) rate the images they associate with Ghana’s offshore oil production positively are more likely to be worried that Ghana’s offshore oil production poses significant environmental risks for the country and their local communities. The predicted environmental concern was $2.75 + .02$ (Attitude toward government regulation) + $.17$ (Total affective rating of offshore oil production) + $.05$ (Total Affective rating of Tullow Oil). Thus, holding other factors constant, if person A has a 100-point offshore oil affective rating and person B has 200-point, he or she is likely to have a 17-point difference in environmental concern with person B having the higher environmental concern score.

The same analyses were ran again using the entire sample. Although the model was significant, it explained less variance in environmental concern, $F(3, 132) = 4.21$, $p = .027$, $R^2 = .09$. All three variables (affect toward Tullow Oil, affect toward offshore oil production, and government regulation worldview) made significant contributions to the model, $p < .05$. However, the small coefficients posted by these variables suggests that the model containing the cases where individuals posted the maximum number of images had greater predictive value⁶⁷.

Again, as was done for sense of community and affect, the study assessed whether or not affect *uniquely* predicted environmental concern above and beyond the government regulation worldview dimension. The results of a series of multiple regressions are presented in Table 33.

Model 1 indicates that the government regulation worldview was not a significant predictor of how concerned residents are about the environmental hazards that could accrue from Ghana's offshore petroleum production, $F(1, 15) = .01$, $p = .92$, $R^2 = .001$, $b = .02$, $\beta = .03$. An examination of the collinearity diagnostics suggested that the non-significance of worldviews was not due to excessive multicollinearity (tolerance = 1.0; VIF = 1.0) (see e.g., Berger, 2012; Mansfield & Helms, 1982; Pedhazur, 1997).

Model 2 found that the government regulation worldview and affect together significantly predicted environmental concern, $F(3, 13) = 5.33$, $p = .013$, $R^2 = .55$. Thus, this overall worldview-affect model explained about 55% of the variance in environmental concern. Total offshore oil production affect significantly contributed to the model ($b =$

⁶⁷ Tullow Oil: $b = .003$, $t = 2.15$, $p = .03$. Offshore oil production: $b = -.003$, $t = -2.07$, $p = .04$. And attitude toward government regulation of corporate behavior: $b = -.27$, $t = -2.40$, $p = .02$.

.17, $\beta = .59$, $t = 2.68$, $p = .02$), but governmental regulation did not ($b = .02$, $\beta = .04$, $t = .21$, $p = .95$). Neither did total affective rating of Tullow Oil ($b = .05$, $\beta = .23$, $t = 1.05$, $p = .32$). This implies holding all other factors constant, a 100-point difference in two individuals' orientation towards the normative ideal that governments ought to regulate corporate actions would lead to about a 17-point difference in environmental concern.

Table 33

Multiple Regression of Attitude Toward Government Regulation Affect, and Environmental Concern

Predictor	Model 1 (Regulation)	Model 2 (Full Model)
Attitude toward regulation	.03	.04
Total offshore oil affect		.59*
Total Tullow affect		.23
<i>F</i>	.01	5.33*
<i>R</i>	.03	.74
<i>R</i> ²	.001	.55
ΔR^2		.50
ΔF		8.0

Note. Dependent variable: Environmental concern, coded 1 (not at all concerned) to 7 (extremely concerned). Entries are standardized regression coefficients. *Significant at .05.

Again, to specifically answer the research question about whether affect would significantly predict environmental concern over and above the individualism-communitarianism measure, an incremental partitioning method (see Pedhazur, 1997) was used to examine the significance of the change in variance explained due to adding affect to the model. Community orientation contributed little ($R^2 = .001$) to the overall model, and affect *uniquely* contributed to 55% of the variance explained of in environmental concern, $p = .002$. That is, over and above the public's group (as opposed to grid) orientation, affect accounted for more than half of their environmental concern. The

outcome of this analysis also suggests that affect may have fully mediated the effect and individuals' group orientation has on their environmental concern.

Cultural Preservation Worldview, Affect, and Environmental Concern

The researcher also examined the relationship between affective ratings of Tullow Oil's corporate images and Ghana's offshore oil production, public views on the cultural preservation worldview⁶⁸ (i.e., a grid) measure as predictors, and environmental concern as the criterion.

To examine how well affect and cultural worldview on the "preservation" dimension explained the variance in residents' environmental concern, all three variables were simultaneously entered in a regression analysis. The overall model containing affect *and* the preservation cultural orientation was found to be better at explaining environmental concern than each variable did individually, $F(3, 13) = 5.51, p = .012, R^2 = .56$. Thus, the entire model explained 56% of the variance in how concerned the public was about Ghana's offshore oil production. As was the case for the model containing attitude toward government regulation, cultural preservation did not significantly predict environmental concern ($\beta = .11, b = .11, p = .61$). Neither did affective rating of Tullow Oil ($\beta = .28, b = .08, p = .25$). However, affective rating of offshore oil production had a significant and positive effect on environmental concern, $b = .16, \beta = .55, t = 2.36, \text{ and } p = .04$. Therefore, persons who (a) ascribed to the worldview that supports respect for authority, environmental protection, conformity, and security, (b)

⁶⁸ This value dimension contains these four items: respect for tradition, environmental protection, conformity, and security.. The items were adapted from Schwartz' (1992, 1994) world values study.

rated the images they associate with Tullow Oil favorably, and (c) rated the images they associated with Ghana's offshore oil production positively were more likely to be concerned that Ghana's offshore oil production could result in environmental harm.

The predicted environmental concern was $2.21 + .11$ (Cultural preservation) $+ .16$ (Total affective rating of offshore oil production) $+ .06$ (Total Affective rating of Tullow Oil). Thus, holding other factors constant, if person A has a 100-point offshore oil affective rating and person B has 200-point, they are likely to have a 16-point difference in their environmental concern, with person B having the higher environmental concern score.

Besides examining how well affect and preservation work together to predict environmental concern, the researcher assessed whether or not the latter *uniquely* predicted environmental concern above and beyond the effect of the former. The results are presented in Table 34. *Model 1* indicates that the cultural preservation worldview measure alone was not a significant predictor of how concerned residents are about the environmental hazards that could result from Ghana's offshore petroleum production, $F(1, 15) = .23, p = .64, R^2 = .02, b = .12, \beta = .12$. An examination of the collinearity diagnostics suggested that the non-significance of worldviews was not due to excessive multicollinearity (tolerance=1.0; VIF=1.0) (see e.g., Berger, 2012; Mansfield & Helms, 1982; Pedhazur, 1997).

Model 2 found that the cultural preservation worldview measure and affect together significantly predicted environmental concern, $F(3, 13) = 5.13, p = .012, R^2 = .56$. Thus, the overall worldview-affect model explained about 56% of the variance in

environmental concern. Only affective rating of “offshore oil production” significantly added to the model ($b = .16$, $\beta = .54$, $t = 2.36$, $p = .04$). Therefore, controlling for the effect of cultural preservation on environmental concern, a 100-point difference in two affect toward the offshore oil production would result in a corresponding 16-point difference in environmental concern. Stated differently, a *SD* increase in affect would lead to a .54 increase in environmental concern.

Table 34

Multiple Regression of Preservation Cultural Worldview, Affect, and Environmental Concern

Predictor	Model 1 (Preservation)	Model 2 (Full Model)
Intercept	4.97*	2.21
Cultural preservation (WVS)	.12	.11
Total offshore oil affect		.55*
Total Tullow affect		.28
<i>F</i>	.23	5.51*
<i>R</i>	.12	.75
<i>R</i> ²	.02	.56
ΔR^2		.54
ΔF		8.0

Note. Dependent variable: Environmental concern, coded 1 (not at all concerned) to 7 (extremely concerned). Entries are standardized regression coefficients. *Significant at .05.

The incremental partitioning approach (see Pedhazur, 1997) was used to address the question of whether affect would significantly predict environmental concern over and above the cultural preservation worldview measure. This approach helped examine the significance of the change in variance explained due to adding affect to the model. The preservation measure contributed little ($R^2 = .015$) to the overall model, and affect *uniquely* contributed to 54% of the variance explained of in environmental concern, p

=.01. That is, over and above the public's cultural preservation orientation (a form of a grid cultural worldview), affect accounted for a little over half of the variance in their observed environmental concern.

Addressing Research Question 2

RQ2 asked: What role does affect play in the cultural cognition process? Extant research conducted elsewhere suggests that the cultural cognition phenomenon is cognitive, affective, or both (e.g., Peters & Slovic, 1996; Kahan et al., 2007). This implies that the effect of cultural worldviews (and worldviews in general) on the perceptions people hold about putatively risky and contentious issues are filtered through a mix of experiential and cognitive processes. Thus, no specific hypothesis was posed in this study, because the researcher's search did not find any similar research within an African context. However, affect was expected to significantly influence the extent to which cultural worldviews are associated with the way residents of Half Assini, a town that adjoins Ghana's offshore petroleum region, perceive the risks associated with the oil production activities. Using three different measures of worldview—sense of community, attitude toward government regulation of corporations, and preservation — the study found enough evidence indicating that (a) worldviews *and* affect are jointly associated with environmental health risk perceptions, (b) affect enormously increases the ability of all the models to predict risk perceptions, and (c) holding worldviews constant affect uniquely explains public risk perceptions in a manner that suggests the plausibility of a direct and/or indirect influence.

Perceived Corporate Sustainability/Corporate Reputation and Risk Perception

Despite the obvious limitations of the source-receiver model of communication, within the Social Amplification of Risk Framework (SARF), it offers some basic useful insights. As Kasperson et al. (1988) observed, people do not perceive information sources (or actors) and signals (i.e., messages) as independent entities. Rather they often “draw *inferences* about the relationship between” (p. 180). In view of this, among other reasons, the fifth research question (RQ5) posed in this research project was: Does perceived corporate sustainability attenuate or amplify public risk perceptions? The goal here was to ascertain whether people draw inferences about the risks posed by offshore oil production based on the perceptions they hold about Tullow Oil in particular and the oil exploration companies working offshore West Cape Three Point in general.

To address this question, the researcher first regressed risk perceptions (as measured with ISM) on the two dimensions of perceived corporate sustainability: corporate leadership and stewardship and community-based corporate reputation. The first regression equation based on perceived corporate leadership/stewardship and risk perception was not significant, $F(1, 132) = .04, p = .85$. Thus, no association was found between perceived corporate leadership/stewardship and risk perceptions. The second regression equation which used community-based corporate reputation as the predictor and general risk perception as the outcome was also not significant, $F(1, 132) = .91, p = .34$. The same analyses were repeated using environmental concern as the outcome variable. Again, there were no significant outcomes, $F(1, 134) = 3.28, p = .07$ and $F(1, 134) = 2.15,$

$p=.15$ for corporate leadership/stewardship and community based corporate reputation respectively. Thus, overall, the research found no evidence that perceived corporate sustainability (conceptualized as corporate leadership, environmental stewardship, and community relations) amplified or attenuated local residents' perceptions about Ghana's offshore oil production.

Secondly, environmental concern was regressed on corporate trust⁶⁹ —the extent to which the surveyed public reported that they trust Tullow Oil and viewed it as a “reliable company.” The corporate trust measure was used as a proxy for perceived social responsibility, since ‘reliability’ is central to CSR perception and corporate reputation in general (Berens, & van Riel, 2004; Walsh & Beatty, 2007). The analysis yielded a significant equation, which explained about nine percent of the variance in environmental concern, $F(1, 134) = 13.82, p=.000, b = -.02, \beta = -.31, t = -3.72, R^2=.09$. The predicted environmental concern based on this model was equal to $6.08 - .02$ (Corporate Trust). Thus, the effect trust in Tullow Oil had on environmental concern was negative such that local residents' average risk perceptions reduced by .31 standard deviations for every one standard deviation increase in corporate trust. These results imply that as people expressed more faith in Tullow Oil, they tended to think the risks associated with offshore oil production were lower. They became more inclined to think that the petroleum exploration and production in that region posed relatively little risk for the environment, human health, safety, and prosperity of the community in particular and Ghana as a

⁶⁹ Items were “I trust this company,” “I have great confidence in this company,” “This company has high integrity,” “I can depend on this company to do the right thing,” and “This company can be relied upon.”

whole. A similar analysis using the general (ISM) risk perception measure as the outcome variable was however not significant, $F(1,132) = .70, p=.40, R^2=.005$.

Third, a multiple regression analysis was conducted using the two perceived corporate sustainability measures and the corporate trust measure. Before the multiple regression, a correlation analysis was run, which demonstrated that all the items are significantly correlated (see Table 35). The overall regression model was significant, explaining about 10 percent of the variance in environmental concern, $F(1, 134) = 5.01, p=.003, R^2=.10$. However, only corporate trust significantly contributed to the model ($p=.001, b = -.03, \beta = -.41, t = -3.26$). Therefore, for parsimony the original model containing only corporate trust ($R^2=.09$) was retained.

Table 35

Correlation Matrix of Corporate Sustainability and Corporate Trust Measures

Measure	1	2	3
Corporate Trust	--	.72**	.42**
Perceived corporate stewardship and leadership		--	.34**
Perceived Community-Based Corporate Reputation			--

Note. **Correlation is significant at the 0.01 level (2-tailed). $N=136$

Addressing Research Question 5

Therefore, to address RQ5, the perceived corporate sustainability measure adapted and tested as part of this project was not found to attenuate or amplify risk perceptions/environmental concern. But the extent to which individuals think Tullow Oil is a “reliable” company was found to amplify (and attenuate) environmental concern but

not general risk perceptions. Corporate trust was inversely related to environmental concern.

The next chapter presents results on risk information networks and the role they play communicating environmental health risks to and among residents in the study area. This is in response to RQ4, which asks: What are the *formal* and *informal* modes of risk attenuation and amplification? The information networks that were of interest to this study include mass media, civil society groups, fishermen/fishermen association, and friendship ties.

CHAPTER V

RISK INFORMATION, COMMUNICATION, ATTENUATION, AND AMPLIFICATION STATIONS

Information systems—both formal and informal—are central to public perception, or more ideal understanding, of environmental health risks. Such systems or information networks have the potential to amplify or attenuate risk perceptions (Kasperson et al., 1988; Renn, 1991). In their paper that laid the basic building blocks for the Social Amplification of Risk Framework (SARF), Roger Kasperson and his colleagues (1988) wrote:

Like a stereo receiver, ... information systems may amplify risk [issues] ... by *intensifying* or *weakening* signals that are part of the information that individuals and social groups receive about ... risks. [Information systems may also amplify such issues] by filtering the multitude of signals with respect to the *attributes* of the risk and their *importance* (p. 181, emphasis added).

This chapter therefore presents results on which risk-related information networks provide residents with the most information about Ghana's offshore oil production. The chapter also includes results on how these information networks, especially NGOs and news media are framing the corporate sustainability issues in the oil industry.

The fourth research question (RQ4), thus asked, “What are the informal and formal modes of risk information flow, and by extension attenuation and amplification?” ‘Mode of risk information flow’ refers to amplification stations—institutionalized and non-institutionalized, local and national, expert and non-expert, formal and informal. These amplification stations, irrespective of what shape and form they have, by virtue of their function are mediated by default. Thus, risk information modes include what Renn

(1991) refers to as secondary sources of risk communication and transmitters of risk-related information (or to move away from the classical transmission model of communication, risk-related information brokers. In SARF's terminology, secondary sources of risk communication include "scientific institutions, management agencies, [industry], and interest groups" (p. 314). The concept of secondary sources of risk communication is juxtaposed to primary sources such as nature and technology, which are sources of hazardous events or occurrences. In this study, therefore, primary sources of risk communication include the oil exploration itself, pollution, oil spill, industrial accidents, etc.

Formal and Informal Risk-related Information Stations

Research Question 4 was concerned about various media forms used/not used in communicating the environmental health risks associated with Ghana's offshore oil production. It was found that, generally, local residents relied on a mix of formal and informal sources of risk information. The formal sources included traditional and new media (i.e., radio, television, newspapers, and Internet), government and regulatory actors (i.e., central government, Environmental Protection Agency, and the regional minister), political actors at the local level (i.e., district assembly and members of parliament), Tullow Ghana Limited, and civil society. Risk information stations included family and friends, religious leaders, fishermen/fishermen's associations, traditional leaders, and town hall meetings. The results are presented in Table 36.

Table 36

Sources of Information About Offshore Oil Exploration Risks

Amplification Station	No	Yes
EPA	87.2	12.8
TV	22.2	77.8
Radio	26.9	73.1
Newspapers	38.1	61.9
Internet	56.3	43.7
NGOs	77.0	23.0
District Assembly	63.7	36.3
Tullow	66.7	33.3
Government	51.1	48.9
Town Hall Meetings	76.9	23.1
Traditional Leaders	62.2	37.8
Assembly Members	63.7	36.3
Religious Leaders	67.4	32.6
Regional Minister	78.4	21.6
Fishermen Association	65.9	34.1
Member of Parliament	76.9	23.1
Family and Friends	24.4	75.6

Note. Entries are percentages of persons who answered “Yes” to these question: Do you get information about the risks of offshore petroleum activities from these sources? $N=136$

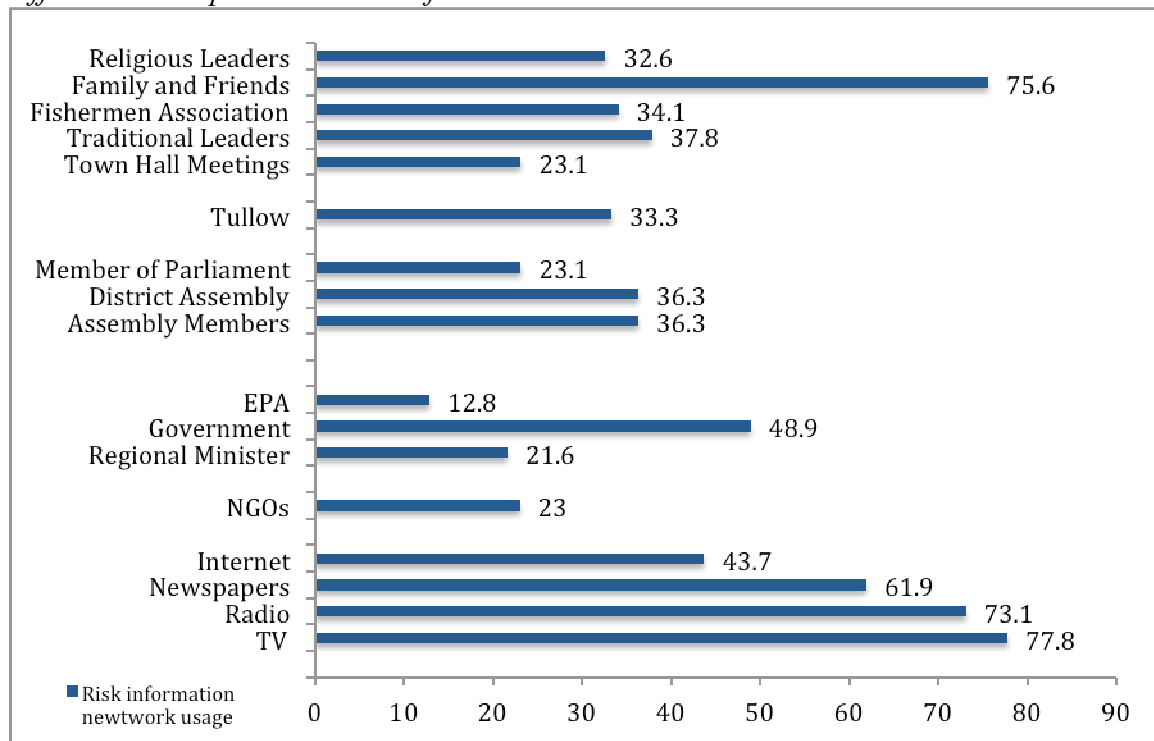
The most frequently cited news media for risk information was television (77.8%), and the least cited was Internet (43.7%). Regarding governmental or regulatory risk communication stations, central government received the most mentions (48.9%) and EPA received the least mentions (12.8%). At the local government level, the district assembly was cited the most (36.3% of the residents) while the member of parliament was the least cited risk information source (23.1%). For the five informal risk information networks on which the local residents surveyed relied, family and friends were the most mentioned source (75.6%), and town hall meetings were the least mentioned (23.1%). About 33.3% of local residents listed Tullow Oil as their risk information station.

On the whole, the three least favored risk information sources were EPA (12.8%), regional minister (21.6%), and NGOs (23%). Conversely, the three most favored ones were television (77.8%), family and friends (75.6%), and radio (73.1%). Figure 6 shows

the percentage of people who reported they receive risk information from the sources on which they were surveyed.

Figure 6

Offshore Oil Exploration Risk Information Stations



Note. Values are percentages of persons who answered “Yes” to these question: Do you get information about the risks of offshore petroleum activities from these sources? *N*=136

Trustworthiness of Risk Information Stations

Extant research on risk communication and risk perception has shown how trust in information sources and actors influences risk perceptions and helps determine the effectiveness of risk communication and/or advocacy initiatives (e.g., Slovic, 1999; Frewer, 2003). Besides, finding out about which amplification stations are regarded to be the most important sources of information on the risks associated with the offshore oil production, a key feature in the SARF is ‘trust.’ Therefore, to fully appreciate the role of

particular risk information flow networks (i.e., amplification stations) in communicating about the environmental health risks of concern in this study, the study also examined the extent to which residents self-rated the 17 information sources discussed above as trustworthy.⁷⁰ The ratings were done on a 7-point Likert-type scale, where one meant respondents did not trust an information source at all, and seven meant they had a great deal of trust for the source.

The data collected was analyzed in two different ways and still came out with the same results. As shown in Table 37, whether we use the mean trustworthiness score or the proportion of responses that were above the scale midpoint (i.e., 5 to 7), the same information sources emerge as the top-five trustworthy sources of information about Ghana's offshore oil production risks: Internet, radio, television, newspapers, and religious leaders. Members of parliament, district assembly, Tullow Oil, regional minister (or EPA for the mean trustworthiness procedure and percentage above the midpoint procedures respectively), and traditional leaders were found to be the least trusted sources of information about ills that could accrue from Ghana's offshore oil activities. Table 37 presents the top-five and bottom-five trusted information sources. In both scenarios, Tullow Oil was in the bottom two.

From these results, with the exception of religious leaders, four out of five of the most trusted risk-related information stations are what is usually considered 'mediated' communication forms. At the bottom of the trust ladder were mainly institutions of governance (including traditional leaders) and industry (i.e., Tullow).

⁷⁰ The exact questions we posed was: How would you rate your level of trust for the following entities to give you the right information about the offshore petroleum production activities?

