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Claremont McKenna College

**Coastal Environmental Policies and Water:
Environmental Values in Ghana and Senegal**

submitted to
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and
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by
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for
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ABSTRACT

This thesis provides a comparative analysis of the environmental values present in Ghana's and Senegal's coastal regions, and the implications that those have for the surrounding environment. The countries approaches to urban farming, mining and oil and gas extraction, fishing, marine debris and municipal waste management are assessed in order to reach a greater understanding of these environmental issues. In undertaking this thesis, I attempted to draw a correlation between the handling of these issues and how people perceive their environment. Through the comparison of environmental degradation and the level of effort to achieve a more sustainable developmental framework in both countries, I draw examples from successes in Senegal's coastal management framework to recommend appropriate environmental policy for the Greater Accra Region.

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Introduction

Growing urbanization, globalization and weak governance pose major threats to the environment. The coastal region of Ghana has experienced high levels of settlement, economic activity, and human impact largely in the form of traditional farming and fishing, large-scale industrial activities, and newer sources of economic development such as historical and ecological tourism. In the central region of Ghana, beachfront development is rising, which may bring environmental pressure. “Ghana’s coastal zone is plagued by a number of socioeconomic as well as environmental problems. Issues such as increasing population, urbanization and poverty, the loss of habitat and land through coastal erosion, wetland and mangrove degradation, fisheries degradation and declining fish stocks and poor sanitation worsen daily.”¹ Ghana is faced with deforestation, overgrazing, soil erosion, poaching and wildlife destruction, water pollution, inadequate supplies of potable water and recurrent drought.² Increasing infrastructure development and population growth has resulted in a land “squeeze situation.” This occurs when the shoreline and the “humanline” are competing for space along the coast. Serious environmental degradation could result from this struggle for space, directly and immediately affecting the oceanic system³. In addition to population growth, farming has

¹ Lawson, Elaine, Wolfgang Schluchter, and Chris Gordon. 2010. Using the Paired Comparison Methodology to Assess Environmental Values in the Coastal Zone of Ghana. *Journal of Coastal Conservation* 14 (3) (September): 232.

² Central Intelligence Agency. The World Fact Book: Ghana. Available from <https://www.cia.gov/library/publications/the-world-factbook/geos/gh.html> (accessed April 13, 2014).

³ Addo, Kwasi. 2012. Shoreline Morphological Changes and the Human Factor. Case Study of Accra, Ghana. *Journal of Coastal Conservation* (October): 85-91.

a significant contribution to the challenges of urban water management, sanitation and health services. Urban agriculture in the Greater Accra Region, Ghana's capital, results in unsanitary conditions and public health risks through runoff and the use of human waste as fertilizer for crops. The generation of waste in Accra is growing rapidly with the population, resulting in choked drains, overflowing garbage heaps, littered pavements and polluted streams⁴. To many developing countries, the supply of human waste residents produce exceeds the capacity of treatment facilities. "More than 85 per cent of wastewater and fecal sludge that is generated every day is discharged into seldom desludged and usually leaking septic tanks or straight into the environment without any effective collection, treatment or disposal."⁵ Poor functioning of treatment plants due to broken pumps, lack of funds and institutional capacity challenges due to the decentralization of the sanitation sector are partly to blame⁶. However, if functioning properly, Accra's sewerage systems and wastewater treatment plants only treat 5-7 per cent of Accra's population⁷ with the rest of the collected fecal sludge being dumped into

⁴ Accra Metropolitan Assembly. Accra, Ghana, 2015. Available from <http://ama.ghanadistricts.gov.gh/> (accessed April 25, 2015).

⁵ Lydecker, Mary, and Pay Drechsel. 2010. Urban Agriculture and Sanitation