Table 37

Top Five and Bottom Five Trusted Risk-Related Information Stations

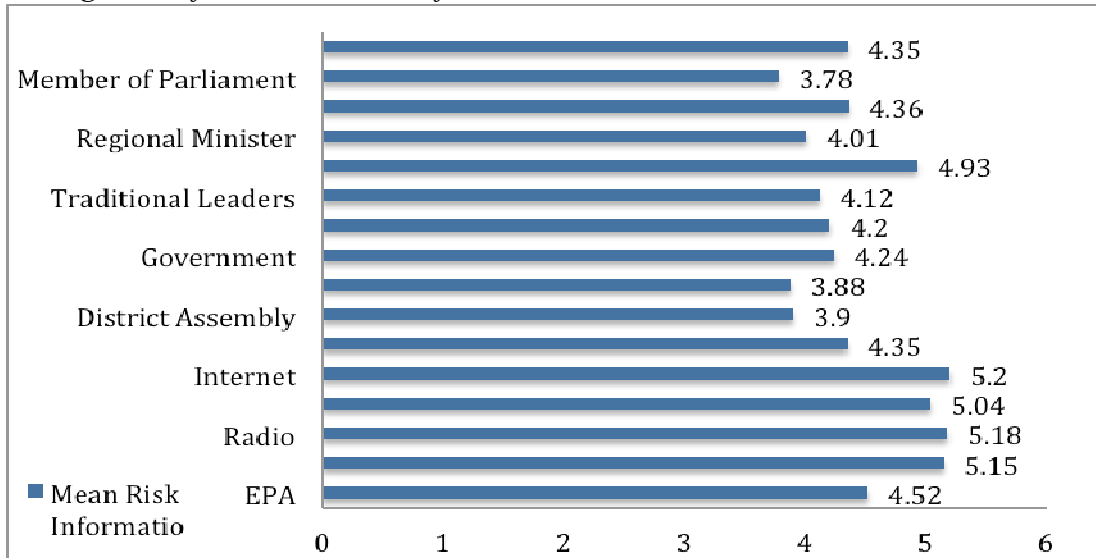
Top-Five Trusted Risk Information Sources				Bottom-Five Trusted Risk Information Sources			
Source	Mean Trust	Source	% Above Scale Midpoint	Source	Mean Trust	Source	% Above Scale Midpoint
Internet	5.20	Radio	72.10	Traditional leaders	4.12	Traditional Leaders	51.50
Radio	5.18	Internet	70.80	Regional minister	4.01	EPA	50.0
TV	5.15	TV	70.0	District Assembly	3.90	Member of Parliament	46.30
Newspaper	5.04	Newspaper	69.10	Tullow	3.88	Tullow	44.10
Religious Leaders	4.93	Religious Leaders	65.40	Member of Parliament	3.78	District Assembly	42.60

Note. $N=136$. “Mean Trust” refers the average trustworthiness of each news sources. “Percentage Above Scale Midpoint” implies the percentage of respondents who rate each information source as above the midpoint of the 7-point Likert scale (i.e., “a great deal of trust,” “a lot of trust,” and “quite a bit of trust”). When both criteria are used to rank the public’s trust that each of the above information stations would provide them with accurate information about Ghana’s offshore oil production, they yielded similar top-five and bottom-five trusted risk-related information modes.

Figures 7 and 8 show all 17 information sources and their perceived trustworthiness. Comparing these results on trust with the earlier report on preferred information sources, it appears that by and large, information sources that are most used are deemed the most trusted. Although this results pattern is not surprising, a number of things stand out. Internet, which was reported by 43.7% of the respondents as a frequent risk-related information source (Figure 7) was found to be either the most trusted or second most trusted source (Figure 8) of accurate information about the societal risks associated with Ghana’s oil production.

Figure 7

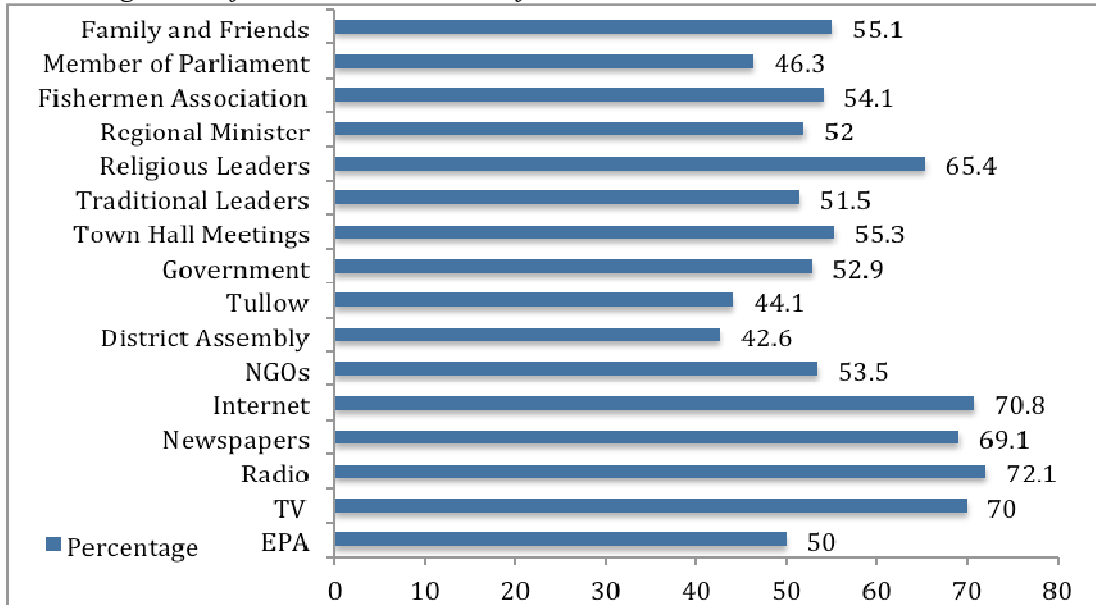
Average Trust for Risk-Related Information Stations



Note. Values are mean for public views on the trustworthiness of the above information stations. Ratings were done a 7 points, where 1 = no trust at all, and 7 = a great deal of trust. The question posed was: How would you rate your level of trust for the following entities to give you the right information about the offshore petroleum production activities. N=136

Figure 8

Percentage Trust for 17-Risk-Related Information Stations



Note. Ratings were done a 7 points, where 1 = No trust at all, and 7 = most trusted. Bars and entries represent the proportion of responses that are above the scale midpoint (i.e., 5 to 7). N=136

And, despite that “family and friendship ties” was not among the most trusted information sources, it was the second most utilized source of information about the risks associated with the offshore oil exploration and production (i.e., 75.6%).

Role of Media in Communicating Offshore Oil Production Risks

Thus, RQ4a (Is local mass media playing any role in in the communicating of risks and benefits associated with the petroleum production activities?) has been partially addressed. As seen from the results presented above, self-reports from residents of Half Assini indicate that news media (particularly television and radio) are regarded as one of the major risk information stations. Fully addressing the question regarding the role of the media would require an examination of news content, and this is accomplished in the next chapter.

The Role of Civil Society in Communicating Offshore Oil Production Risks

RQ4b concerns the role of civil society in risk communication. According to local residents’ self-reports, NGOs were one of their least favored sources of information about the risks Ghana’s offshore oil production poses for individuals, communities, and Ghanaian society as a whole. This implies NGOs are one of the least likely ‘direct’ sources of risk amplification and attenuation. Thus, if most local residents are not receiving their information about environmental health risks associated with oil production from NGOs, it makes sense why residents were least concerned about why whales are dying. And, since NGO’s environmental advocacy and communications are

mainly carried out via the news media (rather than grassroots engagements), even if people get exposed to such communication, they are more likely to cite news media as their risk information source than NGOs.

This finding however, says little about the influence of civil society on public policy in this sphere. The low proportion (12.8%) of people citing NGOs as their source of risk information might be a reflection of the communication strategies employed by civil society organizations. The study's analyses of the communication strategies, tools, practices, media appearances, etc. of Friends of the Nation (FoN) — one of the main non-governmental organizations working to mitigate the social, economic, and environmental impact of the oil exploration activities — supports this assertion.

Like many civil society groups, FoN's strategy is top-heavy, and focuses on engaging political elites and policy makers, ostensibly with the goal to influence policy actions. It identifies its mission as follows:

To serve as a catalyst towards increased action for sustainable natural resource management and healthy environments by providing *services to communities and institutions* through *research, capacity building, networking and advocacy* (FoN, 2015).

From the foregoing, although FoN identifies its mission as providing “services to communities and advocacy groups,” the vehicles for carrying out these services are a good indication of the asymmetry—which favors policy engagement over public engagement—in their approach. Despite that FoN says its approach to sustainable development is guided “by a rights-based, ecosystem-based and participatory” philosophy, its information flow seems asymmetrical, ebbing away from the grassroots,

toward policy elites both national and international. Thus, if its objectives are to “educate and create awareness about natural resources health” and “empower target communities in asserting their basic rights” (FoN, 2015) the route — its strategy (latent, not manifest) — is to knock on the doors of power, policy, and industry elites.

The finding that NGOs were the least favored risk information stations among residents of Half Assini is in tandem with an earlier-reported result that “whales dying” was one of the issues residents were least concerned about. Residents who said they cared less about whales dying in the ocean as a result of offshore oil exploration and production activities pointed out that whales are not edible and therefore they see nothing wrong with whales dying (which is itself a reflection of cultural way of thinking.)⁷¹ In addition to this, the “whales-are-dying-because-of-oil-exploration-activities” trope was primarily being engineered by civil society organizations.⁷² For example, FoN catalogued each of the reported 24 whale deaths in its news releases and news articles. Out of six news releases published on its website between October 10, 2013 and March 31, 2014, five of them dealt with the concern that the increasing number of whales that have died within a short time span could be attributed to Ghana’s offshore oil exploration activities.

The next section presents results on how civil society organizations (using Friends of the Nation as a case) frame the environmental health risks posed by Ghana’s offshore petroleum production activities.

⁷¹ Traditionally, the washing ashore of whale is seen as a sign for bumper harvest.

⁷² It is also worth mentioning here that FoN launched a “Save our Whales” campaign and an online petition on change.org in the year 2014. But as of March 15, 2015 (which is a over a year since the petition was launched), only 100 people had signed it. This is perhaps and indication of the lack of public interest in the issue.

CSOs' Framing of Offshore Oil Production Risks

Media and communication researchers have long explained how frames serve as schema for selecting and making sense of social phenomena. Therefore, by examining the “implicit organizing ideas”—frames— (Gamson, 1992, p. 3) in these news releases, it can be determined how FoN, and for that matter CSOs, are helping individuals and collective social actors (especially policy and industry actors) make sense of the socio-ecological impacts of the petroleum production activities.

According to researchers such as Gamson (1992) and Entman (1993), one way to understand frames is to look at what they *do*, their function. Entman identifies four elements of functional frames: they *define* problems, *diagnose* causes, make *moral judgments*, and suggest causal *remedies*. And, in any text, media or otherwise, one can identify frames by examining:

the presence or absence of certain keywords, stock phrases, stereotyped images, sources of information, and sentences that provide thematically reinforcing clusters of facts or judgments (Entman, 1993, p. 52).

Therefore, using a combination of Entman's four-element functional definition of frames and his formula for identifying particular frames, six dominant frames in Friend of the Nation's (FoN) communication texts were identified. (Details about the frame analysis are provided in Chapter III.) The emergent frames are: Rate of Whale Deaths is Unnatural, Role of FoN and other CSOs in Environmental Accountability, Petroleum Revenue Management, Attribution of Blame, Morality, and Causal Remedies/Policy Actions.

Rate of whale deaths is unnatural frame. This frame emphasized the fact that there are increasing numbers of dead whales being washed ashore along Ghana’s coast. Key attributes of this frame are “increasing number of whales,” “the fact that the washing ashore of dead whales is not abating,” and “many of these deaths have taken place in an unprecedented short span of time.” Example, “This is the fifth whale that washed ashore in the same week,” “This is the 17th occurrence [of deaths] since 2009, and the sixth within one month.”

Role of FoN in environmental accountability frame. In this frame, Friends of the Nation talks mainly about its role in ensuring environmental stewardship, accountability, and public awareness of and participation in environmental decisions. Among other things, this frame included justification for why it was documenting every whale death: “The intention [for cataloguing the whale deaths] is to draw the attention of the public to these unfortunate happenings and to advocate for research into the actual cause of death of the marine mammals” (FoN, 2013c). The-role- of-FoN frame also elucidated the NGO’s efforts to ensure that other secondary sources of risk communication (Renn, 1991) such as the EPA, Fisheries Commission, Ministry of Environment, Science, Innovation and Technology, among others, performed their responsibilities of safeguarding the integrity of ecological resources and human life. For example, in its news release commending government for finally setting up a committee to investigate whale deaths, FoN used about a third of its one-page statement to talk about its engagement and interactions with the Committee. It wrote:

Friends of the Nation was able to provide information on the death of marine mammals so far, and outlined possible causes, such as collision with vessels,

pollution of the sea, seismic exploration conducted by petroleum companies, or net entanglement. (FoN, 2014, p. 1).

In another statement, it detailed that: “The socio-environmental NGO Friends of the Nation (FoN) mobilized the community to hold a traditional ritual for the whale.” It also stated in a webpage news story that:

Friends of the Nation has on several occasions raised the issue of the rampant dying of whales with the regulatory agencies such as the Fisheries Commission, Ministry of Environment, Science, Technology and Innovation, Ministry of Energy, the Environmental Protection Agencies. Several letters have been written to these institutions including the Tullow Oil and the Jubilee partners but no official response has been received since October 2012. (FoN, 2013d).

A fourth example of this frame type emphasized the advocacy successes of environmental advocacy NGOs. In a February 12, 2014 news release, FoN used the first paragraph to explicitly state how “extensive campaigns by NGOs in the Western Region” (p. 1) had resulted in the President of the Republic of Ghana setting up a committee to investigate the death of whales. While this frame is important for battling competing voices in the public sphere, one cannot rule out the fundraising or developmental potential and/or intent of this frame. Thus, this frame may be geared toward legitimizing and seeking a stamp of approval from past and potential donors.

Petroleum revenue management frame. This was the only frame that did not focus on an environmental issues. Hinged on the Petroleum Revenue Management Act (2011), The petroleum revenue management frame emphasized: (a) the importance of Petroleum Revenue Management Act (2011); (b) the need to apply petroleum revenues to a long term national development plan; and (c) the importance of additional public

financial management oversight mechanisms such as the Extractive Industries Transparency Initiative (EITI) and a Public Interest Accountability Committee (PIAC). The frame also underscored the need for civil society groups and other individuals to exercise their democratic rights as citizens to “participate in decisions around the management and spending priorities of petroleum revenues” (Communiqué, 2013, p. 1).

Attribution of blame frame. This frame aligns with the second element of Entman’s (1993) functional framing element. This classification is based on keywords, phrases, and sentences that determine a clear thematic pattern that diagnoses or attempts to diagnose the cause of ecological problems such as the surge in the number of dead whales that are washing ashore the Western coast of Ghana. All though none of FoN’s communication text referred to any hard evidence, it attributes the problem to the offshore oil exploration and activities, stating that the whale deaths are, “An indication that something wrong is happening in the marine environment” (FoN, 2013c). Sometimes, this attribution is couched in terms of questions, examples of which are:

Are the deaths of the whales caused by a possible pollution of the water? Or is the water polluted to the extent that small fishes that represent nutrition in the food chain for marine mammals are dying? Are the whales being hit by vessels deep in the sea and die because of the collision? Are the whales disoriented due to noises caused by oil and gas exploitation activities and therefore swim to shallow waters where they die? (FoN, 2013b, p. 1-2).

Other times, the same causal diagnosis is made in the form of direct statements. Therefore, in this frame, FoN interprets and constructs the apparent surge in the number of whales that are dying as: an outcome of sea pollution; seismic activities due to deep sea oil exploration; noise pollution, which might have disoriented the whales causing them to fall in harms way in the process; net entanglements; and sea vessels colliding with the sea

mammals. In all of this, one phenomenon is to blame: offshore petroleum production, led by Tullow and its Jubilee Partners. And the EPA, Fisheries Commission, and other state regulatory agencies are seen as accomplices in the disruption in the natural course of things.

Interestingly, rather than appealing to science-based evidence, FoN tends to attribute these causal diagnoses to local residents. For example, it said, “Citizens in the coastal areas are trying to correlate these unfortunate events to the offshore oil and gas, since the production started around the same period (2009) (FoN, 2013b). In democratic societies, where news media and the public sphere tend to be “battlegrounds where participants vie for advantage” (Kasperson et al., 1988, p. 184), FoN’s attribution of causal diagnosis of whale deaths to local residents can be seen as a strategy to raise the specter of Ghana’s offshore petroleum production, thereby amplifying the issue’s signal value. This strategy entailed galvanizing policy and political interests via creating a perception of high public interest or attributing perceptions/policy attitudes to the general citizenry. Bakir (2006) made a similar point when he observed that civil society organizations use news media — and other forms of public communication — to influence public policy in two different ways. The first is by “shaping public perception of risks” (rather than of policy). The second achieves policy objectives by “shaping policy makers’ perception of public opinion” (Bakir, 2006, p. 67). By attributing the causal diagnosis of whale deaths to local residents, Friends of the Nation appears to be wittingly or unwittingly applying this dual policy agenda setting strategy, with a lot more emphasis on the second strategy.

Another, similar, example of the attribution of blame frame is this:

There is ... increasing public resentment and attributions that whales being washed ashore are caused by interferences of ocean noise and vibrations from sonar and seismic exploration activities and collision with oil and gas infrastructure or even pollution in the marine environment. (FoN, 2013d, p. 1, emphasis added).

Although none of FoN's communication texts analyzed explicitly mentioned the precautionary principle, given that FoN hardly provided any bases for its claim that the petroleum production may be responsible for the whale death, it appears all it was relying on was the precautionary principle (see e.g., Bakir, 2006, p. 83). As Bakir explains, "The precautionary principle gives the benefit of scientific doubt to planetary welfare rather than to potentially hazardous human activities" (p. 83).

In one instance, however, FoN appealed to the authority of EPA to attain some form of validation for its claim that the offshore oil activities are responsible for the increasing whale deaths along the Ghanaian coast. FoN used a quote from an EPA team leader (also a professor of aquatic science), who after a visit to collect samples from a dead whale that had been washed ashore stated that, "The whale could have been hit by a vessel because its vertebrae were broken and it was also suffering from internal bleeding" (FoN, 2013a).

Morality frame. This frame ranged from regulators and institutions' lack of responsiveness and stewardship, moral imperatives that must be absolutely upheld, and negative human consequences of the whale deaths. First, the lack of responsiveness sub-frame included statements such as "officials [from EPA] come and bury the [dead] whales without explaining or even searching for [the] cause of death" (FoN, 2013b, p. 1), which problematizes the EPA's lack of accountability. This also included the view that the

practice where the EPA and Fisheries Commission dismiss the “possibility of potential impact of offshore petroleum activities on the washing ashore of dead whales” was simply unacceptable.

Second, “The coastal and marine environments are unique systems that *must be protected at all times with all the resources that are available*” (FoN, 2013c, p. 1, emphasis added) illustrates the moral imperative sub-frame. An additional statement that exemplifies this frame is this:

The bio-diversity conversation is [...of] utmost importance to ensure balance in the eco-system’s functions and services. The washing ashore of dead mammals should be a major concern not only for coastal communities, but for all of us. When whales die, we have to take it serious and [it] investigate to unravel the mystery of their deaths. (FoN, 2013b, p. 2).

Third, the surge in the number of dead whales washed ashore was framed as a moral issue that has health, economic, social, and psychological consequences for local communities. This frame draws a direct link between an environmental challenge (i.e., a surge in the number whales that have died within a short time span) and a human one; it affects the health, economic, social, and psychological well-being of local communities. In other words, the fact that whales are dying is viewed as an issue of social justice. This morality sub-frame manifests in this statement:

[Coastal communities] are left helpless to deal with the pungent smell emerging from the dead mammals as well dealing (sic) with the decomposing bodies. Often, they have no other option than to hack them into pieces and bury them onshore. The environmental and health risk associated with this phenomenon is profound. Not only is this event affecting the communities psychologically. They have to live with the anxiety of not knowing what is causing the whales to die raising the question if their fish may be contaminated and therefore threatening their natural livelihood. (FoN, 2013d)

Causal remedies/policy actions frame. This frame basically asserts that there is a dire need for policy makers and institutions to “learn from best practices” and “take steps to protect” the coastal and marine ecosystem (FoN, 2013c, p. 1). The stakeholders to whom these causal remedies are directed are mainly: Environmental Protection Agency, Fisheries Commission, Wildlife Division of the Forestry Commission, as well as Tullow Oil and its partners. Some of these policy recommendations include the need to take the following actions: organize “thorough investigations” into why the whales were dying and make all findings public, revise oil and gas operation guidelines, and require that all offshore seismic explorations include at least a preliminary environmental assessment. Other policy suggestions include: the need to urgently enforce Section 93 of the Fisheries Act, 625 (2002); get all oil companies to conduct fisheries impact assessments (as legally required); and make public whatever findings are reached regarding the whale deaths. As can be seen from the afore-mentioned examples, FoN often framed and justified its policy recommendations in terms of *law*, scientific *certainty* (which would be attained through “thorough investigation”), and the democratic principle of the public’s *right to know*.

‘Stigma’ in CSO’s Communication Texts

The Social Amplification of Risk Framework as proposed by Kasperson et al. (1988) identifies information volume, the extent to which information is disputed, dramatization, and symbolic connotations as four attributes of information that may influence the Social Amplification of Risk. In answering RQ4b (i.e., the role of CSOs in

communicating the risks associated with petroleum production activities), stigmatization and dramatization strategies employed by FoN were also examined. In the language of the Social Amplification of Risk Framework, stigmatization refers to “adverse perceptions of an activity, person, place, or technology resulting in avoidance or other negative behaviors” (Bakir, 2006, p. 70). In Mary Douglas’ (2003) work, stigma is analogous to “danger” (as an opposition to purity). That is, what is being problematized and in what way. In the current study, stigma as seen in Friends of the Nation’s communication texts refer to words, metaphors, adjectives, etc., that are used to characterize the negative effects as well as people’s reaction to and perception of Ghana’s offshore oil production.

The researcher found elements of stigma such as “unfortunate events,” used to describe the washing ashore of marine mammals; “shock among locals,” referring to the effect of whale deaths on residents of coastal communities; and rising fears and uncertainty among fishermen and local residents. Other phrases include increased fears about the inadequacy of response to any accidental pollution event, increasing public resentment, public confusion, discomfort, pungent smell (referring to the sea mammal carcasses), and anxiety. The offshore oil production activities were stigmatized at two levels: issue level (focusing on environmental health risks) and the public level (focusing on the *nature* of public reactions and concerns). Interestingly, it was the latter type of stigma that featured more prominently in FoN’s communication texts.

This study’s analysis of Friends of the Nation’s risk communication and policy advocacy practices offers valuable insights into *how* civil society organizations in general and Friends of the Nation in particular at least attempt to amplify public risk perceptions and influence policy and regulatory outcomes.

The next chapter addresses research Question 3: What and how is Tullow Oil communicating about its corporate sustainability efforts and actions?

CHAPTER VI

CORPORATE SUSTAINABILITY COMMUNICATION

“Society exists not only by transmission, by communication, but it may fairly be said to exist in transmission, in communication” — Dewey, 1916

This chapter is devoted to results on how Tullow Oil is talking about environmental health risks, its responsibility and actions, corporate sustainability, and its stakeholders, as beneficiaries and/or partners. As explained in Chapter Two, communication scholars, sociolinguists, organizational theorists, and philosophers have long recognized the important role language and communication plays in shaping society and how it constitutes reality in general (see Carey, 2002; Gramsci, 1971; Foucault, 1972; Craig, 1999; Weick, 1995; Putnam & Nicotera, 2009; McPhee & Zaug, 2009; Fairclough, 1992). In line with this view, Christensen, Morsing, and Thyssen (2013) have argued that CSR talk, whether it is deemed superficial or authentic, has the potential to stimulate improvements in corporate systems, processes, and actions. While the current research does not aim specifically to validate or confound Christensen, Morsing, and Thyssen’s optimistic constitutive model of CSR communication, the study’s results from analyzing⁷³ Tullow’s corporate sustainability (i.e., CSR and risk) communication suggests the plausibility of this claim, but with some caveats. I return to this point in Chapter VII.

This chapter develops in response to RQ3: “What and how is Tullow communicating its corporate sustainability efforts and actions?” As discussed in Chapter III, this research question was addressed by examining the manifest and latent content of

⁷³ CSR reports, press releases, and interviews with corporate executives at Tullow Ghana’s corporate headquarters and the Jomoro District were analyzed.

Tullow's CSR and risk communication texts using an adaptation of Reisigl and Wodak's (2005, 2009) five discourse analysis strategies.

Tullow's Discursive Construction of Corporate Sustainability

In line with Reisigl and Wodak's (2005, 2009) discourse analysis approach discussed in Chapter III, five constitutive questions were posed, which aided the researcher in identifying five corresponding discursive construction strategies Tullow Oil used to talk about its corporate sustainability practices and environmental health risks. These strategies are presented in Table 38. In summary, the discourse analysis examined Tullow's nomination or referential strategies, predication strategies, argumentation strategies, perspectivization, and mitigation/intensification strategies (see Reisigl & Wodak, 2009; Norman, 2001; Seale et al., 2007). Referential strategies refer to how and which social actors, phenomena, objects, and processes are named in a communication text — in this case CSR communication texts. Predication strategies refer to how the named actors and social phenomena are described; what evaluative attributes are ascribed to them. "These strategies aim either at labeling social actors more or less positively or negatively, deprecatorily or appreciatively" (Reisigl & Wodak, 2005 p. 45). Argumentation strategies justify attributions and predications. Perspectivization answers the question: From whose perspective is the argument being made. According to Reisigl and Wodak (2005), intensification and mitigation strategies qualify or modify the epistemic status of a proposition by sharpening it or toning it down.

Table 38

Analytical Categories Used for Discourse Analysis of Tullow's CSR and Risk Communication

CSR Discourse Analysis Tool	CSR Discursive Strategy	Objective
How are persons, social actors, objects, processes, and issues linguistically referred to?	Nomination or referential strategies	Construct subjects, objects, and phenomena of importance
What characteristics, features, and qualities, are attributed to the persons, objects, processes, etc. nominated?	Predication strategies	Label objects, subjects favorably or unfavorably
Which arguments are employed in talking about corporate sustainability and environmental health risks?	Argumentation strategies	Justify nominations made and labels used for those nominations
From what point of view are these nominations, attributions, and arguments expressed?	Perspectivization strategies	Position Tullow Oil's point of view in relation to other broad perspectives or ideologies
Are the respective utterances intensified or mitigated?	Mitigation and intensification strategies	Modifying the epistemic and/or deontic status of a proposition

Adapted from Reisigl and Wodak (2009) and Seale et al. (2007)

Nomination Strategies Used in Tullow Oil's CSR and Risk Communication

The study's first step in analyzing Tullow Oil's corporate sustainability entailed identifying which labeling and naming strategies were used in their communication texts, mainly news releases and CSR reports. As was expected, the nomination strategies covered a wide array of discursive constructions, including individual and other social actors, objects, issues, and processes. Of what importance are referential strategies to this analysis? At the basic level, ascertaining *what* Tullow is naming and *how* it is naming them in its communication texts reveal which individuals, institutions, objects, issues,

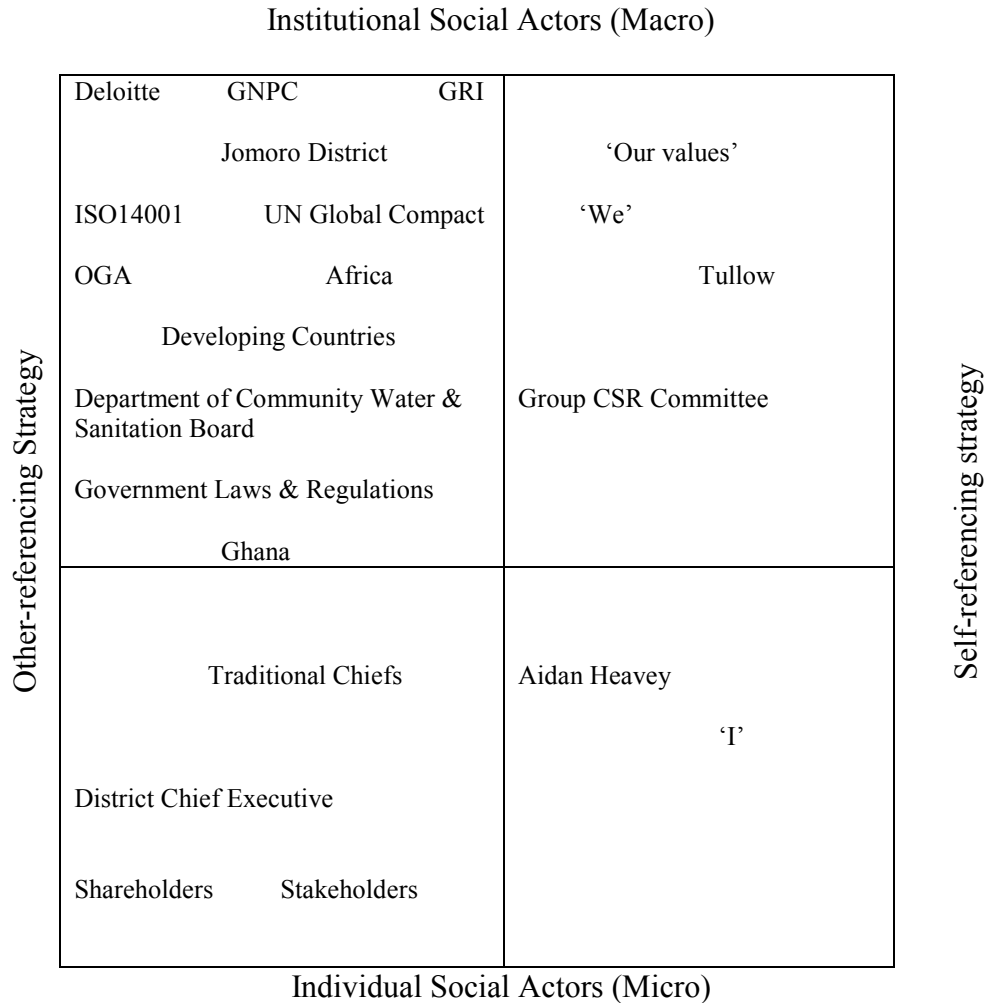
phenomena, and processes are important to Tullow. Besides, as discussed earlier, labels, language, and names do not merely describe the things the reference. They shape them.

Nomination strategies for social actors (i.e., stakeholders). The most important *social actors* that were discursively constructed and represented in Tullow’s CSR and risk communication texts were “we” and “Tullow” (which were both used to refer to Tullow Oil). Others were “charity organizations and non-profits,” “staff, employees, executives,” “Aidan Heavey,” “Department of Community Water and Sanitation,” and “local community.” Other social actors named were “our neighbors,” “stakeholders,” “government, laws and regulations,” “Poor/developing countries,” “Africa,” “people,” “[Tullow] Group CSR Committee,” “Deloitte & Touche,” “traditional chiefs,” “Jomoro District Chief Executive,” “Jomoro District,” “Ghana National Petroleum Corporation (GNPC),” International Association of Oil and Gas Producers (OGP),” “scientists” and “shareholders.” “We” was used to reference Tullow Oil as well as Deloitte & Touche, which provided independent assurance for Tullow’s CSR report.

These strategies used to reference the social actors identified above could be represented using a conceptual map with two dimensions: institutional versus individual on one hand and self-referencing versus other-referencing on the other hand. Although this categorization is basic, it is a useful way of organizing and making sense of what could have otherwise looked like a long list of social actors. See Figure 9.

Figure 9

A Conceptual Map of Named Social Actors in Tullow’s CS Communication



Nomination strategies for social phenomena. The most important social *phenomena* and *objects* that were discursively constructed in the communication text included international regulatory frameworks, standards, and guidelines such as “Global Reporting Initiative (GRI),” “UN Global Compact,” and “ISO 14001.” Other social phenomena and objects identified in Tullow’s corporate sustainability and risk communication were “values,” “human rights,” “environmental

conservation/biodiversity,” “greenhouse gases,” “global warming/climate change,” “safe and clean drinking water,” “secure operations,” “sustainable development,” and “CSR report.” The study also identified “goals/objectives/targets,” “risk,” “oil spill,” “malaria/malaria management,” and “business growth and success.”

(“Goals/objectives/targets” constitute what we refer to as Tullow Oil’s aspirational core labeling or nomination strategy.) Overall, the referential strategies Tullow used to name social phenomena and objects were predominantly self-referencing. Even when other-referencing strategies were employed in Tullow’s CSR communication, they were applied in relation to Tullow Oil as a social actor. This is further examined in the discussions on predication strategies.

Nomination strategies for processes and actions. Regarding nomination strategies for *processes* and *actions*, the study identified “E&P activities,” “Environmental and Social Impact Assessment (ESIA),” “environmental performance/EHS,” “processes/procedures/approach,” “engagement,” “CSR/sustainability strategy,” “technology/technological processes,” and “assurance.” These “process and action” nomination strategies were even more self-referencing in nature than the strategies used to reference social phenomena and objects. In other words, these labels were used to describe corporate processes and actions. Next, the analyses of the various predication (i.e., attribution of characteristics) strategies Tullow Oil used in its corporate sustainability communication are presented.

Predication Strategies Used in Tullow Oil's CSR and Risk Communication

In the second step of the study's CDA, the attributes, features, and descriptors assigned to the named actors, social phenomena, and processes identified in step one were also identified. Thus, for each nomination or referential⁷⁴ strategy identified in Tullow Oil's CSR and risk communication, the researcher also identified the corresponding predications ascribed to them. And this step in the analysis yielded a rich set of data and insights into the corporation's communication text and activities.

By their functional definition, predication strategies label "social actors more or less positively or negatively, deprecatorily or appreciatively" (Reisigl & Wodak, 2005, p. 45). Despite that the current analysis is treating nomination and predication strategies as separate discursive categories — similar to what pertains in the literature — the distinction between the two is not always clear cut. In reading the following analyses, one needs to consider this point. Reisigl and Wodak (2005, p. 45) made a similar assertion:

[I]n a certain sense, some ... referential strategies can be considered to be specific forms of predicational strategies, because the pure referential identification very often already involves a denotatively as well as connotatively more or less deprecatory or appreciative labeling of the social actors.

Next, I examine the predication strategies employed in Tullow's communication, first focusing on how social actors — in the language of the Corporate Sustainability Framework, stakeholders — are represented, framed or discursively constructed.

⁷⁴ Predication strategies as defined by Reisigl and Wodak (2005) refer to the implicit or explicit evaluative attributions of negative and positive traits to named individuals, groups, or social phenomena. "These strategies aim either at labeling social actors more or less positively or negatively, deprecatorily or appreciatively" (p. 45).

Predication strategies used for “we” and “Tullow.” These two strategies were used interchangeably to refer to the same social actor. Generally, four broad themes emerge from the predication strategies used to describe “we” as an actor: commitment to certain principles, success, failure, aspiration, and corporate activity or state of being. The second and third categories pertain to an appraisal and verdict on Tullow’s performance. The last category, which combines elements of the second and third, constructs Tullow as striving to attain some stated ideal or standard of performance.

Commitment to certain principles of corporate behavior. In talking about its corporate sustainability activities and processes, Tullow Oil discursively constructs “we” as an entity that adheres to (or sincerely strives to adhere to) principles such as social responsibility, “the right thing to do,” accountability, external assurance, transparency, community partnerships, engagement, public participation, open dialogue, and consultation. Other predication strategies used to construct “we” as a committed social/corporate actor included adherence to principles such as safe operations, human rights, meeting the challenge of environmental conservation, adhering to credible non-financial reporting guidelines, providing safe and clean drinking water, providing employment for “our neighbors,” and eschewing corruption. For example, in talking about how it partners with local communities, Tullow wrote that, “we” would never displace local communities; “we” works with existing local infrastructure... Where possible, it provides employment for its *neighbors*.” Similarly, Tullow also stated that: “We prioritize our support for the provision of basic needs such as clean water.”⁷⁵ “We” also help improve future prospects children through education initiatives and sets up co-

⁷⁵ All quotes and information presented in tables in Chapter are from Tullow Oil’s CSR reports between 2007 and 2013.

operatives for local residents. With respect to ethics, it claimed that, “Our ethical commitment means we work against corruption, including extortion and bribery.” Tullow also discursively constructed itself as an employer of choice, which is committed to safeguarding the rights of its employees, providing them with “equal opportunities,” treating them in non-discriminatory manner. See Table 39 for a more comprehensive list of predication strategies used to describe Tullow Oil. (All quotes and information presented in tables in Chapter VI are from Tullow Oil’s CSR reports published between 2007 and 2013.)

Table 39

Sample Predication Strategies Used to Construct Tullow as Committed to Certain Principles of Conduct

Actor	Predication Strategies
Tullow Oil	<i>Committed to certain principles of corporate behavior</i>
As “We” and “Tullow”	<p>Would never displace local communities; we work with existing local Infrastructure</p> <p>Want to give objective analysis and assessment of our performance</p> <p>Provide employment for <i>our neighbors</i></p> <p>Prioritize our support for the provision of basic needs such as clean water</p> <p>Prioritize helping to improve future prospects through education initiatives and by setting up co-operatives</p> <p>Work against corruption, including extortion and bribery</p> <p>Committed to meeting the challenge of operating responsibly</p> <p>Committed to meeting the challenge of ensuring secure operations</p> <p>Committed to meeting the challenge of combating the spread of malaria</p> <p>Are working to understand its contribution to climate change at both a local and global level.</p>

Committed to meeting challenge of environmental conservation and biodiversity

Committed to meeting challenge of providing safe and clean water

Have maintained clear focus on core principles of safety, partnership and responsibility

Committed to continuing with external assurance of reporting and improve stakeholder engagement

Committed to creating a working environment where everyone is respected and there is mutual trust

Working with our communities to ensure that human rights are adequately and sensitively managed

Safeguard the rights of our employees through equal opportunity, nondiscriminatory treatment and labour practices

Source: Tullow Oil CSR Report 2007-2013

Successful corporate performance. The second cluster of predicational strategies used to ascribe characteristics to Tullow Oil (as “we” and “Tullow”) concerned its successful performance. Analogous to the “commitment to certain standards of behavior” predicational strategy, the “successful corporate performance” strategy comprised ethics, community engagement and participation, community development, environmental health and safety, and profitability/competitiveness. This implies, Tullow was discursively constructed as a corporate organization that is “performing well” against its key objectives and social, environmental, and profitability KPIs. Examples of this predication strategy are, “We performed well against key 2007 objectives,” “We achieved most of our goals for the year,” “We achieved our target of having no significant environmental incident,” and “We have already seen significant improvement in 2008 with no Lost Time Injuries (LTIs)⁷⁶ in first quarter, over two million hours worked since last LTIs.” These

⁷⁶ “Any work related injury or illness, other than a fatal injury, which results in a person being unfit for work on any day after the day of occurrence of the occupational injury. “Any day” includes rest days, weekend days, leave days, public holidays or days after ceasing employment” (Tullow Oil, 2007, p. 34).

predication strategies are summarized in Table 40. The next section examines how Tullow Oil, through its CS and risk communication, discursively constructs its failures and missed targets.

Table 40

Sample Predication Strategies Used to Construct Tullow’s Successful Performance

Social Actor	Predication Strategies/Devices
Tullow Oil	<i>Successful corporate performance</i>
As “We” and “Tullow”	<p>Performed well against key 2007 objectives</p> <p>Achieved most of our goals for the year</p> <p>Agree to proactive performance goals with the Board that reflect our continuous improvements in EHS and CSR across the business.</p> <p>Have strong investor relations and corporate communications programmes which demonstrate all aspects of the Group’s performance in a timely, uniform and transparent manner.</p> <p>Achieved a credible C+ (GRI) rating in the first year</p> <p>Expanded the reach of our environmental KPIs</p> <p>Expanded our recording of GHG emissions beyond the UK</p> <p>Have incorporated CO₂ and CH₄ attributable to drilling, well testing and production.</p> <p>Achieved a further 12% reduction in CO₂ emissions.</p> <p>Are involved in a project to assess opportunities to use our assets in new ways to contribute to the reduction in CO₂</p> <p>Have new ways to contribute to the reduction in CO₂</p> <p>Have improved our reporting of oil in water</p> <p>Had several examples of excellent health and safety performance</p> <p>Have taken significant steps to meet the Board’s challenge to improve our health and safety record</p>

Source: Tullow Oil CSR Report 2007-2013

Missed targets and failures. A third theme established in Tullow's CS communication texts had to do with its missed targets and/or failures. One requirement of the GRI's Guidelines for Sustainability Reporting, which Tullow Oil uses in its reporting, is "*balance* and reasonable presentation of the organization's performance" (GRI, 2011, p. 7, emphasis added). Thus, as part of (or a result of this requirement), Tullow reports and discusses its shortcomings, missed targets, and need gaps. These negative predications were limited in the CSR reports and news releases analyzed for this project, and were mainly in relation to LTIs falling short of projected targets. Examples of predications attributed to "We" and "Tullow" (i.e., Tullow Oil as a corporate actor) used in this sphere included: "We didn't maintain excellent health and safety record" and "We experienced HIPOs in our office facilities." (For a longer list of predication strategies Tullow used to construct itself as an organization that has flaws, see Table 41). Besides the fact that the discourse surrounding Tullow's missed targets or failures was only scantily represented in Tullow CSR and risk communication, it was always closely linked to or sharply mitigated by the discourse of aspirations. Failure or inability to meet targets was almost always counterbalanced with aspirational predication strategy.

I return to this point in the discussions on intensification and mitigation strategies. Let us examine the third predicational strategy used to describe Tullow as a social actor.

Table 41

Sample Predication Strategies Used to Construct Tullow’s Failures

Social Actor	Predication Strategies/Devices
Tullow Oil	<i>Discursive Construction of Failures/Need Gaps</i>
As “We” and “Tullow”	<p>Recorded 10 LTIs in 2007, which when coupled with a 16% reduction in hours worked across the group, raised our LTIFR⁷⁷ to 1.95</p> <p>Also experienced HIPOs⁷⁸ in our office facilities as well as field operations</p> <p>Recognize the challenge of operating progressively more and bigger projects</p> <p>Need to prepare more formal positions on issues such as climate change, human rights, and biodiversity as we grow</p>

Source: Tullow Oil CSR Report 2007-2013

Tullow’s Being and Actions. This fourth cluster of predicational strategies entailed various linguistic schemes that were used to represent Tullow Oil’s corporate being — its ontology of some sort — and actions. In simple terms, this discourse category answers the questions: What does Tullow Oil look like, and how does it act? The results here were consistent with the discourse categories identified in the preceding sections of this analysis. The predications used in Tullow’s CS and risk communication texts were predominantly positive. These predications ranged from how Tullow attributed certain characteristics to itself in areas such as strategy, social initiatives and community projects, executive management, and environmental management, among others. For example “we” was discursively constructed as undertaking “thorough assessment of the

⁷⁷ While LTI, is an absolute number of injuries Lost Time Injury Frequency Rate (LTIFR) is the number of LTIs per million man hours worked.

⁷⁸ High Potential Incidents (HIPOs) are those hazards whose worst probable outcome is fatality. I dealing with HIPOs, Tullow assessed occupational health and safety hazards by focusing on the *potential* rather than the *actual* severity of the incident.

environmental issues needed manage prior to undertaking any activity” and ensuring that environmental considerations are aligned with overall decision making processes. In addition, “we” was discursively constructed as an actor that is working to understand its our “contribution to climate change at both a local and global level.” Also, “we” (i.e., Tullow Oil) now includes atmospheric emissions data for all of its drilling operations in its non-financial reports. In another example, Tullow (2007) ascribed the following predication to itself:

The programmes [we] engage in ... support the communities and protect the environment in which we work, [and] give Tullow a competitive advantage and the ability to develop a political and community profile that supports our business objectives.

See Table 42 for a more expansive list of predication strategies used in Tullow Oil’s CSR/risk communication to discursively construct the organization as a corporate entity whose activities and processes affirm its position as a good environmental steward, community citizen, and profitable venture.

Table 42

Predication Strategies Used to Construct Tullow’s State of Affairs and Actions

Social Actor	Predication Strategies/Devices
	<p data-bbox="532 1545 1182 1577"><i>Discursive Construction of Tullow’s Ontology and Actions</i></p> <p data-bbox="532 1608 1167 1640">Have a clear strategy that is both profitable and sustainable</p> <p data-bbox="532 1671 1292 1703">Have been working closely with local communities as far back in 1987</p> <p data-bbox="532 1734 906 1766">Have clear objectives documented</p>
Tullow Oil	Continued to set own appropriate standards and controls where local regulation was lacking

As “We” and “Tullow”

Have strong investor relations and corporate communications programmes

Have developed a social initiative called working with communities

Are building an adaptable, multi-disciplined team who are able to identify, share and build on best practice within the business

Partner with charities where this is the best avenue to make a contribution

Are able to satisfy integrated management system (IMS) requirement that environmental impact be assessed qualitatively and quantitatively

We set ESIA's as a requirement for all Tullow drilling, seismic and production activities

Recognize that CO₂ and CH₄ emissions from the use of hydrocarbons in our exploration and production activities contribute to climate change.

Are benchmarking our GHG emissions against an industry accepted standards

Works to reduce our potential contribution to the climate change in a complex manner.

Support a number of initiatives to reduce emissions

Are proud to be involved in a project to assess opportunities to use our assets in new ways to contribute to the reduction in CO₂

Use International Association of Oil and Gas Producers (OGP) metrics to ensure our health and safety data is fully aligned with recognized standards

Provide local employment

Issued a corporate Driving Policy to set core standards to help manage vehicle and road journeys

Are working with different cultures and cross (therefore a community-based security approach is an imperative)

Still maintain the minimum requirements in terms of physical security such as fencing and security personnel

Use the annual management review process to highlight the key risks and activities for the upcoming 12 months

Continue to develop new terms and conditions for employees to fit our changing business

Work with charities to provide fast and effective relief through our Emergency Fund.

Source: Tullow Oil CSR Report 2007-2013

Tullow as Aspirational. In the fourth cluster of predicational strategies pertaining to Tullow as a social actor, the corporation employed various schemes to discursively construct its actions and processes as part of an aspiration to continuously improve, notwithstanding its successes or failures. Aspirational discourse as seen in Tullow’s corporate sustainability reports and communications is overtly forward looking and optimistic. This discourse was often employed to mitigate and counterbalance statements about Tullow’s inability to meet some particular targets or metrics (e.g., Lost Time Injuries). The discursive construction of Tullow—via its CSR talk — as an aspirational organization could also be seen in claims and assertions regarding vision, targets, aims, efforts, planning/plans, and goals. Examples of how this predication device was employed in Tullow Oil’s CSR talk are enumerated in Table 43.

Table 43

<i>Predication Strategies Used to Construct Tullow as Aspirational</i>	
Social Actor	Predication Strategies/Devices
Tullow Oil	<i>Discursive Construction of Tullow as Aspirational</i>
As “We” and “Tullow”	<p>Make every effort to manage our operations so as to minimize harmful impact, reduce energy consumption, drive down emissions and waste</p> <p>Have already learned from our poor performance (i.e., LTIs and HIPOs)</p> <p>Continue to focus our efforts on working with communities in areas such as health and education</p> <p>Set ourselves clear goal of increasing discretionary social and community expenditure to more adequately reflect growth and maturity of business</p> <p>Set targets of improving our EHS and CSR leadership</p> <p>As a minimum standard aim to comply with the regulatory parameters in the countries where we operate</p>

Will continue to expand the scope of data gathering in order to develop a comprehensive view of group performance

Will consider what role we can play in the Clean Development Mechanism

Are working towards making Carbon Capture and Storage (CCS) a reality in the UK.

Aim to compare our current data with that of the OGP

Will continue to raise internal best practice (pertaining to Driving Policy)

Have set longer-term goals to be achieved by 2010, including a requirement for all Tullow operated facilities to have a documented EHS Case by 2010

Receive report outlining areas for improvement after our activities are independently observed

Have set a target to have a position on the United Nation's Global Compact within three years

Have set a target to have a position on the Voluntary Principles on Security and Human Rights within three years

Source: Tullow Oil CSR Report 2007-2013

So far, in this chapter I have presented results of the analyses on how Tullow Oil has communicatively constructed its corporate sustainability (CS) practices. Now, I turn to the predication strategies it assigned to other social actors.

Predication strategies used for 'other' social actors. These referential categories include "charities and non-profits," "staff and employees," "shareholders," "people," "poor/developing countries," and "Africa." The rest include "Tullow Group CSR Committee," "GRI," "UN Global Compact," "ISO 14001," "Ghana," "Deloitte," "traditional chiefs," "District Chief Executive," "OGP," and "Ghana National Petroleum Corporation (GNPC)." To begin with, the macro-level and institutional social actors are

presented, followed by individual actors. Some of the most salient predications relating to these actors are listed in Table 44.

Table 44

Other Major Institutional or Macro-level Social Actors and Predication Strategies

Social Actor	Predication Strategies/Devices
Poor or Developing Countries	<p>Their children are being helped</p> <p>Lack infrastructure and feasible waste disposal routes</p> <p>A place where Tullow’s digest challenge is who to perform its duty of properly disposing off waste</p> <p>Access to fresh water is limited</p> <p>Have greater risks associated with driving.</p> <p>There are industry examples where human rights issues occur in developing countries during E&P activities</p> <p>The prevalence of HIV/AIDS is well documented across</p> <p>Access to basic requirements such as clean water and health care is limited</p> <p>A place where key EHS standards are either not in place or not adhered to</p>
Africa	<p>Tullow Groups’ largest core area</p> <p>A region that has transformed Tullow Oil due to exceptional exploration successes in Ghana and Uganda</p> <p>Generates over 50% of Tullow’s production</p> <p>Represents over 80% of our reserves and resources.</p> <p>69% discretionary CSR budget spent there in 2007</p> <p>77% Group CSR expenditure was spent there in 2008</p> <p>A place whose high HIV/AIDS prevalence is well documented</p>
Ghana	<p>First major oil discovered there in 2007</p> <p>Oil discovery there represents an opportunity and a challenge</p> <p>An exploration successes story</p> <p>A place where Tullow is involved in drilling water wells</p>

	To be prepared for ISO14001 certification in 2009
Jomoro District	<p>Aiming to be ISO14001 certified in the fourth quarter of 2011</p> <p>Beneficiaries of 12 mechanized and hand pumped wells</p> <p>A water wells opening ceremony was held there</p>
Global Reporting Initiative	<p>Their reporting guidelines are used by Tullow</p> <p>A world-wide multi-stakeholder organization that created and maintains a global sustainability reporting framework</p>
ISO14001	<p>Standards that Tullow is strongly focused on maintaining and implanting into its operations</p> <p>Five Tullow sites certified in 2007</p> <p>Two countries added to certification in 2008</p> <p>Two more locations added to certification over 2007,</p> <p>Provides Tullow operations with a systematic approach to assessing environment in which it operates</p> <p>Allows an Tullow to appraise its potential impact and prioritize these issues in its management planning</p>
UN Global Compact	A standard Tullow is aiming to align its policies and processes with Tullow's long term objective
Deloitte & Touche	<p>Had a three year independent assurance program which Tullow took participated in</p> <p>Independence policies provided bases for all Tullow Oil assurance engagements</p> <p>Independent policies cover all of the requirements of the International Federation of Accountants (IFAC) Code of Ethics and in some areas are more restrictive.</p>
International Association of Oil and Gas Producers (OGP)	Their definitions serve as a guide for Tullow Oil's reporting requirements
Government	<p>CSR has become important to them</p> <p>Tullow's goal is to comply with all applicable</p> <p>Set regulatory parameters in the countries of operation</p> <p>Legislation, where less developed, makes Tullow set appropriate standards to work with.</p>
Charities and Non-	Tullow's partners in development

Profits

Sightsavers partnership prevented detrimental eye conditions in local communities

Tullow work with to ___ to provide fast and effective relief through its Emergency Fund

Their research (i.e., Programme for Conservation and Rational Utilization of Forest Ecosystems in Central Africa (ECOFAC) has been supported by Tullow since 2003

Have, in partnership with Tullow, delivered initiatives such as the distribution of condoms and voluntary testing and counseling.

Local community

Increasingly sees CSR as important

Their daily challenges are being addressed

Are paid daily attention to communities

Benefit from the provision of basic health and education needs

Beneficiaries of country managers' increased involvement

Places where CSR performance continues to make a significant difference

Employed where possible

Would never be displaced

Supported and where possible uplifted

Participation, dialogue, consultation are recognized as critical aspect of CSR and corporate sustainability

Being worked

Beneficiaries of Tullow and Sightsavers' medical intervention aimed at preventing detrimental eye conditions

The benefit from support for ECOFAC, through eco-tourism and minimizing the spread of Ebola virus from primates to humans

Are being worked with to ensure proper/ responsible disposal of waste and by-products

Tullow builds links with them

Tullow is transparent with them

Are employed by Tullow

Beneficiaries of Tullow's commitment to help

Being worked with to ensure that human rights are adequately and sensitively managed

Through active engagement, their rights are considered and their most material issues addressed

Recipients of basic health, hygiene, and water facilities

Members were present at Mangyea water well commissioning

**Department of
Community Water and
Sanitation**

Working with Tullow to ensure water wells remain operational in the long term

Source: Tullow Oil CSR Report 2007-2013

Developing or poor countries. Generally, “developing/poor countries” were constructed negatively. They are mainly referred to as beneficiaries of Tullow. Their children are being helped. They often lack access to basic needs such as fresh drinking water and therefore benefit from Tullow’s “priority” programs that maintain or supplement clean water supplies. Also, “developing countries” lack infrastructure and feasible waste disposal routes, which makes it challenging for the focal organization (i.e., Tullow) to meet its duty of properly disposing of industrial waste. “Developing countries” also appear as victims of human right abuses and “well-documented” HIV/AIDS; they need to be helped. In addition, developing countries are represented as places where EHS standards are often lacking or not adhered to. And, “It is within such challenging context that Tullow has to “meet the challenge of developing appropriate EHS programs, and drive improvements in EHS awareness and activities.” Besides, “developing countries” are represented as places where the risks associated with driving are higher — the basis of Tullow’s driving policy.

Africa. The predication strategies used to describe “Africa” were similar to those used to represent “developing countries.” For example, Africa was also discursively

constructed as a continent that benefited from 69% of Tullow Oil's discretionary CSR budget. Also, it is presented as a continent where the prevalence of HIV/AIDS is well documented and therefore worthy of attention. In addition, the African continent was described as Tullow's "largest core area." On face value, this description could be viewed as positive, but when viewed within the context of how Africa (and much of the natural resource rich developing world) has been historically exploited by the developed world, it would be naïve to view how Tullow discursively constructed Africa as its "largest core area" in a positive light. Along the same lines, Africa was framed as providing 50% of Tullow's production, and representing 80% of its reserves and resources. Thus, the predication strategy used to discuss "Africa" affirms and perpetuates the dependency syndrome and rudimentary division of labour between the global North (as the owners of capital) and Africa as owners/suppliers of raw materials.

Ghana and Jomoro District. There are striking but not surprising parallels between the discourse about developing countries, Africa, Ghana, and Jomoro District. Analogous to the predication strategies used by Tullow in its reports and communication texts to represent Africa, Ghana was represented *only* in relation to resources, as a recipient of water wells and a giver of oil and gas resources. The country was constructed as a place where there has been recent petroleum exploration success, which was viewed as presenting opportunities and challenges for Tullow. With respect to the Jomoro District, one of the six coastal districts adjoining Ghana's offshore oil region, Tullow via its CS communication represented it as a beneficiary, for example, of 12 mechanized and hand pumped water wells. And to celebrate the provision of such water wells, an opening ceremony was held in the "Jomoro District," where various stakeholders such as local

residents and GNPC were invited. In essence, Jomoro District was represented as a place where provision of basic social services are celebrated.

Global Reporting Initiative, ISO14001, UN Compact, International Association of Oil and Gas Producers (OGP), and Deloitte & Touche. These regulatory frameworks, association, and advisory firms were mainly constructed in ways that appeared to confer credibility to Tullow Oil. For example, “OGP” was framed as an association to which Tullow belongs; its definitions and principles guide Tullow’s reporting guidelines. Likewise, Tullow was committed to “Deloitte’s” three-year *independent* assurance program, in which all assurance engagements are performed in accordance with Deloitte’s independence policies. “Deloitte” was also represented as having strict independence policies that meet the requirements of the International Federation of Accountants (IFAC). ISO14001 was discursively constructed as an international standard, which “provides Tullow with a systematic approach with assessing the environment in which it operates,” by allowing an appraisal of potential impact and management priorities. This implies ISO14001 is discursively constructed as a framework in order to constitute Tullow Oil’s environmental management processes as robust. In addition, these were represented as standards Tullow Oil was adhering to at different levels. For example, the UN Global Compact was constructed as a standard Tullow was aspiring to align its policies and operations with: “Our long term objective is to align our operations with the UN Global Compact and the Voluntary Principles on Security and Human Rights.”

Government, laws, and regulations. “Government” was constructed as increasingly viewing CSR as important. In line with this, “laws and regulations” in countries of operation were framed as a minimum standard to which Tullow Oil adhered.

And, the absence of such regulations was regarded as posing no barrier to Tullow's adherence to international best practices. For example, in discursively constructing "laws and regulations," Tullow Oil explained that, "Where the local legislation is less developed, we set appropriate standards to work to."

Charities and non-profits. As shown in Table 44, in all instances, "NGOs" and "charities" were presented as agents with whom Tullow partners "where this is the best avenue to make a contribution." They were discursively constructed as conduits for Tullow Oil's CSR programs and social/development mission. For example, working with "charities" helped Tullow to "provide fast and effective relief through" its Emergency Fund.

Local community. Similar to the discourse surrounding most others-referencing social actors in Tullow Oil's CSR communication, "local community" was framed in relation to Tullow. "Local community" is referred to as being both a partner and a beneficiary of Tullow's activities in general and its CSR programs in particular. The benefits are seen in such areas as: basic health, hygiene, water facilities, and employment. In addition to these services, "local community" is represented as being on the receiving end of Tullow Oil's transparency and full consideration of balancing impact with meeting business goals. The few times "local community" was represented using the language of 'rights,' those rights were only "considered." As seen in Table 44, the relationship between Tullow and "local community" was linguistically framed to be blatantly asymmetrical, using such language as: "we builds links," "we helps," "we uplifts," "we supported," and "we provide employment." Now we turn to the characteristics that were

attributed to *individual social actors* nominated in Tullow Oil's CS and risk communication texts.

Additional micro-level social actors. These individual or micro-level actors include “people,” “shareholders,” “scientists,” “Aidan Heavey,” “staff and employees/executives.” First, “Aidan Heavey,” the CEO of Tullow Oil plc was represented as someone who signs off on Tullow's CSR policy. This predication strategy attempts to confer credibility on the CSR policy as well as demonstrate to stakeholders how much premium Tullow places on corporate responsibility. The “people” is used in both to refer to employees (i.e., ‘our people’) and local community residents. “People” as employees are protected. Tullow invests in them. And community members see Tullow as part of their community due to its Working with Communities initiative. Also, as community residents, indigenous “people” are framed as being in need of sustainable development. “Shareholders” appear as people to whom CSR has become important. This discursive construction of the “shareholder” is salient when looked at within (a) the context of how apprehensive some investors have been to the idea of CSR in the past, (b) the business case for CSR, and (c) the increasing stakeholder (versus shareholder) orientation to business. I return to this point in Chapter VII.

“Traditional chiefs” were also discursively constructed as persons who were present at water well commissioning programs, and as people who have “responsibility and duty to ensure that our communities benefit and prosper from Ghana's new oil province.” And finally, “scientists” were primarily framed in relation to climate change and global warming. They were discursively constructed as people who have “predicted” that the trapping of more heat in the atmosphere due to greenhouse gases (GHG) is

leading to “global warming,” which could lead to “extremes in the weather and potentially impact the timings of the seasons.”

To recap, in Reisigl and Wodak’s (2005, 2009) CDA method, there are five heuristic questions and strategies (presented in Table 38), including referential and predication strategies that attribute characteristics to these named entities. So far, the researcher has analyzed the key actors, social phenomena, and processes that are named in Tullow’s communication (i.e., stakeholders and issues). The characteristics, attributes, and features that are ascribed to these stakeholders have also been examined. The next section focuses on the predicational strategies that are used by Tullow, via its CSR and risk communication texts, to discursively construct the different social phenomena and processes it named.

Predication strategies used to frame various social phenomena. The social phenomena whose predication strategies were analyzed include “environmental conservation/biodiversity,” “greenhouse gases,” “global warming/climate change,” “safe and clean water,” “sustainable development,” “goals/objectives/targets,” “values,” “oil spill,” “malaria,” and “business growth/success.” Each is discussed below.

Environmental conservation/biodiversity. The discourse surrounding “Environmental conservation and biodiversity” was discursively framed as a challenge that needs to and could be overcome through deliberate planning and implementation of robust environmental management systems. This discourse, while not surprising, is interesting. It lays bare a key assumption that underlies much corporate sustainability practice. (I return to this in the section on arguments, perspectivization, and mitigation

strategies.) Three fairly overlapping discourse categories were identified: (a) biodiversity as a challenge that is being met, (b) an acknowledgement that operations have potential impacts on “sensitive ecosystems,” and (c), a phenomenon of much interest to Tullow, in all of its operations.

The first category was directly stated as well as implied. Examples include, “environmental conservation is a challenge that is being met” by making it a “core part” of Tullow’s ESIA and EHS policy.”

The second category of predication strategies used to frame “biodiversity and environmental conservation” entailed explicit and tacit admission of a plausible link of causality between E&P activities and ecological damage. In this instance, “biodiversity” was framed as a thing that has a complex relationship with Tullow’s activities; it is a phenomenon that is impacted by Tullow Oil’s activities. Thus, it was represented as a phenomenon for which Tullow needs to exercise “responsibility to minimize and mitigate” ecological harm. As indicated above, the CSR and risk communication discourse entailed the use of language such as *responsibility* and *duty*. Exemplars include: “Proper disposal of waste and by-product is our duty” and “[It is] our responsibility to minimize and mitigate our impact on biodiversity and to strive to fully understand the complex relationships as part of the ESIA process prior to operations.”

Third, “biodiversity” was discursively constructed in Tullow Oil’s corporate sustainability communication texts as being addressed in a “systematic way.” This discourse category elaborated on the abstract idea that “biodiversity is a challenge being met.” For example, “biodiversity and environmental conservation” was framed as a social

object whose “consideration of impact is balanced with meeting business objectives.” It is also a “consideration that is aligned with other [business] decision making processes.” These two predication devices manifest two things, the first of which is descriptive and the second is assumptive. In the first instance, the discursive construction of “biodiversity” indicates the extent to which corporate environmental decisions are primarily business decisions — a business case of corporate sustainability. Second, these discursive strategies assume that business goals and the goal of maintaining a pristine natural environment are a zero sum game, incompatible, need to be balanced, and can actually be balanced. Another example of “biodiversity is being addressed” discourse is where the issue is framed a phenomenon for which “ISO14001 provides a systematic approach to assessing environment, allowing appraisal of potential impact and prioritization of management planning.” Thus, a link can be observed between “biodiversity,” an international framework (i.e., ISO14001), and corporate environmental processes.

Greenhouse gases. Generally, Tullow Oil’s corporate sustainability communication texts framed “greenhouse gases” (GHGs) as a social phenomenon in relation to climate change or global warming. GHGs are “generated primarily through operating combustion engines, cold venting of gas, electricity generation and well test operations.” “Greenhouse gases” were also discursively constructed as “*one possible* reason for unusual changes in weather” — a rather instructive subtle predication strategy, which diminishes the complicity of GHGs in climate change. Along similar lines, “GHGs” such as CO₂ and CH₄ were referred to as things Tullow emits into the

atmosphere due to its exploration and production activities. Thus, Tullow “contributes [GHGs] to climate change.”

Climate change/global warming. As the analysis on Tullow’s discourse about GHGs indicates, the discursive construction of climate change and GHGs were linked. And the framing of climate change was done in three ways: the nature of the phenomenon, Tullow’s relationship with the phenomenon (as a contributor to the problem and part of the solution to the problem), and the broader implications of the phenomenon.

According to the first category identified above, the phenomenon of “climate change” is regarded as a “complex concept.” It is “created when more heat is trapped in the atmosphere.” Also, the problem is referred to as a phenomenon to which Tullow is making an adverse contribution due to CO₂ and CH₄ emission from its production and exploration activities. However, beyond a few instances where climate change was framed in terms of how complicit Tullow was in the problem, much of the predication strategies used to discuss “climate change/global warming” framed the issue as a problem for which Tullow Oil was actively taking “complex steps to reduce its *potential* contribution to.” Tullow’s purported attempt at helping curtail “climate change” included a continual participation in European Union (EU) Emission Trading Scheme (ETS), an achieved 12% CO₂ reduction in 2007, and efforts to benchmark its GHG emissions against industry accepted metrics. Thus, climate change was constructed as a phenomenon for which Tullow Oil is involved in projects that seek to “assess opportunities” where it can use its assets in new ways that contribute to the reduction of CO₂ emissions. “Climate change” was discursively constructed as a phenomenon Tullow is “working to understand its contribution to, both at the local and global level.” And, in

aspirational and normative terms, “climate change” was also referred to as a thing Tullow needs to have a clearly articulated corporate position on. It was a problem that Tullow was also *considering* what role it could play in programs such as Clean Development Mechanism (CDM)⁷⁹ Regarding its implications (the third category of discourse about “climate change”), climate change was framed as a phenomenon scientists have predicted could “lead to weather extremes.” Thus, the link between climate change and predicted outcomes such as weather extremes was cast in probabilistic and futuristic terms.

Safe and clean water supply, and malaria. In Tullow Oil’s corporate sustainability communication texts, these social phenomena were presented as challenges that are being met. They are priorities that Tullow is committed to addressing, especially in developing countries where access to such basic needs are missing. Besides, they were framed as issues or social phenomena Tullow has successfully provided and/or is “combating.”

Sustainable development. This is another social phenomenon or concept that is referenced in Tullow’s corporate sustainability communication texts. This idea is framed as a phenomenon that has a “greater potential” to affect business than ever. Its management is “an even more critical and integral aspect of businesses,” and yet it remains something to which Tullow is committed. Apart from managing it, “sustainable development” is discursively constructed as a phenomenon, which, when reported on, could lead to beneficial business and environmental outcomes. Exemplars of this predication strategy include: “Reporting encourages organizations to measure, track, and

⁷⁹ The CDM is a mechanism that allows countries with emission reduction targets (Annex B Party) under the Kyoto Protocol to invest in emission reduction (or sustainable development) projects in developing. This allows them to offset GHGs and gain certified emission reduction (CER) credits, which can be applied toward their Kyoto Protocol (or emission reduction) targets (UNFCCC, 2015).

improve their performance on specific issues” and “reporting on sustainability management and performance leads to improved outcomes.”

Goals/objectives/targets. This referential strategy is what in this dissertation is termed “the aspirational core labeling strategy,” which refers to important ways Tullow Oil was discursively constructed as an organization that is aspiring to be *virtuous*, responsible, and accountable. These referential strategies have previously been identified in this chapter. Therefore, in this section, an analysis of the attributes (i.e., predications) that Tullow ascribed to its “goals/objectives/targets” in its corporate sustainability and risk communication texts are presented. Overall, the analysis of how Tullow Oil represented and spoke about “goals/objectives/targets,” indicates that the organization – through its CSR and risk communication efforts—discursively constructed itself (since “goals/objectives” were ultimately linked to “Tullow” as a social actor) as an aspirational organization that has attained or plans to pursue best practices and attain particular targets. Hence, “goals/objectives/targets” were represented as *things* Tullow holds dearly and is therefore either achieving them or *hoping* to achieve them. The issues here were thematically constructed in terms of environmental management, health and safety, corporate responsibility (in terms of reporting and social/community development), all of which were framed as *things* that are being balanced with business goals. These predication strategies further illustrate how nomination or referential strategies (in this case environmental management, corporate responsibility, etc.) could also function as attribution of characteristics (i.e., predication strategies) in communication texts. As Table 45 indicates, in all instances, “goals/objectives” were framed as things that have been achieved or being pursued.

Table 45

Some Predication Strategies Used to Construct Tullow’s Corporate “Objectives”

Social Phenomenon (“Objectives”)	Predication Strategies
Environmental Management /leadership	<i>Something that has been attained</i>
	Three year environmental performance plan completed by 2010
	Developed independently assured performance and environmental data (for CSR reporting)
	<i>Something that is being pursued</i>
	Build fully representative environmental data
	No significant environmental incidents
	Ensure all assets and countries are certified to ISO14001
	Develop ESIA’s for all activities using standard guidelines
	Establish a corporate position on key industry issues such as climate change and biodiversity
	Continue to expand the scope of data gathering in order to develop a comprehensive view of group performance
	To fully balance consideration of environmental and community impact with meeting business goal.
	To build fully representative environmental data
	To be achieved by engaging in energy efficiency auditing and the carbon footprint of operations
In the long-term, align operations with the UN Global Compact	
<i>Imperative (Strategic)</i>	
Critical to achieving strategic objectives and protecting <i>our</i> people and reputation	
Health and Safety Management	<i>Something that has been attained</i>
	Set together with the Board
	Improving near miss reporting to ensure all incidents are recorded properly and that we continue to reduce number of EHS risks
	<i>Something that is being or to be pursued</i>
	To be achieved in the short term, focus on restoring strong health and safety performance
To be achieved by facilitating strong EHS progress	

To be achieved through by ensuring unit and line managers deliver on targets
To be achieved through EHS training matrix

To be achieved by achieving an LTIFR less than 1.0

To be achieve vehicle accident frequency rater per million km driven less than 8.0

Holding EHS meetings for business unit and asset managers quarterly

Demonstrating EHS leadership across all levels of management to support improvements in EHS performance

Reflect an improvement in TRIFR, bringing it more in line with industry standards

**CSR
(Reporting,
social/community
development, and
discretionary spending)**

Something that has been attained

Set together with the Board

Developed CSR reporting

Something that is being or to be pursued

Achieve budgeted social and community spending of US\$ 2 million

Develop monthly CSR reporting

Deliver the 2008 discretionary budget for social and community programs

In the long-term, align operations with the Voluntary Principles on Security and Human Rights

Continue to improve stakeholder engagement and feedback mechanism for CSR report

Align with UN Global Compact 10 principles and Voluntary Principles on Security and Human Rights

Achieve Global Reporting Initiative (GRI) 'B' grading

Publish formal positions on human rights and HIV/AIDS

**Regulatory
Compliance/ Human
Resource**

Something that is being or to be pursued

To comply with all applicable laws and regulations

To apply responsible standards where legislation is absent

To employ the best

Source: Tullow Oil CSR Report 2007-2013

Oil spill. Another social phenomenon that was discursively constructed in Tullow’s corporate sustainability communication was “oil spill.” In view of the 2010 Deepwater Horizon oil spill involving BP, this social construct deserves some attention. Tullow discursively represented “oil spill” as a phenomenon whose impact on wildlife Tullow was well aware of. It therefore views avoiding “oil spills” as something that is “appropriate to support.” Relatedly, it was framed normatively as a problem that needs to be reported on irrespective of magnitude. This construction aligns with the fact that petroleum production in general and offshore production specifically are inherently ultra risky endeavors. Besides this, the phenomenon was represented in terms of Tullow’s approach to dealing with it. In this way, “oil spill” was constructed as an issue whose significance is defined “utilizing the Tullow accident and incident investigation process.” Besides, it was represented as an issue Tullow cared about because of the need to mitigate the risks the phenomenon could pose for the natural environment.

Business growth/success. “Business performance” was constructed as a challenge that was being met. It is a concept that is central to Tullow’s ability to attract highly skilled and qualified professionals. In addition, “business growth” was referred to descriptively — that is what business success looks like at Tullow. Examples are: 48% increase in staff, 120 projects supported across 19 countries, 69% discretionary CSR spent in Africa, the fact that Tullow received a three star (meaning outstanding) in Sunday Times Best Companies to Work For competition, and minimal staff turn over. Next, an analysis of how Tullow Oil discursively framed its processes is presented.

Predication strategies used to frame Tullow’s corporate processes. According to Reisigl and Wodak’s (2009) discourse analytical framework, one of the tools used in

CDA asks what characteristics, features, or attributes are ascribed to (a) social *actors*, (b) social *phenomena*, objects or issues, (c) and social *processes*. The preceding analyses have examined how Tullow Oil via its CSR and risk communication framed particular social actors and social phenomena. Now, in this chapter, I turn my attention to the predication strategies Tullow employed in talking about its processes, which arguably is part of its strategy to construct a reputation as a responsible organization. The processes whose predication strategies are analyzed include: “E&P activities,” “ESIA,” “EHS,” the abstract idea of “process/approach,” “CSR and corporate sustainability,” “technological processes,” and “assurance.”

The generic idea of “process/approach.” Tullow’s “process/approach,” as seen in its corporate sustainability and risk communication texts, was discursively constructed in four main ways: Integrated Management System (IMS), human resource management, community development and stakeholder management, security, and management review.

Integrated Management System (IMS). Integrated management system—which entails management reviews, health and safety, as well as environmental management—was referred to as an “approach” that provides a framework through which all activities are managed. It is constructed requiring qualitative and quantitative risk assessments, and allowing Tullow to achieve its environmental protection, health and safety objectives. It also enables the organization to give “thorough attention” to key management areas, including environmental issues. Also, Tullow framed “IMS” an approach that is implemented and effective at all locations Tullow operates, and it mitigates risks by “maintaining a balanced portfolio, through compliance with industry international/licensing policies.” Besides, Tullow’s IMS was linguistically referred to as

overseen by a nominated Executive Director. Other predication strategies refer to IMS as an approach that “allows a more balanced view” of emissions — it allows future growth. Regarding oil spills, IMS is framed as something that “takes into account the substance, quantity spilt, and spill location;” and with respect to general risk management, it focuses on “the potential rather than the actual severity” of incidents. IMS remains relevant through annual management reviews. Finally, embedding Tullow’s EHS culture into newly acquired locations was also framed as challenging than initially anticipated.

Human resource management system/organizational culture. This system or approach is referred to as providing enhanced “porting and modeling tools,” and allowing line managers to easily access team information on their own. Its management review process was constructed as a “successful mechanism.” And regarding its culture, CSR was discursively constructed as a central part of its organization culture.

CSR, community development, and stakeholder management. Tullow’s approach to CSR and community development was described as accountable, transparent, and committed to sustainable development (of business and community). Its stakeholder approach was discursively referred to as “direct and transparent” — “not merely a social responsibility, but is also clearly aligned to achieving long-term business benefits.” This predication strategy, it appears, frames long-term business outcomes as commensurable with community interests and environmental management goals. Thus, it was constructed as a process integrated into its operations and activities, and is critical to its ability to conduct business in a profitable and sustainable manner. Similarly, with respect to the utility of its CSR approach, Tullow frames it as a process that support local communities, protects the environment in which it works, and gives “Tullow a competitive advantage

and the ability to develop a political and community profile that supports its business.” This discursive construction of Tullow’s CSR is in line with the triple bottom line or corporate sustainability conception of CSR.

In terms of ethics, Tullow Oil frames its approach as eschewing bribery and harassment, while ensuring that ideals such as equal opportunity and open channels of internal communication are embedded into all areas of operation. See Table 46 for a more expansive list of predications ascribed to Tullow’s CSR and community development approach.

Natural security or community-based approach to security. As part of the abstract notion of Tullow’s “process/approach,” “natural security” was discursively constructed as attained via forming close links with local communities. This approach was viewed as Tullow’s “most effective method of security.” For example, Tullow states that its most effective approach to security lies in its ability to build close links local communities. “This openness and transparency through our ‘Working with Communities’ initiative fosters a positive relationship and the people see us as part of their community.” It was also referred to as an approach that remains important especially as Tullow is working with different cultures. In the next section, I examine the predication strategies for other specific corporate processes.

Table 46

Some Predication Strategies Used to Construct Tullow’s CSR, Stakeholder Management and Community Development

Corporate Process or Approach (“CSR”)	Predication Strategies
CSR/ Community Engagement	<p><i>Something that has been attained or being pursued/valued</i> Supported over 120 projects in 19 countries Increased focus on US\$870,000 spent on discretionary social and community support was below planned budget Promoted across Tullow Publicly available Committed to continuing with external assurance of reporting and improve stakeholder engagement Supports water wells and schools in local communities Performance continues to make a significant difference in many parts of the world, especially local communities. Formalizes “long standing commitment to helping” local communities One of the key elements of approach is to facilitate basic health, hygiene and water needs of communities Regularly reviewed by Board and Aidan Heavey Corporate accountability is guided by a clear governance framework Reflected in in organizational structure, policies, and processes Is a core Tullow value A welcome trend Achieved via ongoing investment in people and organizational structure Has a strong local and community support delivering Integrated into corporate and operational activities A part of (our) business commitment and culture</p> <p><i>Something to be pursued</i> To be align with UN Global Compact 10 principles and Voluntary Principles on Security and Human Rights Discretionary spend (in 2007) fell short of the budgeted amount To continue to improve stakeholder engagement and feedback mechanism for CSR report To publish formal positions on human rights and HIV/AIDS Aimed at achieve Global Reporting Initiative (GRI) ‘B’ grading</p> <p><i>Imperative (Strategic and Ethical)</i> Has become increasingly important to shareholders, government, employees, communities Recognizes the intangible and tangible impact of our business on the areas we operate in Gives Tullow a competitive advantage and the ability to develop a political and community profile that supports its business objectives Influences (our) success Delivers sustainable development for indigenous people</p>

Source: Tullow Oil CSR Report 2007-2013

E&P activities. First, oil “exploration and production activities” were constructed as sources of possible environmental impact. According to Tullow, E&P “can and do have direct impact on the environment.” This predication is the basis for Tullow to inject itself into the discourse on the impact offshore oil exploration has on the environment. However, it frames its role in terms of what is being done to mitigate environmental damage. Thus, “E&P” is discursively constructed as something Tullow was making, “every effort to manage [its] operations so as to minimize harmful impact, reduce energy consumption, drive down emissions and waste.” As a process, “E&P” was represented in terms of systems that have been put in place to keep ecological harm to the minimum. E&P as a social/industrial process is also framed a process that Tullow knows is often attended by human right violations, especially in developing countries — but its (i.e., Tullow’s) E&P process had not recorded any human right violations.

ESIA. Regarding environmental impact assessment, the act that established Ghana’s Environmental Protection Agency Act 490 (1994) states that:

The Agency may by notice in writing require any person responsible for any undertaking which in the opinion of the Agency has or is likely to have adverse effect on the environment to submit to the Agency in respect of the undertaking an environmental impact assessment containing such information within such period as shall be specified in the notice. (p. 8)

This points to the importance of environmental (and social) impact assessment. In its corporate sustainability and risk communication texts, Tullow discursively constructed the “ESIA” process as *constituting* performance standards. For example, “ESIA” is framed as an imperative for attaining performance standards, “linking standards with programs that address environmental risks and impacts,” ensuring that Tullow is able to

undertake a “thorough assessment of” the environmental issues that need to be managed. “ESIA” is also referred to as a process that ensures consistency in quality assessments, but helping the organization appreciate the “complex relationship” between its overall processes and biodiversity. In addition, ESIA is represented as a process that satisfies Tullow Oil’s Integrated Management System’s (IMS) requirement that impact assessments are both qualitative and quantitative. Thus, on the whole, “ESIA” is discursively constructed as having utility for business performance, environmental performance, and biodiversity. Also, it is framed as a “requirement for all drilling, seismic, and production operations” — a *duty* (albeit born out of regulatory necessity) that must be attended to.

EHS and Environmental Performance. First, “EHS and Environmental Performance” is referred to as a core aspect of Tullow’s ESIA. However, unlike the discourse surrounding the ESIA process, which is largely constructed in terms of its *utility*, “EHS and Environmental Performance” is framed in terms of *approach, outcomes, and expectations*.

First, the *approach* oriented EHS discourse appears somewhat abstract and/or definitional, focusing on explaining what constitutes Tullow’s EHS process. For example, the issue is framed in terms of: generally concerted effort and strong EHS; group production, drilling, and well test data being collected; and risk being proactively mitigated. Tullow’s EHS is also discursively constructed as proactive and entailing both qualitative and quantitative risk assessments. Environmental protection is predicated as managed on a day-to-day basis; reporting is expanded for continual improvement; and data that is more representative is captured. An example of *approach*-focused EHS

predication, which is also definitional is this: “The potential impact of an incident rather than its actual impact is very important to measure and learn from.”

Second, the *outcomes*-focused EHS discourse referred to specific actions and results that Tullow’s EHS processes have yielded. In this respect, EHS is discursively constructed in terms of expanded KPIs that reflect Tullow’s widening operational base, reported oil spill irrespective of size, “several examples of excellent health and safety performance,” reduced total recordable incidents, and LTI-free periods, and quarters with two million hours worked since last LTI. Other predications include zero fatalities during the year under focus, fewer distinctive trends in recorded incidents, and a corporate Driving Policy instituted to address the “critical issue” of vehicular accidents.⁸⁰ Besides these positive predications, Tullow’s discourse on EHS outcomes also includes negative outcomes (or missed targets). Examples of negative EHS outcome predications include: 19 motor vehicle crashes (MVC) per OGP definition; equipment failures; vehicle safety accounting for 62% of all HIPOs; unacceptable LTIFR; increased LTI; and 16% reduction in hours worked.

Third, the *expectation*-focused discourse tends to be aspirational or oriented toward future actions and outcomes. With respect to this, for example, “EHS and environmental performance” is discursively constructed as something that will continue to improve due to an expansion in the scope of environmental data collected. Much of the expectation-focused EHS discourse is counterpoised to the missed targets (negative outcomes) discourse. In other words, as stated in earlier analyses, aspirational corporate

⁸⁰ According to Tullow, vehicles and road journeys are one of the most recognized risks in the petroleum industry (Tullow, 2007).

sustainability and risk communication — as at least found in this study — are employed as a type of mitigation argumentation strategy intended to favorably position Tullow Oil as an actively engaged, value-based corporate organization.

The predication strategies that are discursively used to construct Tullow's EHS in aspirational terms are related to strategies used to ascribe attributes to social phenomena (and issues) such as global warming/climate change, sustainability, and environmental risks. Examples of predication strategies that are linguistically used to refer to Tullow's EHS in aspirational terms are: "EHS" as LTI to be improved in first quarter of 2008; target set to improve leadership through risk assessments; vehicle accident frequency rate to be reduced to less than 8.0; leadership to be demonstrated across all levels of management; and top quartile health and safety performance to be achieved. In addition, EHS is referred to in terms such as seeking to record no environmental incidents, standardize ESIA for all projects, and establish.

As seen from the above results, regarding the three classes of EHS and environmental performance discourse, the EHS system discourse has an overly positive outlook, while the EHS outcome discourse is both positive and negative. Interestingly the aspirational discourse (i.e., discourse surrounding EHS goals and forward looking plans) dominates much of the talk about Tullow's EHS. It is therefore argued that this predominantly aspirational language is a result of the fact that EHS outcome are *both* positive and negative — containing unmet targets or standards. Let us look at some specific examples.

Technological processes. Tullow constructed the application of technology to its E&P as a process that is helping it increase the chances of discovery. Besides, technology is presented as helping avoid drilling in hazardous areas, an indication of a faith in technology view, which is a key aspect of industrial-professional habitus. Thus, a technology is constructed as a thing, which if continuously improved would call for greater behavioral safety in order to prevent accidents. Conversely, the application of technology is also viewed as a way to improve safety, providing Tullow's "security staff and civil authorities with the necessary tools to respond swiftly and appropriately in the event of an incident." In addition, technology (i.e., GIS) is presented as "a means of evaluating the sensitivities" of new areas of operation.

Conclusion

In this chapter of this dissertation, two main points are made. The first is that Tullow's corporate sustainability and risk communication, especially as seen in their CSR reports and press releases, represent a collection, storage, and transmission of 'intelligent' information to interested parties — mainly investors but also regulators and civil society groups. Thus, CSR communication can be seen as the discursive construction and transportation of information about how corporate *values, actions, processes, and culture* interact with *issues* such as profitability and organizational effectiveness and/or efficiency, environmental health and safety, sustainability, and stakeholder concerns and interests to anyone who might care to know about these issues. Second, and perhaps more importantly, in line with the assumption that communication constitutes behavior, CSR

and risk communication performs a latent function. It shapes or at least has the potential to shape relevant corporate behavior on one hand and stakeholder perceptions and possibly actions on the other hand. These two functions suggest that CSR and risk communication are constitutive of social practice (both corporate and public) and constituted by practice — especially corporate practice and scientific-industrial-professional habitus. Scientific-industrial-professional habitus is the organization equivalent of how individuals' habitus constitute their risk perceptions (discussed in Chapter V).

In sum, Tullow Oil, through its corporate sustainability and risk communication, discursively constructs itself as an organization that is committed to: (a) ethical corporate behavior; (b) community engagement, dialogue and public participation; (c) community development; (d) environmental health and safety best practices; and (e) ensuring business effectiveness/efficiency by maintaining competitive advantage. An important question that deserves to be mentioned here is whether these discursive constructions as attribution of virtues merely legitimize Tullow Oil's position as a profitable and less risky investment or they are able to *constitute* Tullow as a responsible and accountable business?

Similar to Christensen, Morsing, and Thyssen's (2013) argument that CSR communications, whether they are deemed to be superficial or authentic, have the potential to stimulate improvements in corporate systems, processes, and actions, it is observed that Tullow constitutes itself as a responsible, successful, and aspirational organization. Besides, the fact that Tullow's CSR reports have moved from a C+ GRI Application Level in 2007 to an A+ Application Level in 2013, is an indication that CSR

talk indeed could spark positive organizational changes. The researcher's theory is that as Tullow openly talks about its systems, processes, outcomes, and missed targets, it is compelled to take appropriate steps to address its failures. Thus, organizations, especially those working in high risk/impact industries that report their corporate sustainability actions are more likely to progressively improve than those that do not report or communicate their CSR actions. Besides its movement from a C+ GRI certification to an A+ certification, Tullow used language that was more aspirational in 2007 than they did in 2013. This further supports the proposition that CSR talk *could* constitute responsible corporate actions and behaviors.

CHAPTER VII

DISCUSSION AND CONCLUSION

In view of (a) the growing empirical evidence supporting the effects cultural worldviews and affect have on public risk perceptions, (b) the SARF's proposition that an interplay of social, cultural, and media factors determine public risk perceptions, (c) the fact that Ghana's burgeoning offshore oil industry poses some threats to the natural environment and societal well-being of local residents, and (d) the normative ideal that corporations owe it to *themselves* and their *stakeholders* to operate in an environmentally safe, socially responsible, and economically beneficial way, the study set out to examine the socio-cultural antecedents of risk perceptions in one coastal district adjoining the oil region and Tullow Oil's corporate sustainability communication practices.

This chapter discusses the key research findings, situating them within the other broad debates and contentions in interdisciplinary fields of risk communication, risk perception, corporate responsibility, business and public policy, and corporate environmental management. It also includes a discussion on contributions to the literature in these fields, practical and theoretical implications of the study, limitations of the study, and new questions and areas for further study.

Discussion of Major Findings

Based on previous research, existing theory/conceptual frameworks, and practical realities at play in the study area, this study posed five major questions to guide its exploration of risk perceptions and corporate sustainability in Ghana's nascent offshore

petroleum production industry. The following summary and discussion of results—representing the study’s broad theoretical preoccupations—is guided by these five research questions (discussed in the preceding section).

Worldviews and Risk Perception

Research Question 1 asked: “Do different cultural worldviews predict different perceptions of environmental, economic, and social risks associated with oil drilling activities offshore Cape Three Point?”

As expected, the research found associations between cultural worldviews and risk perceptions. But the association between cultural worldviews and public risk perceptions depended largely on how risks and worldviews were conceptualized and measured. This points to the value-laden nature of the risk management process, which begins with the *initial structuring* of putatively risk issues (see Slovic, 1999; Hansson, 2010). Thus, definitions matter. Slovic (1999) makes a similar point that “even the apparently simple task of choosing a risk measure for a well-defined endpoint such as human fatalities is surprisingly complex and judgmental” (p. 690). This, means which risks are measured, and how they are defined and answered is inherently subjective and could determine the outcome of a risk analysis and for that matter how we prioritize, address, and talk about those risks. In the case of this study, when risk perceptions were conceptualized as people’s thoughts about how much risk Ghana’s oil production activities posed for the environment, human health, safety, or prosperity of their local community and Ghana as a whole (i.e., ISM) —as opposed to risk perception conceptualized as environmental

concern, social concern, and economic concern—they yielded different outcomes. While the first definition of risk perceptions yielded some associations with cultural worldview in some cases, the second measure of public perceptions yielded dissimilar associations with worldviews. A question that arises from this is: Since the choices that are made about how to measure risk perceptions makes a difference in people’s evaluations and perceptions, how do we decide which measure of risk perception should be used for policy planning and implementation purposes? There are no easy answers here. But the research indicates that a narrow technical conception of risk—often in line with what (in this dissertation) is termed a professional-industrial habitus—is too narrow to serve as a useful yardstick for business and policy decisions. Now, let us examine the specific linkages between worldviews and risk perceptions.

Sense of community and risk perception. People’s general emotional tone used to describe their local community and the general sense of community orientation were positively related to risk perceptions measured in terms of how much risk people thought the oil production activities posed for the environment, human health, safety, and prosperity of the community *and* their country as a whole. This implies individuals who felt positively (as opposed to negatively) about their local community were more apprehensive about the risks associated with the oil activities. According to Jenkins-Smith (1993), worldviews are able to filter information people receive about a *place*. The results from this study lend support to this view. Besides, it appears some form of motivated cognition or identity-protective cognition (Baumeister & Leary 1995; Kahan et al., 2007) was at play here. Identity-protective cognition views individual well-being as “intricately

bound up with group membership, which supplies individuals not only with material benefits but a range of critical nonmaterial ones, including opportunities to acquire status and self-esteem” (p. 470). Thus, individuals who have affinity for their local community (and by extension have their identities or self-esteem bound to or at least linked to their local communities) appear to selectively credit the dangers associated with the offshore oil production in ways that support their affinity for their local community. There is however, no evidence to suggest this mechanism was a conscious or deliberate one. Given the results regarding the role of affect, which is discussed below, the contrary viewpoint is more plausible.

Despite that ISM was positively related to sense of community, when risk perceptions were measured as environmental concern, economic concern, and social concern, there were no significant associations between sense of community and risk concerns.

General cultural preservation and risk perception. A major debate in cross-cultural psychology and cross-cultural communication concerns the universality of human cultural values. Shalom H. Schwartz’ World Values Scale (WVS) is one survey instrument that has been widely used internationally to study human cultural values (see e.g., Schwartz, 1994; Schwartz, 1999; Schwartz, 1992; Lindeman & Verkasalo, 2005). The study therefore tested a shorter version of the WVS and assessed its ability to predict risk perceptions pertaining to Ghana’s oil and gas industry. A shorter version of the scale, “general cultural preservation” (a form of grid worldview dimension), measured people’s orientations toward environmental protection, respect for tradition, conformity, and

security. The association between a cultural preservation and general risk perception (ISM) was similar to what was found between sense of community and general risk perception. For individuals who ascribe to a cultural preservation worldview, the offshore oil exploration and production is a threat to the environment, human health, safety, and prosperity of the local community *and* the country as a whole. The finding that a composite of environmental protection, respect of tradition, conformity, and security are positively related to risk perception is a departure from how researchers have in the past thought about grid worldview as an antecedent of public risk perceptions. In Dake (1990), Wildavsky and Dake (1990) and Kahan's (2012) scales, for example, values pertaining to conservatism and environmentalism are seen as competing; the former often attenuates technological risk, while the latter amplifies environmental risk. However, the results from the current study suggest that for the Ghanaian population studied, respect for *tradition* and respect for the natural *environment* are commensurable. Together, these values amplify the perceived risks associated with E&P activities in Ghana's petroleum industry.

As was the case for the relationship between cultural preservation and general risk perceptions (ISM), cultural preservation was found to amplify environmental concern associated with the petroleum activities. This implies that cultural preservation predicts both ISM and environmental concern, while sense of community only predicts ISM.

GCCWS and risk perception. Contrary to the evidence linking egalitarianism with high environmental risk perceptions (e.g., Dake, 1991; Wildavsky & Dake, 1990; Kahan et al., 2009; Kahan & Rejeski, 2009) because such risks are perceived to be a

source of widening inequality, no association between people's attitude toward equity and fairness and general risk perceptions was found. Neither was group orientation (measured as attitude toward government regulation of corporate behavior and attitude toward corporate autonomy) related to general risk perceptions. The analyses yielded similar results for economic and social risk perceptions. However, attitude toward government regulation of corporate behavior was found to attenuate environmental concern. Thus, persons who subscribe to the view that government needs to regulate corporate behavior tended to be dismissive about the risks the offshore oil production poses for the natural environment. The inverse relation between this 'group' cultural orientation and general result contradicts what pertains in the literature where an endorsement of government regulation is often related to high risk perceptions (e.g., Douglas, 1963, 1966; Douglas, 1970; Dake, 1990; Douglas & Wildavsky, 1982; Kahan et al., 2008a; Nan & Madden, 2014). A possible explanation for this result is that individuals who share in the worldview that government ought to control corporate behavior might be doing more than ascribing to government regulation; they also have *faith* in government's ability to regulate the offshore petroleum production industry in a way that would prevent or at least minimize ecological harm. Hence, the relatively lower risk perceptions.

Also, a similar series of analyses involving perceived oil production benefits, as the outcome variable found that attitude toward government regulation of corporate behavior was negatively associated with perceived benefits. No other worldview measure was associated with perceived benefits. The finding that attitude toward government regulation is inversely related to *both* perceived benefits and environmental concern is interesting, giving that extant research (e.g., Alhakami & Slovic, 1994) has demonstrated

that although risks and benefits are directly related in the ‘real world’ they are inversely related in people’s ‘hearts and minds.’ According to Alhakami and Slovic, this inverse relationship between risk and benefit is due to people’s reliance on affective evaluations to make judgments about risks and benefits of putatively risk phenomena. The finding in this study therefore suggests, that in this case people are making judgments using a high-risks-high-reward principle.

Affect, Worldviews, and Risk Perception

Research Question 2 asked: “Does affect influence risk perceptions above and beyond the influence of cultural worldviews on risk perceptions?”

This study found that the affective components of local residents’ thought about Ghana’s offshore oil production activities (as manifest in affective rating of images people associated with offshore oil production and Tullow Oil) were largely positive. The more cognitive images people associated with the oil production activities and Tullow Oil, the more negative those images tended to be. The findings regarding the relationship between affect, worldview, and risk perceptions were mixed. First, affective rating of Tullow Oil was negatively related to general risk perceptions (i.e., ISM),⁸¹ a result consistent with findings by other researchers (e.g., Leiserowitz, 2006; Slovic et al., 2004). Second, contrary to previous studies (e.g., Peters & Slovic, 1996; Slovic & Peters, 2006; Leiserowitz, 2006), affect was positively related to public environmental concern, which is not consistent with previous studies. Thus, persons for whom mental images about

⁸¹ Participants were asked: “*How much risk does Ghana’s offshore petroleum production pose for the environment, human health, safety, or prosperity of **this community**?*” and “*How much risk does Ghana’s offshore petroleum production pose for the environment, human health, safety, or prosperity of **this country**?*”

Tullow Oil and Ghana's offshore oil production evoked positive feelings were found to be more likely to perceive environmental risks as high. Despite this inconsistent pattern, this study generally supports the view that affective component of the images people associated with putatively risky phenomena (i.e., offshore oil production) *and* agents (i.e., Tullow Oil) serve as filters that ultimately reflect on public risk perceptions and judgments (e.g., Peters & Slovic, 1996; Slovic & Peters, 2006; Kahan, 2008; Leiserowitz, 2006).

However, affect was neither associated with economic concern nor social concern. Although no relationship was established between overall affect and perceived benefits, affective rating of the first cognitive imagery was inversely related to perceived benefits, and the rating of the third imagery was positively related to perceived benefits. This result suggests that it is possible for the same phenomenon to convey both positive and negative affect, and its possible for such affective components of cognition to have differential effects on perceived risk/benefits. An important question that needs to be addressed by future studies is, "What factors underlie the fact that the first and last affective imagery have differential associations with risk perceptions?" While it is uncertain what could explain this finding, the results demonstrate the complex nature of risk/benefit perceptions.

Regarding Research Question 2, as Peters and Slovic assert, "If affect and worldviews *both* orient an individual's risk perceptions, a regression analysis should find that each significantly and independently predicts" the issue of concern (p. 1446). It was found that a model that contained both affect and worldview measures (i.e., attitude toward regulation, sense of community, and cultural preservation) performed better in

explaining risk perceptions and environmental concern. And affective rating of offshore oil production (but not affective rating of Tullow Oil) individually added to the predictive value of the model, above and beyond the influence of all three cultural worldviews: sense of community, attitude toward government regulation, and general cultural preservation. In many cases, controlling for the effect of *affect* diminished cultural worldview's contribution to the model, which suggests that the effect of worldviews on risk perceptions are channeled through their affective orientations, thus serving as an emotional filter.

These results support the view that risk perceptions are best studied as latent affective orientations (Kahan, 2011, personal communication; Dake, 1991). In sum, individuals who: (a) did not subscribe to the worldview that government *ought* to regulate corporate actions and behaviors; (b) show a relatively high sense of attachment to their communities; (c) rate the images they associate with Tullow Oil favorably; and (d) rate the images they associate with Ghana's oil exploration positively are generally more likely to be worried that Ghana's offshore oil production poses significant risks for the country and their local communities. In the following section, results on CSR and risk communication (i.e., corporate sustainability communication) are discussed.

Corporate Sustainability Communication

Research Question 3 asked: "Is Tullow Oil engaging in corporate sustainability actions, and how is it communicating those actions?" This question was interested in

ascertaining Tullow Oil's corporate sustainability and risk communication practices and texts.

In response to this question, based on an analysis of Tullow Ghana Limited's CSR and risk communication texts, one can observe how the organization *discursively constructs* particular social *actors* (i.e., stakeholders), *objects*, and *phenomena* (i.e., issues and processes). The analyses that lead to this conclusion are based on two theoretical and conceptual perspectives: communication as constituting organization (CCO) and corporate sustainability framework (CSF) — proposed as part of this dissertation. As discussed in Chapter II, in CCO, the organization-communication relationship is viewed in terms such as organization as sensemaking (Weick, 1995), existing in interpretive processes (Taylor, Cooren, Giroux & Robichaud, 1996), discursive constructions (Fairhurst & Putnam, 2004), text and conversation (Cooren, Taylor, & Van Every, 2006), and as emergent processes (Taylor & Van Every, 1999). Three main points are made as follows.

Corporate sustainability discourse and stakeholders. First, the key stakeholders Tullow Oil discursively constructs include local communities, Africa as a continent, developing countries, non-profits and other civil society organizations, employees, government and regulatory institutions, shareholders, Deloitte & Touche, traditional chiefs and local government authorities (i.e., District Assemblies), and International Oil and Gas Producers (OGP). These stakeholders are also constructed using abstractions such as “the people” and “stakeholders.” Stakeholder groups such as local communities, Africa, and developing countries, were framed as lacking basic necessities of life that

Tullow is *trying* to fulfill. Stated differently Tullow used ‘stigmatization’ strategies (Kasperson et al., 2003; Kasperson et al., 1988) in its corporate sustainability communication about this group of stakeholders. This framing is marked by a latent—and sometimes manifest—indications of asymmetry in engagement and transmission (of information and basic needs), which reflect a narrow perspective of participation, engagement, and community development (Graham, 2004). This, when contrasted with other findings about Tullow’s largely positive rhetoric about its public engagement and consultation processes supports Graham’s view that there is often “an apparent gap between [corporate] rhetoric about public involvement and public participation, and the manner in which efforts to involve the public actually take place” (p. 39). External or what this dissertation terms institutional stakeholders such as the government and GNPC (the industry regulator), GRI, Deloitte & Touche, and the International Association of Oil and Gas Producers (OGP) were discursively constructed in ways that seek to lend legitimacy to Tullow Oil’s activities. For example, GRI guidelines and government regulations are things Tullow *adheres* to or *strives* to adhere to. Thus, these stakeholders constitute ‘capital’ from which the organization draws or seeks to draw credibility. This finding aligns with and affirms the fourth⁸² element in McPhee and Zaug’s (2009) four-process model of CCO — institutional positioning. According to this element, one way that communication constitutes organizations (and actions) is by positioning it in relation to other stakeholders. In this case, Tullow, through its discursive construction of particular stakeholders as weak, needy, and being helped, and others as offering standards

⁸² The four elements in McPhee and Zaug’s (2009) framework are membership negotiation (i.e., recruitment and socialization), organizational self-structuring (i.e., enduring qualities of organizational reflexive control and design), activity coordination (i.e., how via communication, organizations coordinate, connect, and shape work processes), and institutional positioning (via interaction with stakeholders). The key element in this model is that all four processes or “flows” are essentially communicative.

it is pursuing, Tullow appears to be negotiating, developing, and seeking to maintain an identity as an organization that is responsive to stakeholder needs, standards, and expectations, i.e., socially responsible.

Corporate sustainability discourse and social change. Second, Tullow discursively constructs itself as well as its organizational processes and outcomes favorably. And in instances when it discusses missed targets and poor performances in areas such as EHS, Tullow tends to discursively construct itself in aspirational terms — focusing on what it is doing or will be doing to meet its already high standard. Thus, corporate sustainability communication evidently becomes “aspirational talk” (Christensen, Morsing & Thyssen, 2013). Besides, comparing CSR report from 2007 when Tullow commenced oil exploration in Ghana through to 2013, it appears that during the earlier years of Tullow’s operations in Ghana, Tullow tended to use talk that was a lot more aspirational. But as the years progressed, it used a more positive language, perhaps an indication that it was *doing* rather than *aiming to do*. In their recently published article titled *CSR as Aspirational Talk*, Christensen, Morsing and Thyssen (2013) argued that incongruence between CSR actions and talk, are “not necessarily a bad thing and that such discrepancies have the potential to stimulate CSR improvements” (p. 372). The evidence from the current study, although not conclusive seems to point us in the direction that CSR talk *can* indeed constitute desirable actions and outcomes. The fact that Tullow’s GRI application had progressed from C+ in the year 2007 to A+ in 2013 lends further support to this hypothesis.

In summary, the analyses in this dissertation indicate that Tullow's corporate sustainability communication places experts and expert knowledge in in "pole position to define agendas and impose binding premises *a priori* on risk discourse" (Beck, 1992, p. 4). Much of the communication text ignores non-technical issues and judgment formation processes that are rooted in the social cultural context of local communities, i.e., habitus (Bourdieu, 1990). Although public risk perceptions and attitudes might be considered irrational and lacking evidence, this idea of 'lack of evidence' in itself exposes the inherent bias of the industrial-professional approach to understanding societal risks. While Tullow might be of the view that there are no significant social and ecological threats beyond measures such as technical estimates like LTIs and CO₂ emissions that need to be lowered, the psychological discomfort and uncertainty that local residents experience due to the oil production activities are no less real than LTIs. Thus, the distinction between the two approaches is not that of rationality or irrationality. Technical estimates *and* public perceptions as well as their antecedent processes are forms of knowledge defined by habitus. The first is 'formal' or professional (similar to Schultz's 2007 idea of professional habitus) and the second is 'informal.'

The question that remains is how to acknowledge and bridge these two knowledge fields. This bridging, if it occurs, would inure to the benefit of the business and local communities concerned. Despite the technical bias and lack of reflexivity that is inherent in Tullow's corporate sustainability efforts and communication, the results indicate the *potential* of such communication to constitute corporate actions. This makes it more important for Tullow Oil to step away from its narrow view of environmental health risks and corporate sustainability, and embrace a more expansive definition of risk, public

involvement, and public policy actions. The argument here is based on the view that “whoever controls the definition of risk [and responsibility] controls the rational solution to the problem at hand” (Slovic, 1999, p. 689). It is also based on the view that the constitutive powers of discourse may manifest in “discursive struggles between discourse actors,” for example, discourse between corporate actors and non-expert community-level stakeholders (Leitch & Motion, 2009, p. 563). Therefore, granting indigenous communities and residents greater control over the definition of the risk associated with the offshore oil production by adopting a broader engagement process and factoring in non-technical factors such as lived experiences and indigenous knowledge (see Satterfield, 2001; Satterfield, Gregory, Klain, Roberts, & Chan, 2013), would enhance the potential of corporate sustainability communication to constitute more desirable corporate behavior and change. The proposition here is further grounded in the two dimensions of the constitutive view of discourse: communication as reproductive and transformative (Fairclough, 1992). Leitch and Motion (2009) explicate these dimensions as follows:

The first is that the world—including the relations between people, the identities of individuals and organizations, and the social structures we populate—is reproduced through discourse. Reproduction is the conservative face of discourse, which leads to continuities of the status quo at all levels of society. The second dimension is that these same identities, relations and structures may also be transformed through discourse. Transformation is the creative face of discourse, which leads to the possibility of change. (p. 562-563)

In line with the first dimension, this study observes how Tullow’s corporate sustainability communication is used to reproduce established technical notions of environmental health risks associated with offshore oil production. And concerning the second, it observed how Tullow’s communication could transform its processes and

outcomes. However, if the transformation is solely constituted from within, the resulting change would be desirable but not orientated toward an expansive public policy objective.

A method for analyzing corporate sustainability communication. The third claim that can be made from the analysis of results is methodological and conceptual. The results demonstrate the compatibility of critical discourse analysis (CDA) in general and Reisigl and Wodak’s (2005, 2009) discourse-historical approach with the corporate sustainability framework (which focuses on Stakeholder Theory, Issues Management Theory, and Sustainable Development as a normative linchpin). As Table 47 shows, each subcategory of the CDA analytical tool aligns with particular components of the CSF. For example, “How are issues, social phenomena and objects nominated and discursively constructed?” aligns with the “issues identification/management” component of the CSF. Similarly, “How are social actors nominated and discursively constructed?” is linked to the “stakeholder identification/analysis/management” component of the CSF. And the issue of power (and responsibility), which is inherent to discourse analysis aligns with the normative basis of the CSF.

Table 47

Corporate Sustainability Framework and the Discourse Historical Approach

Corporate Sustainability Framework Component	Discourse Analysis Tool	Discursive Strategy
Stakeholder Theory	How are persons and social actors referenced or nominated?	Nomination or Referential Strategies
	What characteristics, features, and attributes are ascribed to the nominated social actors?	Predication Strategies

Issues Management	How are issues and social phenomena linguistically referred to?	Nomination or Referential Strategies
	What characteristics, features, and attributes are ascribed to the nominated issues and social phenomena?	Predication Strategies
Sustainable Development (Normative Theory)	Which arguments are employed in talking about corporate sustainability and environmental health risks?	Argumentation Strategies
	From what point of view are the nominations, attributions, and arguments expressed	Perspectivization

Risk Information and Communication Networks

Research Question 4 asked: “What are the formal and informal modes of risk attenuation and amplification?” The information networks of interest to this study include mass media, civil society groups, fishermen/fishermen association, and friendship ties. These questions were derived from the Social Amplification of Risk Framework (Kasperson et al., 2003; Kasperson et al., 1988; Renn, 1991), which *inter alia* says that information systems act like stereo receivers, amplifying risk issues.⁸³ Therefore, one way to analyze risk amplification or attenuation is to examine the secondary effects (i.e., behavioral responses, social changes, policy changes, etc.) that result from the actions and processes of risk information stations (e.g., media, opinion leaders, NGOs, institutions of state, etc.). It is complicated to establish such link between processes and outcomes.

However, in the SARF it is a given that a multiplicity of factors (including amplification stations, political culture, general risk culture, and psychological

⁸³ In this process, information systems (i.e., amplification systems) either *intensify* or *weaken* (or do both) *signals* that constitute the information individuals and social groups receive about risks. Alternative or in addition, information systems may amplify such issues through a process of “filtering signals with respect to the *attributes* of the risk and their *importance*” (Kasperson et al., 1988, p. 181).

mechanisms) (Renn, 1991) co-produce risk perceptions, behavioral responses, and social changes. Therefore, one way to study risk amplification is to simply examine how selected amplification stations (i.e., information networks) attempt to frame or construct risk events or issues within a given cultural context.

Research Question 4 uses this approach, supplemented by survey data to find out risk information networks people trusted and relied. With respect to where residents got information about the risks associated with the offshore oil production activities (i.e., potential risk amplification stations), television, ‘family and friends,’ radio, newspapers, and ‘government’ as an abstraction were the most cited media. Interestingly, in terms of trust, news media sources (including Internet)⁸⁴ were among the top four trusted sources of risk-related information.

Although ‘family and friends’ ranked highly (number 2) among the most utilized risk information network, it was the sixth most trusted risk information source. This finding regarding the use of ‘family and friends,’ despite its relatively low trustworthiness, runs contrary to much of the conventional position on trust and risk amplification (e.g., Slovic, 1999; Kahan et al., 2008; Shah, Kwak, Holbert; 2001). Therefore, ‘bad trust’ does not always make people eschew attending to or making use of an information station. Evidence from network studies offers some insight into what could be going on here. For example, Chow and Chan (2008), suggest that social network

⁸⁴ As reported in Chapter V, the five most trust information networks are Internet, radio, television, newspapers, and religions leaders. And the least most trusted (from bottom up) are the district assembly, Tullow, member of parliament, EPA, and traditional leaders. Thus, government agencies, representatives, Tullow and EPA were the least trusted sources.

ties have implications for people's volition to share information.⁸⁵ Indeed, information sharing is a two-way affair and therefore does not rule out information reception. Hence, the dissertation proposes that the strength of constant interactions that goes with relationships such as those between family and friends, and shared goals that may exist among these relations make it inevitable that people would communicate among themselves —*often*. Chow and Chan's study, for example, found that social trust had no direct effect on information sharing. And this lends some credence to the study's proposition that social capital by way of relational ties could mitigate the influence of bad credibility on the degree to which an individual relies on an amplification station for information (in this case, about environmental health risks in Ghana's offshore oil industry).

One amplification station that was also of interest to this study was Non-governmental Organizations (NGOs). Interestingly, NGOs were one of the least cited sources of risk-related information. A framing analysis of Friends of the Nation (a popular NGO working in this space) found that its advocacy strategy focused mainly on the view that offshore oil exploration was leading to the death of sea mammals such as whales. Since, "whale deaths" was one of the risks that the surveyed public were least concerned about, it is not surprising that NGOs in general were not cited as a major source of risk information. The analysis also revealed that FoN focused mainly on policy advocacy rather than community/public mobilization, which meant relatively little contact with ordinary residents. This raises the question of whether NGOs working in environmental decision-making are best served mobilizing the general public or seeking to directly

⁸⁵ Chow and Chan's (2008) study was concerned the implications social capital have for information sharing in organizational settings, but we can make similar hypothesis regarding information sharing in informal settings.

influence the policy agenda on their own. In democratic societies, public opinion is an essential catalyst of social change. Given evidence elsewhere that public perception of environmental health risks are important influences on policy and legislative agendas (e.g., Bakir, 2006; Slovic, 1999; Morgenstern & Sessions, 1988)—perhaps more than the influence of CSOs—a community mobilization and public engagement strategy when combined with direct policy advocacy would be more effective in shaping public policy regarding the petroleum production risksphere. And FoN’s strategy appears to acknowledge this fact. As a result, FoN attempts to shape policy makers’ perception of public opinion by attributing claims of ecological damage due to offshore oil exploration to local residents. However, a more direct communication mobilization and engagement strategy is likely to influence the public agenda, media agenda, and policy agenda.

Next, I discuss the findings about the extent to which people’s perceptions of Tullow Oil’s corporate sustainability mitigated or amplified their risk perceptions.

Finally, Research Question 5 asked: “Does perceived corporate sustainability attenuate or amplify people’s risk perceptions?” According to the SARF, people tend to perceive signals and their sources (and/or transmitters) as a single unit (Pidgeon et al., 2003; Kasperson et al., 1988; Renn, 1991). This makes them draw inferences about the other though they only have information about one. For example, people would draw inferences about Tullow (i.e., amplification station) based on the signals (regarding its corporate sustainability) it receives from the organization. In view of this, although a hypothesis was not posed regarding the direction of influence between corporate sustainability and risk perceptions, it was expected that a positive perceived corporate

sustainability would reflect in an amplified as opposed to attenuated risk perception and vice versa.

Contrary to expectations, the study found no link between perceived corporate sustainability, whether conceptualized as corporate leadership/stewardship or as community-based corporate responsibility, and general risk perceptions (i.e., ISM) or environmental concern. In the language of the SARF, it can be said that Tullow Oil's corporate sustainability was not acting as a risk "amplification station" *per se*. However, in line with the view that corporate trustworthiness and reliability are core attributes of 'responsible' corporations (e.g., Walsh & Beatty, 2007; Walsh, Beatty, & Shiu, 2009), it was found that persons who viewed Tullow as a reliable company perceived the risks associated with the offshore oil production as low and *vice versa*. But this result was true only when risk perceptions were measured as environmental concern, lending further support to the view that the way risks are defined and conceptualized is essential to research outcomes and by extension management and communication. Therefore, a first step toward proper risk management and communication would be to take a critical look at how risks are defined and adopt a multi-perspectival approach to addressing them. Because, "If risk is defined one way, then one option will rise to the top as the most cost-effective or the safest or the best" (Slovic, 1999, p. 689). Let us now situate the discussions and results within the broader debates and contentions within the risk communication and business and public policy fields.

The Problem of Business and Public Policy

Should business organizations perform public policy functions? This question and ancillary ones are still debated among academics, business practitioners, and investors. However, in situations such as petroleum exploration offshore Ghana's Western Region (the focus of this dissertation), where corporate actions are *potentially* harmful to the natural environment, livelihood of indigenes, and the general way of life of local communities, asking whether the focal firms have any public policy obligations becomes redundant. Stated differently, organizations whose actions and processes are putatively risky to the human-environmental ecosystem, which in our modern world applies to most companies, are necessarily drawing on and impacting what could be regarded as *public goods*. And in such instances, social responsibility goes beyond philanthropic activities, social programs, environmental management, and community engagement. It becomes a matter of justice for stakeholders, both animate and inanimate. This implies that risk mitigation, management, and communication become both ethical and functional imperatives. And as demonstrated in this study, Tullow Oil appears to address and communicate about its corporate sustainability issues from a technical standpoint—with minimal attention to popular perceptions and interpretations of these issues, demonstrating what Beck (1986, 1992) calls the undemocratic nature of science and technology decisions. (I return to this point later.)

A Case Against the Narrow View of Sustainability and Risk Communication

Writing about the development and evolution of risk communication, Heath and O’Hair (2009) explain how the history of risk communication accounts for why institutions that create and/or address technological risks tend to privilege official expertise and ‘explicit’ knowledge, which often view risks in terms such as probabilities and fatality estimates. They observe that:

Risk communication was largely created as a discipline whereby experts could be brought together with lay audiences to explain and compare risks. Once the lay audiences understood the science (scientists’ perspectives) and compared to other acceptable risk, their concern should be put into “proper perspective.” (p. 9)

Heath and O’Hair’s reflection exposes two things. The first is that the way risk analyses, management, and risk communication disciplines emerged did not pay attention to the inherent complexity in the concept of risk. And this has resulted in the “scientific hegemony of risk management and communication” (Heath & O’Hair, 2009, p. 9). Thus, although it is often said that public participation in environmental decision-making (and all areas of social change) is an imperative, the rhetoric does not often match the reality. The public —seen as irrational and lacking knowledge — is often reduced to irrational and uneducated subjects who need to be informed about putatively risky phenomena, with the goal to enhance their *understanding*. According to Heath and O’Hair (2009), this view aligns with the cultural archetype that one cannot make an omelet without breaking an egg. This archetype implies, for example, that environmental problems that accrue from ‘development imperatives’ such as economic activities like petroleum exploration and production are inevitable and should be tolerated.

The second, and related, point is that since “we cannot make an omelet without breaking an egg,” when individuals who are concerned about particular risks are made to see the benefits that could accrue from particular technologies or activities — in this case offshore petroleum production in Ghana — they would view the risks associated with those phenomena as tolerable and/or acceptable. Thus, the cultural archetype that we cannot make an omelet *and* keep our eggs intact in their shells, when applied as a guiding principle could help people *know* that “economic progress could not be achieved without some risks, which were knowable (especially in probabilistic terms), comparable, and manageable to a tolerable degree” (Heath & O’Hair, 2009, p. 9). These two observations manifest in the discourse surrounding corporate sustainability and environmental health risks in Ghana’s offshore oil industry.

However, this study argues that the concept of corporate sustainability presents us with the possibility that economic development in general and business profitability in this case *can* coexist with proper environmental health risk management and communication.⁸⁶ In line with this dissertation’s argument, a growing body of research contradicts the science/technical approach to risk management and communication. The classical economics, rational perspective on risk perceptions, which emerges from the narrow view of risk, is not an accurate reflection of how people — both lay and expert⁸⁷ — relate to risk and accompanying policies aimed at addressing them (see Kahan et al., 2009; Slovic, Fischhoff, & Lichtenstein, 1980; Slovic, 1999; Leiserowitz, 2006; Peters & Slovic, 1996). Decisions regarding which risks and what levels of risks are acceptable is

⁸⁶ Communication here is viewed as *a priori* and *a posteriori* to corporate sustainability. It constitutes and is constituted by corporate sustainability.

⁸⁷ In a 1995 study, Slovic et al. found that a group of toxicologists in Canada evaluated particular chemical risks in line with the worldviews to which they identify or belong.

therefore not a purely technical question that is in need of technical knowledge but a value question that requires reaching out to understand the role “non-technical” factors such as worldviews, ideology, and affect play in judgment and decision-making. Hence, technical estimates of risks and hazards are often not entirely useful in helping address public concerns, or even manage risks. Also, increased public information or risk communication does not necessarily result in desirable public attitudes and perceptions (e.g., Kahan, 2011). As this dissertation has demonstrated using both the survey and interviews, what people care about are not necessarily the things Tullow is preoccupied with. Cultural Theory of Risk and Social Amplification of Risk Framework, both of which offer broader policy perspectives for dealing with risk and corporate sustainability issues are useful tools that could yield more insights and success for Tullow, as well as the communities in which it operates. Let us now proceed to the problem of ‘responsibility’ and ‘risk.’

Risk and Responsibility: Two Sides of the Corporate Sustainability ‘Coin’

In a high-risk industry such as offshore petroleum production where environmental health risks potentially have dire consequences for both *business* and *public* interests,⁸⁸ there is the need to understand the bases of risk perceptions, corporate sustainability practices, and communication of these practices. As observed in Chapter I,

⁸⁸ Business and public interest are used here not to indicate which comes first. As I have argued elsewhere (Ofori-Parku, 2014), business interest precede public policy interests, but the former is not necessarily more important than the other. Not attending to one can deplete the other. For example, not properly managing environmental risks could lead to major accidents, which then result in losses. Conversely, not attending to core business priorities such as hiring highly qualified personnel or investing high quality equipment could lead to poor environmental management. Thus, business and public policy interests are best viewed in an integrated manner. They are mutually reinforcing.

in an industry such as petroleum exploration and production, corporate sustainability (a conception of corporate social responsibility) and risks are two sides of the same coin. Risks arise from corporate actions and processes, which the focal organization *ought* to be responsive to and responsible for. CSR communication in such industries is therefore also about risk communication. Risk and responsibility, I propose are two sides of the same coin. Naturally, offshore oil production as an economic activity gives rise to risks for which someone is responsible (descriptive aspect) and needs to be responsible (normative aspect). Thus, flipping the CSR-risk coin would accentuate the other, which means a more perceptive way to think about corporate responsibility in the oil industry (and extractive industries in general) is in terms of risk management and communication: *both* corporate risks and societal risks, and not just internal but external. Public risk perceptions and attitudes are important for understanding, deliberating about, and managing such risk, ergo ensuring corporate sustainability. For example, to illustrate how public perceptions of risk influence policy priorities and legislative agendas, Slovic (1999) notes how the EPA in the United States has in recent years assigned the bulk of its budget to cleaning up sites and dealing with hazardous wastes, much to the chagrin of technical experts because other household hazards such as indoor air pollution cause a lot more fatalities. The Corporate Sustainability Framework is a useful framework for analyzing and addressing risks and corporate accountability issues, especially in extractive industries and low-probability high-impact fields.

Limitations and Questions for Future Studies

This study has a number of limitations, resulting from its method and scope of data collection. The limitations discussed below also present future directions for research.

The first set of limitations is methodological, arising mainly from the exploratory nature of the current study. As stated in Chapter I, the researcher's search thus far has not revealed an application of any of the worldview measures (e.g., Dake, 1991; Dake & Wildavsky, 1990; Kahan, 2012) often used to measure cultural values that orient people's attitudes toward putatively risky phenomena or events. Therefore, this research set out by first testing Dan Kahan's CCWS⁸⁹ among a Ghanaian student sample. As explained in Chapter IV, student samples are not analogous to the population of interest (i.e., the semi-rural coastal community) to this research. But an earlier cultural cognition study conducted by the researcher using a student sample from a large university in the American Northwest (Ofori-Parku, 2013) found the scale to be a valid measure of cultural worldviews and a reliable predictor of risk perceptions among a student population. This notwithstanding, it is undeniable that a student sample is not representative of the entire Ghanaian population with literacy rate of 83 percent (The World Bank, 2015). Besides, although the analysis that resulted from the data collected manifested extremely high multicollinearity and singularity issues, a single scale test among a student population is not enough to conclude that the CCWS is not useful in an African (and Ghanaian) context. Therefore, there is the need to further test the scale among a larger, more

⁸⁹ Kahan's (2012) cultural cognition worldview scale was a preferred scale because, as discussed in Chapter II, it aligns with this study's conception of cultural worldviews as a continuum (with Individualism and Communitarianism as two ends; and Hierarchy and Egalitarianism as polar opposites) rather than four discrete worldview dimension.

representative African sample. On a related point, the Ghanaian version of the cultural cognition worldview scales developed and used in this study would require further testing and validation in order to fully establish its psychometric properties.

In addition, some of the scales tested and used in this study (e.g., sense of community measures) had only two items. Using single-item or two-item scales are of practical utility especially in situations where resource and time is constrained, and when it becomes necessary for poor quality items to be removed from a pool of items (Eisinga, te Grotenhuis, & Pelzer, 2012). In view of the exploratory nature of the study, the two-item scales used in this study are useful. And, for example, *general emotional tone* and *general sense of community* were two dimensions of the same construct — sense of community. However, true score theory suggests that having more items better represents constructs (Eisinga et al., 2012). Subsequent studies should take steps to improve these scales by expanding on the number of items. In addition, the data collected were often not normally distributed. This was not surprising since the study was dealing with a largely homogeneous population. As a result, the data were transformed before used for further analyses.

One finding that deserves further inquiry is the relationship between affect and perceived benefit/risks. For example, what underlies the fact that the affective rating of the first and last images associated with Tullow Oil had differential associations (negative and positive associations respectively) with perceived benefits/risks? And, why is affect inversely related to perceived benefits? Why is affect positively related to general risk perceptions regarding Ghana's offshore oil production contrary to the predominantly negative relationship between affect and risk perceptions in the literature? While for

example some form of optimism bias is suspected as being responsible for the positive relationship between affect and risk perception, future research could benefit from (a) replicating these results and (b) directly addressing these resulting questions.

Although this study makes inferences about risk amplification (and attenuation) based on people's responses about which information networks they frequently obtain information from about Ghana's offshore oil production, subsequent studies should systematically analyze the link between risk information stations and risk perceptions. Along the same lines, since "family and friends" featured prominently among the frequently used risk-related information stations, future studies would benefit from conducting a social network analysis of residents, observing the relationship between such social networks, risk perceptions, and perceived corporate sustainability.

Lastly, future studies should do a comparative analysis of Tullow Oil's corporate sustainability and that of other petroleum production and exploration multinationals operating in the African regions. Also, it would be interesting to obtain a longitudinal study view of corporate sustainability practices, communication, risk perception, and CSR perception. Especially, since A+ is the highest GRI application level, which Tullow has already attained, it would be interesting to observe the extent to which CSR communication continues to *constitute* (and constituted by) corporate actions and behaviors.

Concluding Words: On Risk, Corporate Sustainability, and Social Responsibility

This dissertation makes two points. The first is that in high-impact industries such as offshore oil production, where there is a lot more at *stake* than shareholder rights and interests, corporate responsibility (read corporate sustainability) also means risk

mitigation, including communication. Thus, being responsible also entails being able to mitigate, manage, and effectively communicate environmental health risks—real or unreal. The second point I make in this research is that relying solely on technical expert knowledge, underpinned by the allure of objective science and expert knowledge, for risk analysis, management, and communication misses one thing: the concept of risk is an inherently value laden concept and therefore cannot be examined and addressed in a purely scientific way. Hence, the technical approach to risk analysis which underlies much of Tullow's corporate sustainability efforts is flawed in its ability to fully capture the broad range of socio-cultural factors that affect how the public perceive and relate to environmental health risks. This is a view that is increasingly being shared by other risk analysis and risk communication scholars. To support this assertion, this dissertation has observed how a broad array of social and cultural factors (i.e., psychological sense of community, worldviews, affective imagery, and corporate trust) orient public attitudes toward environmental health and safety risks associated with Ghana's offshore oil production. Regarding the role of cultural values/worldviews in risk perceptions, this study has demonstrated that scales (e.g., Cultural Cognition Worldview Scale and Schwartz' World Values Scale) that have been used extensively in the West and found to have content and predictive validity are not necessarily valid measures when applied to African contexts. The development/adaptation and testing of worldview and perceived CSR measures moves closer to positioning the Cultural Theory and Cultural Cognition Model (in its current form) as a theory that transcends the Western world.

The study has also demonstrated how the corporate sustainability framework (CSF) can be applied to empirical work on communication research. And the historical

discourse analytical tool (Reisigl & Wodak, 2005, 2009) is a useful tool for analyzing how organizations constitute: (a) themselves and their processes as responsible or sustainable; (b) individual and stakeholder groups' rights and interests as being progressively pursued; (c) institutional stakeholders as people whose *high* standards are either being adhered to or will be adhered to; and (d) particular issues. Tullow's strategy and talk was deployed from a technical perspective, which despite its potential to result in desirable corporate actions, is too narrow to effectively address the complex nature of the concept of risk in general and the environmental health risks Ghana's nascent offshore oil production industry poses for local residents in the communities that adjoin the coastal districts. Besides, perceptions and public attitudes will depend on not just what Tullow is saying it is doing but also on what it is actually doing.

APPENDIX A

INFORMED CONSENT

For residents of Coastal Districts

You are being asked to participate in this research about corporate sustainability and risk perception related to Ghana's petroleum industry because as a resident of the Western Region we imagine that you have some thoughts to share about Ghana's emerging petroleum industry.

The purpose of this study is to: (a) find out what residents of six coastal districts surrounding Ghana's petroleum districts think about corporate sustainability practices of Tullow Oil (the operator of the Jubilee Field in Ghana, where petroleum resources are being explored); (b) find out how the residents perceive the economic, social and ecological risks associated with the exploration, and whether or not cultural values can be associated with variations in risk perceptions; (c) find out if Tullow Oil is doing something to mitigate the risks (and enhance benefits), and to see if what they are communicating about their corporate sustainability matches what they are saying; and (d) find out the role of media (including local journalists) and civil society organizations (CSOs) in ensuring corporate sustainability.

If you choose to participate, you will be answering interview questions on what you think about Tullow Oil's activities. You will also answer questions on how you perceive the risks associated with the petroleum exploration activities. I will be asking you some questions, and recording your responses on a voice recorder. The recording is to ensure that I am able to adequately and accurately capture your responses. The interview will last between 30 to 45 minutes.

As may be the case with most research, the only risk this research poses is the risk of breach of confidentiality and loss of privacy, but this is mitigated since we are not collecting your identifying and we are also restricting access to the data.

The records of this study will be kept private, and in any sort of report we may publish, we will not include any information that will make it possible to identify you.

The recordings will be stored on a password-protected disk, and will be discarded a year after the study. Access to the records will be limited to the researchers, and if necessary, the Institutional Review Board at the University of Oregon. All records will be destroyed a year after the research is completed. Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the School of Journalism and Communication. You are free to withdraw at any time, for whatever reason, in the course of the interview.

The researchers conducting this study are Professor Leslie Steeves and Mr. Senyo Ofori-Parku. If you have any questions about this study, please contact me oforipar@uoregon.edu.

Do you understand the information read out to you? If not feel free to ask any questions you may have. Do you give consent to participate in this study, and do you consent to this interview being recorded electronically? Your participation in this study will be an indication of your consent.

For CSOs

You are being asked to participate in this research about corporate sustainability and risks related to Ghana's petroleum industry because you work with a CSO that currently work in the petroleum industry. We imagine that you have some thoughts to share about how the industry is affecting inhabitants of local communities, what Tullow Oil has been doing/saying to mitigate the negative impacts and enhance benefits, and what role CSOs have been playing in ensuring corporate sustainability.

The purpose of this study is to: (a) find out what residents of six coastal districts surrounding Ghana's petroleum districts think about corporate sustainability practices of Tullow Oil (the operator of the Jubilee Field in Ghana, where petroleum resources are being explored); (b) find out how the residents perceive the economic, social and ecological risks associated with the exploration, and whether or not cultural values can be associated with variations in risk perceptions; (c) find out if Tullow Oil is doing something to mitigate the risks (and enhance benefits), and to see if what they are communicating about their corporate sustainability matches what they are saying; and (d) find out the role of media (including local journalists) and civil society organizations (CSOs) in ensuring corporate sustainability.

If you choose to participate, you will be answering interview questions on what you think about Tullow Oil's activities. You will also answer questions on whether or not Tullow Oil and the Jubilee partners are taking steps to mitigate the negative consequences of petroleum exploration, and what role CSOs have been playing in all of this. I will be asking you some questions and recording your responses on a voice recorder, if you grant me the permission to do so. The recording is to ensure that I am able to adequately and accurately capture your responses. The interview will last between 30 to 45 minutes.

As may be the case with most research, the only risk this research poses is the risk of breach of confidentiality and loss of privacy, but this is mitigated since we are not collecting your identifying and we are also restricting access to the data.

The records of this study will be kept private, and in any sort of report we may publish, we will not include any information that will make it possible to identify you. The recordings will be stored on a password-protected disk, and will be discarded a year after the study. Access to the records will be limited to the researchers, and if necessary, the Institutional Review Board at the University of Oregon.

All records will be destroyed a year after the research is completed. Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the School of Journalism and Communication. You are free to withdraw at any time, for whatever reason, in the course of the interview.

The researchers conducting this study are Professor Leslie Steeves and Mr. Senyo Ofori-Parku. If you have any questions about this study, please contact me at oforipar@uoregon.edu.

Do you understand the information read out to you? If not feel free to ask any questions you may have. Do you give consent to participate in this study, and do you consent to this interview being recorded electronically? Your participation in this study will be an indication of your consent.

For officials of Tullow Oil Ghana

You are being asked to participate in this research about corporate sustainability and risk communication/perception related to Ghana's petroleum industry because you're an official of Tullow Oil Ghana.

The purpose of this study is to: (a) find out what residents of six coastal districts surrounding Ghana's petroleum districts think about corporate sustainability practices of Tullow Oil (the operator of the Jubilee Field in Ghana, where petroleum resources are being explored); (b) find out how the residents perceive the economic, social and ecological risks associated with the exploration, and whether or not cultural values can be associated with variations in risk perceptions; (c) find out what Tullow Oil (as well as the Jubilee Field Partners) is doing to mitigate the economic, social and ecological risks (and enhance benefits) of resident in the six coastal districts around the oil region, and to ascertain the different ways you're communicating your corporate sustainability practices and efforts; and (d) find out the role of media (including local journalists) and civil society organizations (CSOs) in ensuring corporate sustainability.

If you choose to participate, you will be answering interview questions on your corporate sustainability policies and efforts, given that petroleum exploration is a high risk activity. I will be asking you some questions, and recording your responses on a voice recorder if you grant me the permission to do so. The recording is to ensure that I am able to adequately and accurately capture your responses. The interview will last between 30 to 45 minutes.

As may be the case with most research, the only risk this research poses is the risk of breach of confidentiality and loss of privacy, but this is mitigated since we are not collecting your identifying and we are also restricting access to the data.

The records of this study will be kept private, and in any sort of report we may publish, we will not include any information that will make it possible to identify you. The recordings will be stored on a password-protected disk, and will be discarded a year after the study. Access to the records will be limited to the researchers, and if necessary, the Institutional Review Board at the University of Oregon.

All records will be destroyed a year after the research is completed. Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the School of Journalism and Communication. You are free to withdraw at any time, for whatever reason, in the course of the interview.

The researchers conducting this study are Professor Leslie Steeves and Mr. Senyo Ofori-Parku. If you have any questions about this study, please contact me at oforipar@uoregon.edu.

Do you understand the information read out to you? If not feel free to ask any questions you may have. Do you give consent to participate in this study, and do you consent to this interview being recorded electronically? Your participation in this study will be an indication of your consent.

For Local Journalist

You are being asked to participate in this research about corporate sustainability and risks related to Ghana's petroleum industry because you're a journalist who has been reporting on Ghana's nascent petroleum industry. We imagine that you have some

thoughts to share about how the industry is affecting inhabitants of local communities, what Tullow Oil has been doing/saying to mitigate the negative impacts and enhance benefits, and what role journalists and mass media in general have been playing in ensuring corporate sustainability.

The purpose of this study is to: (a) find out what residents of six coastal districts surrounding Ghana's petroleum districts think about corporate sustainability practices of Tullow Oil (the operator of the Jubilee Field in Ghana, where petroleum resources are being explored); (b) find out how the residents perceive the economic, social and ecological risks associated with the exploration, and whether or not cultural values can be associated with variations in risk perceptions; (c) find out if Tullow Oil is doing something to mitigate the risks (and enhance benefits), and to see if what they are communicating about their corporate sustainability matches what they are saying; and (d) find out the role of media (including local journalists) and civil society organizations (CSOs) in ensuring corporate sustainability.

If you choose to participate, you will be answering interview questions on what you think about Tullow Oil's activities. You will also answer questions on whether or not Tullow Oil and the Jubilee partners are taking steps to mitigate the negative consequences of petroleum exploration, and what role you as a journalist have played in all of this. I will be asking you some questions and recording your responses on a voice recorder, if you grant me the permission to do so. The recording is to ensure that I am able to adequately and accurately capture your responses. The interview will last between 30 to 45 minutes.

As may be the case with most research, the only risk this research poses is the risk of breach of confidentiality and loss of privacy, but this is mitigated since we are not collecting your identifying and we are also restricting access to the data.

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The researchers conducting this study are Professor Leslie Steeves and Mr. Senyo Ofori-Parku. If you have any questions about this study, please contact me at oforipar@uoregon.edu.

Do you understand the information read out to you? If not feel free to ask any questions you may have. Do you give consent to participate in this study, and do you consent to this interview being recorded electronically? Your participation in this study will be an indication of your consent.

For Civil Society Organization

You are being asked to participate in this research about corporate sustainability and risks related to Ghana's petroleum industry because you work with a CSO that

currently work in the petroleum industry. We imagine that you have some thoughts to share about how the industry is affecting inhabitants of local communities, what Tullow Oil has been doing/saying to mitigate the negative impacts and enhance benefits, and what role CSOs have been playing in ensuring corporate sustainability.

The purpose of this study is to: (a) find out what residents of six coastal districts surrounding Ghana's petroleum districts think about corporate sustainability practices of Tullow Oil (the operator of the Jubilee Field in Ghana, where petroleum resources are being explored); (b) find out how the residents perceive the economic, social and ecological risks associated with the exploration, and whether or not cultural values can be associated with variations in risk perceptions; (c) find out if Tullow Oil is doing something to mitigate the risks (and enhance benefits), and to see if what they are communicating about their corporate sustainability matches what they are saying; and (d) find out the role of media (including local journalists) and civil society organizations (CSOs) in ensuring corporate sustainability.

If you choose to participate, you will be answering interview questions on what you think about Tullow Oil's activities. You will also answer questions on whether or not Tullow Oil and the Jubilee partners are taking steps to mitigate the negative consequences of petroleum exploration, and what role CSOs have been playing in all of this. I will be asking you some questions and recording your responses on a voice recorder, if you grant me the permission to do so. The recording is to ensure that I am able to adequately and accurately capture your responses. The interview will last between 30 to 45 minutes.

As may be the case with most research, the only risk this research poses is the risk of breach of confidentiality and loss of privacy, but this is mitigated since we are not collecting your identifying and we are also restricting access to the data.

The records of this study will be kept private, and in any sort of report we may publish, we will not include any information that will make it possible to identify you. The recordings will be stored on a password-protected disk, and will be discarded a year after the study. Access to the records will be limited to the researchers, and if necessary, the Institutional Review Board at the University of Oregon.

All records will be destroyed a year after the research is completed. Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the School of Journalism and Communication. You are free to withdraw at any time, for whatever reason, in the course of the interview.

The researchers conducting this study are Professor Leslie Steeves and Mr. Senyo Ofori-Parku. If you have any questions about this study, please contact me at oforipar@uoregon.edu.

Do you understand the information read out to you? If not feel free to ask any questions you may have. Do you give consent to participate in this study, and do you consent to this interview being recorded electronically? Your participation in this study will be an indication of your consent.

APPENDIX B
INTERVIEW GUIDE

Local Residents

Has the petroleum related activities affected your social life in any ways? How?

Has the petroleum related activities affected the natural environment in any ways? How?

Has the petroleum related activities affected the your economic livelihoods in any ways?
How?

Would you say you have benefited in any way from the petroleum related activities?
How?

Would you say there are some (social, economic and environmental) risks associated with petroleum industry? How would you describe these risks? [ask social, economic, environmental risks one at a time]

What comes to mind when you think about Tullow Oil?

How do you feel about Tullow Oil?

How do you receive information on the risks associated with this industry?

Do you trust Tullow Oil to do the right thing? Why?

Do you trust the government to do the right thing? Why?

Do you trust CSOs working in this area to ensure that the right thing is done?

Do you trust journalists and the media to ensure that the right thing is done?

Is there anyone you often talk to about the problems effects of the petroleum production activities?

Tullow Oil Officials

Would you say the petroleum related activities affected the social lives of persons residing in the communities surrounding the petroleum production region? How?

Would you say the petroleum related activities have affected the natural environment in any way? How?

Would you say the petroleum related activities have affected the economic livelihoods of persons residing in the communities that around the petroleum production region? How?

What policies have you put in place to mitigate the negative effects? Follow up: What are you doing to mitigate these effects?

What are your considerations for engaging in these activities? Do journalists, CSOs, government, etc. play a role here?

Would you say there are some (social, economic and environmental) risks associated with petroleum industry?

How would you describe these risks? [ask social, economic, environmental risks one at a time]

Do you have any mechanisms in place to ensure that people learn about these risks?

Do you have any mechanisms in place to ensure that people learn about your corporate sustainability efforts and practices? What are they? Or, why not?

How would you describe public perception that petroleum activities are affecting: their livelihoods, social life, and the natural environment?

Would you say you have benefited in any way from the petroleum related activities? How?

Interview Guide: Journalists and CSOs

Would you say the petroleum related activities affected the social lives of persons residing in the communities surrounding the petroleum production region? How?

Would you say the petroleum related activities have affected the natural environment in any way? How?

Would you say the petroleum related activities have affected the economic livelihoods of persons residing in the communities that around the petroleum production region? How?

Do you know of any policies and interventions that have been put in place to mitigate the negative effects? Follow up: What are Tullow Oil currently you doing to mitigate these effects?

What would you say are Tullow Oil's considerations for engaging in these activities?

What role have you [as a journalist or CSO] played in all of this?

Would you say there are some (social, economic and environmental) risks associated with petroleum industry?

How would you describe these risks? [ask social, economic, environmental risks one at a time]

Do you know of any mechanisms that have been put in place to ensure that people learn about these risks?

Does Tullow Oil have any mechanisms in place to ensure that people learn about their corporate sustainability efforts and practices? What are they?

How would you describe public perception that petroleum activities are affecting: their livelihoods, social life, and the natural environment?

Would you say you have benefited in any way from the petroleum related activities?
How?

APPENDIX C

COMPLETE WORDING OF SCALE ITEMS

Psychological Sense of Community Measure

Anchor: *On a scale of 1-7 (i.e., Strongly Disagree to Strongly Agree) how strongly do you agree or disagree with each of these statements about you and this community?*

Emotional Attachment to Community

1. I feel good about this community
2. I feel strongly about this community

Sense of Community

1. I think that this community is a good place to live
2. I feel I matter in this community

Integration

1. I have lived in this community for a long time
2. I get along with people in this community
3. Most of my neighbors recognize me in this community

General Cultural Preservation Measure

Anchor: *On a scale of 1-7, rate the importance of ___ as your life-guiding principle?*

1. Environmental protection
2. Tradition (respect for tradition)
3. Conformity (obedience, honoring parents and elders)
4. Security (national security, family security, social order)

Ghanaian Cultural Cognition Worldview Scale

Anchor: *On a scale of 1-7 (Strongly Disagree to Strongly Agree), how strongly do you agree or disagree with each of these statements?*

Attitude toward Government Regulation of Corporate Behavior (Group)

1. Government needs to make laws that keep corporations from harming people in this community
2. Government needs to make laws that keep corporations from harming people in this community
3. Government needs to make laws that keep corporations from harming the natural environment in this community

Attitude toward Business Autonomy (Group)

Anchor: *On a scale of 1-7 (Strongly Disagree to Strongly Agree), how strongly do you agree or disagree with each of these statements?*

1. Businesses should be allowed to do whatever they want to people without governments' interference
2. Businesses should be allowed to do whatever they want to the natural environment without governments' interference
3. Businesses should be allowed to do whatever they want to local communities without governments' interference

Attitude toward Equity and Fairness (Grid)

Anchor: *On a scale of 1-7 (Strongly Disagree to Strongly Agree), how strongly do you agree or disagree with each of these statements?*

1. It is unfair to stop people from farming at paces they used to farm
2. It is unfair to stop people from trading where they used to trade
3. It is unfair for strangers to own land in this community while indigenes cannot afford any
4. It is unfair for strangers to own land in this community while indigenes cannot afford any
5. It is unfair for strangers to have jobs in this community while indigenes have no jobs
6. Our society would be better off if the distribution of wealth was more equal

Oil Production Benefit Perception

Anchor: *On a scale of 1-7 (Strongly Disagree to Strongly Agree), indicate your level of agreement to the following?*

1. The benefits of the petroleum production are likely to be very large
2. On the whole, the benefits of the petroleum production will outweigh the risks
3. The offshore petroleum production will improve our health
4. The offshore petroleum production will improve our economic well-being

Concerns about Offshore Oil Production

Anchor: *On a scale of 1-7 (with 1 being 'Not at all concerned' and 7 meaning 'extremely concerned'), how concerned are you that Ghana's offshore petroleum production could lead to _____*

Environmental risk/concern

1. Oil spill
2. CO₂ emission
3. Depleting fish stock
4. Contamination of fish

Economic Risk/Concern

1. Unemployment
2. Alienation of locals from the industry
3. Fishermen's loss of livelihood
4. Fishmongers' loss of livelihood
5. Farmers' loss of livelihood
6. High land costs
7. High cost of living
8. High cost of rent and accommodation

Social Risk/Concern

1. Diseases in local communities
2. Violence and armed conflicts

Industrial Strength Risk Perception Measure (ISM)

On a scale of 1-7 with 1 being 'no risk at all' and 7 meaning 'very risky,' how much risk does Ghana's offshore petroleum production pose for...

1. the Ghanaian society as a whole?
2. this community as a whole?
3. the environment, human health, safety, or prosperity of this country?
4. the environment, human health, safety, or prosperity of this community?

CSR Perception/Corporate Reputation

Anchor: On a scale of 1-7, to what extent do you agree with these statements about Tullow Oil?

Corporate Leadership and Stewardship

1. It seems to have excellent leadership
2. It seems to be environmentally responsible
3. It seems it to ensure a clean environment
4. It supports development projects

Community-based Corporate Reputation

1. It has employees who treat local communities courteously
2. It treats its local communities fairly

Corporate Trust (Reliability)

Anchor: On a scale of 1-7, what is your level of agreement to the following statements about how much you trust Tullow Oil?

1. I trust this company
2. I have great confidence in this company
3. This company has high integrity
4. I can depend on this company to do the right thing
5. This company can be relied upon

Support for Oil Production as a Development Imperative

Anchor: *On a scale of 1-7 with 1 being 'I don't agree at all' and 7 being 'I very much agree, please indicate your level of agreement to the following.*

1. Offshore petroleum production is necessary to meet the nation's development needs
2. Offshore petroleum production is necessary to meet the community's development needs
3. Offshore petroleum production is necessary to meet the community's development needs
4. Offshore petroleum production is necessary to meet the community's energy needs

Behavior Intentions

Anchor: *On a scale of 1-7, with 1 being 'Least' and 7 meaning 'Most;*

Participation in Oil Spill Response Action

1. How *likely* are you to participate in an oil spill response action, if an emergency occurs?
2. How *willing* are you to participate in oil spill response action, if an emergency occurs?
3. How *often* would you participate in oil spill response action, in case of emergency?

Fishing Near the Oil Rig

1. How *likely* are you to fish near the oilrig?
2. How *willing* are you to fish near the oilrig?

Advocating against Fishing Near Oil Rig

1. How *likely* are you to advise someone not to fish near oilrig?
2. How *willing* are you to advise someone not to fish near oilrig?
3. How *often* would you advise someone not to fish near the oilrig?

Protesting against Tullow

1. How *likely* are you to support a demonstration against Tullow Oil's (and Jubilee Partners) handling of its social and environmental impacts?
2. How *willing* are you to support a demonstration against Tullow Oil's (and Jubilee Partners) handling of its social and environmental impacts?
3. How *often* would you support demonstrations against Tullow Oil's (and Jubilee Partners) handling of its social and environmental impacts?

APPENDIX D
QUESTIONNAIRE

Introduction

This study is being undertaken by researchers from the University of Oregon. The following questions will help us understand some important things about you, your community, and offshore petroleum production activities. We will hold all information securely and your identity will not be revealed when we compile results. Answering our questions is voluntary and you have the right to request the interviewer to stop at any stage. The interview would take about 40 minutes. Thank you very much for your help.

Interviewee ID: _____

Date: _____

Duration: _____

Interviewer name: _____

A. Demographic Information

1. Gender (circle): Male Female
2. Age (if known exactly): _____ Age (if estimated): _____
3. Ethnic group: _____
4. First language: _____ Other languages: _____
5. Marital status (Circle): Single/never married Married
Divorced/separated/widowed
6. Main occupation: _____ Other occupations: _____
7. Speaks English? (Circle): Yes No
8. Education (circle): Never Primary school SHS graduate or less
Some college/HND Bachelors Graduate school
9. How long have you lived in this place?: _____
10. Where was the last place you lived before coming here?: _____

B. Attachment to Community

On a scale of 1-7 (i.e. Strongly Disagree to Strongly Agree) how strongly do you agree or disagree with each of these statements about you and this community?

1	I feel good about this community	
2	I feel strongly about this community	
3	I think that this community is a good place to live	
4	I feel I matter in this community	
5	I hope to live in this community for a long time	

6	I have lived in this community for a long time	
7	I get along with people in this community	
8	Most of my neighbors recognize me in this community	
9	I know most of the people in this community	

C. Schwartz Value Scale

On a scale of 1-7, rate the importance of ___ as your life-guiding principle...

1	Power (social power, authority, wealth)	
2	Achievement (success)	
3	Hedonism (enjoyment in life, self-indulgence)	
4	Stimulation (daring, varied and challenging life, exciting life)	
5	Self-direction (freedom, independence, choosing one's own goals)	
6	Universalism (environmental protection)	
7	Benevolence (helpfulness)	
8	Tradition (respect for tradition)	
9	Conformity (obedience, honoring parents and elders)	
10	Security (national security, family security, social order)	

D. Group or Individualism-Communitarianism (reverse code "C" items)

On a scale of 1-7 (i.e. Strongly Disagree to Strongly Agree), how strongly do you agree or disagree with each of these views about government's role in society?

1	The government should do more to help us in this community.	
2	Government needs to make laws that keep corporations from harming people in this community.	
3	Government needs to make laws that keep corporations from harming the natural environment in this community	
4	Government needs to make laws that keep corporations from harming local communities	
5	Businesses should be allowed to do whatever they want to people without governments' interference	
6	Businesses should be allowed to do whatever they want to the natural environment without governments' interference.	
7	Businesses should be allowed to do whatever they want to local communities without governments' interference.	
8	Government has no business protecting people from harm while they are at sea.	
9	Government has no business protecting people from harm while they are in their farms.	
10	People should be able to fish wherever they want to without governments' interference.	
11	People should be able to farm wherever they want to without governments' interference	

12	People should be able to trade wherever they want to without governments' interference	
13	Too many laws & regulations have stopped us from effective trading in this community	
14	Too many laws & regulations have stopped us from effective fishing in this community	

E. Grid or Hierarchy-Egalitarianism (reverse code "E" items)

On a scale of 1-7 (Strongly Disagree to Strongly Agree), how strongly do you agree or disagree with each of these statements?

1	It is unfair to stop people from fishing at places they used to fish	
2	It is unfair to stop people from farming at paces they used to farm	
3	It is unfair to stop people from trading where they used to trade	
4	It is unfair for strangers to own land in this community while indigenes cannot afford any.	
5	It is unfair for strangers to have jobs in this community while indigenes have no jobs	
6	Our society would be better off if the distribution of wealth was more equal	
7	If an elderly person instructs me to fish in a government-restricted area I will obey	

F. Views of Social Relations

On a scale of 1-7 (Strongly Disagree to Strongly Agree), how strongly do you agree or disagree with the following statements?

1	The most important thing in life is to get rich and be successful	
2	In our society, people should show more respect for institutions and laws	
3	If people were treated in a more equal way, we would have less problems	
4	One lives better if one does not trust anyone	

G. Feelings

1. Have you ever heard of Tullow Oil? [What is it?] (Circle): Yes or No
[If respondent doesn't know Tullow Oil, note this and ask general questions about *the company operating the oil field*]
2. Think about "Tullow Oil" for a moment. When you hear the words "Tullow Oil," what is the first word or image that comes to mind? _____
3. What is the next image that comes to mind when you think of "Tullow Oil"?

4. A final image associated with "Tullow Oil"? _____
5. Rate each image you gave on a scale ranging from 1 (*very negative*), 2 (*negative*), 3 (*neutral*), 4 (*positive*), to 5 (*very positive*). _____, _____,

6. Think about Ghana's "offshore petroleum production" for a moment. When you hear the words "offshore petroleum production," what is the first word or image that comes to mind? _____
7. What is the next image that comes to mind? _____
8. A final word or image associated with Ghana's "offshore petroleum production"?

9. Rate each image you gave on a scale ranging from **1 (Very negative)**, **2 (negative)**, **3 (neutral)**, **4 (positive)**, to **5 (very positive)**. _____
10. Overall, how do you feel about the offshore oil production? Scale : 1 (Very Negative) to 5 (Very Positive) _____

H. Oil Production Benefits

On a scale of 1-7 (Strongly Disagree to Strongly Agree), indicate your level of agreement to the following...

1	The benefits of the petroleum production are likely to be very large	
2	On the whole, the benefits of the petroleum production will outweigh the risks	
3	The offshore petroleum production will improve our health.	
4	The offshore petroleum production will improve our economic well-being	

I. Risk Concerns

On a scale of 1-7 (with 1 being 'Not at all concerned' and 7 meaning 'extremely concerned'), how concerned are you that Ghana's offshore petroleum production could lead to

Environmental risks/concerns:		
1	Environmentally unsafe production	
2	Oil spill	
3	CO ₂ emission	
4	Gas flaring	
5	Whales dying	
6	Depleting fish stock	
7	Contamination of fish	
8	Growing sea weeds	

Economic risks/concerns:		
1	Inadequate monetary flows to the public sector	
2	Unemployment	
3	Alienation of locals from the industry	
4	Fishermen's loss of livelihood	
5	Fishmongers' loss of livelihood	
6	Farmers' loss of livelihood	
7	High land costs	
8	High cost of living	
9	High cost of rent and accommodation	

<i>Social risks/concerns:</i>		
1	Diseases in local communities	
2	Poor labour standards	
3	Corruption and bribery	
4	Violence and armed conflicts	
5	Lack of social order	

J. Industrial Strength Risk Perception

On a scale of 1-7 with 1 being 'no risk at all' and 7 meaning 'very risky,' how much risk does Ghana's offshore petroleum production pose for...

1	the Ghanaian society as a whole?	
2	this community as a whole?	
3	the environment, human health, safety, or prosperity of this country?	
4	the environment, human health, safety, or prosperity of this community?	

K. General Risk Perception

On a scale of 1-7 with 1 being 'no risk at all' and 7 meaning 'very risky,' how much risk does _____ pose the Ghanaian society as a whole?

1	Ebola	
2	Cholera	
3	Malaria	
4	HIV/AIDS	
5	Climate change	
6	Vehicle accidents	
7	Armed conflicts	
8	Abortion	
9	Homosexuality	
10	Cigarette smoking	

L. Trust

(i)

1. Generally speaking, would you say that most people could be trusted (Circle)?
[Yes; No]
2. Generally speaking, would you say that most institutions could be trusted?
[Yes; No]

(ii) How would you rate your level of trust for the following entities to give you the right information about the offshore petroleum production activities? [Scale: 1 to 7]

1	Environmental Protection Agency	
2	TV	
3	Radio	
4	Newspapers	

5	Internet	
6	NGOs	
7	The District Assembly	
8	Tullow Oil	
9	Government	
10	Town Hall Meetings	
11	Traditional Leaders (chiefs, etc.)	
12	Assembly Members	
13	Religious Leaders	
14	Regional Minister	
15	Fishermen Association	
16	Member of Parliament	
17	Family and Friends	

M. Community Based Corporate Reputation/ CSR Perception

On a scale of 1-7, to what extent do you agree with these statements about Tullow Oil? [If respondent doesn't know Tullow Oil, note this and ask general questions about *the company operating the oil field*]

1	It has employees who treat local communities courteously	
2	It has employees who are concerned about local community needs	
3	It is concerned about the local communities they operate in	
4	It treats its local communities fairly	
5	It takes the rights of local communities seriously	
6	It seems to care about all of its community members	
7	It looks like a good company to work for	
8	It seems to treat its people well	
9	It seems to have excellent leadership	
10	It seems to recognize and take advantage of market opportunities	
11	It looks like it has strong prospects for future growth	
12	It is a strong company	
13	It offers high quality services	
14	It seems to make an effort to create new jobs	
15	It seems to be environmentally responsible	
16	It seems it to ensure a clean environment	
17	It supports development projects	
18	It is a reliable company	

N. Corporate Trust (*Tullow Oil or Company Operating the Oil Field*)

On a scale of 1-7, what is your level of agreement to the following statements about how much you trust Tullow Oil?

1	I trust this company	
2	I have great confidence in this company	
3	This company has high integrity	
4	I can depend on this company to do the right thing	
5	This company can be relied upon	

O. Personal Experience

1. Have you ever benefited from Tullow Oil? YES or NO. If YES, in what way?

2. Have you ever participated in any Tullow Oil training program? YES or NO. If YES, what training? _____
3. Do you know anyone who has benefited from Tullow Oil? YES or NO. If YES, who? _____
4. Do you belong to any groups or associations in this community? YES or NO. If yes, list: _____
5. How would you characterize your level of **knowledge** about the environmental and societal risks associated with offshore petroleum production? 1 (Very little) to 7 (A great deal) _____
6. Have you been personally affected by the offshore petroleum production activities? YES or NO. If YES, in what way? _____

P. Information Sources

(i)

1. What is your **major** source of information about the effects/risks of the offshore petroleum production activities in this community? _____
2. How do you get (general) information about the other issues in this community?

(ii) Do you get information about the risks of offshore petroleum activities from these sources?

1	Environmental Protection Agency	
2	TV	
3	Radio	
4	Newspapers	
5	Internet	
6	NGOs	
7	The District Assembly	
8	Tullow Oil	
9	Government	
10	Town Hall Meetings	
11	Traditional Leaders (chiefs, etc.)	
12	Assembly Members	
13	Religious Leaders	
14	Regional Minister	
15	Fishermen Association	

16	Member of Parliament	
17	Family and Friends	

Q. Support for Offshore Petroleum Production

On a scale of 1-7 with 1 being ‘I don't agree at all’ and 7 being ‘I very much agree, please indicate your level of agreement to the following...

1	Offshore petroleum production is necessary to meet the nation’s development needs	
2	Offshore petroleum production is necessary to meet the community’s development needs	
3	Offshore petroleum production is necessary to meet the nation’s energy needs	
4	Offshore petroleum production is necessary to meet the community’s energy needs	
5	How much do you agree with the petroleum industry’s view that it is now possible to engage in offshore oil production that will have little effect on the environment?	

R. Behavior Intention

On a scale of 1-7, with 1 being ‘Least’ and 7 meaning ‘Most, ...

1	How <i>likely</i> are you to participate in an oil spill response action, if an emergency occurs?	
2	How <i>willing</i> are you to participate in oil spill response action, if an emergency occurs?	
3	How <i>often</i> would you participate in oil spill response action, in case of emergency?	
4	How <i>likely</i> are you to fish near the oilrig?	
5	How <i>willing</i> are you to fish near the oilrig?	
6	How <i>often</i> would you fish near the oilrig?	
7	How <i>likely</i> are you to advise someone not to fish near oilrig?	
8	How <i>willing</i> are you to advise someone not to fish near oilrig?	
9	How <i>often</i> would you advise someone not to fish near the oilrig?	
10	How <i>likely</i> are you to support a demonstration against Tullow Oil’s (and Jubilee Partners) handling of its social and environmental impacts?	
11	How <i>willing</i> are you to support a demonstration against Tullow Oil’s (and Jubilee Partners) handling of its social and environmental impacts?	
12	How <i>often</i> would you support demonstrations against Tullow Oil’s (and Jubilee Partners) handling of its social and environmental impacts?	

S. Additional Demographic Information

1. How religious are you? 1 (Very little) to 7 (A great deal)
2. Religion: _____
3. How many times did you attend a religious event the past week? _____
4. I lean more towards 1(NDC)... 7 (NPP) _____
5. If elections were held today, I would vote for: _____

APPENDIX E
LIST OF ACRONYMS

- BI:** Behavior Intention
- CCWS:** Cultural Cognition Worldview Scale
- CDA:** Critical Discourse Analysis
- CDM:** Clean Development Mechanism
- CED:** Committee of Economic Development
- CER:** Certified Emission Reduction
- CHIP:** Community-based Health Planning and Services Initiative
- CR:** Corporate Responsibility
- CSO:** Civil Society Organization
- CSP:** Corporate Social Performance
- CSR:** Corporate Social Responsibility
- CS:** Corporate Sustainability
- CSF:** Corporate Sustainability Framework
- CT:** Cultural Theory (of Risk)
- DCE:** District Chief Executive
- DHA:** Discourse Historical Approach
- E&P:** Exploration and Production
- EIA:** Environmental Impact Assessment
- EITI:** Extractive Industries Transparency Initiative
- ESIA:** Environmental and Social Impact Assessment
- ETS:** Emission Trading Scheme

EU: European Union

FoN: Friends of the Nation (non-governmental organization)

FPSO: Floating Production, Storage, and Offloading Unit

GCCWS: Ghanaian Cultural Cognition Worldview Scale

GHGs: Greenhouse Gases

GNPC: Ghana National Petroleum Corporation

GRI: Global Reporting Initiative

HIPOs: High Potential Incidents

IMS: Integrated Management System

ISM: Industrial Strength (Risk Perception) Measure

ISO: International Organization for Standardization

KMO: Kaiser-Meyer-Olkin

KPI: Key Performance Indicators

LTI: Lost Time Injury

LTIFR: Lost Time Injury Frequency Rate

NGOs: Non-governmental Organization

OGP: International Association of Oil and Gas Producers

PAF: Principal Axis Factoring

PCA: Principal Component Analysis

PCSM: Perceived Corporate Sustainability Measure

PIAC: Public Interest and Accountability Committee

PSoC: Psychological Sense of Community Measure

SARF: Social Amplification of Risk Framework

UN: United Nations

UNFCC: United Nation Framework Convention on Climate Change

WVS: World Values Scale

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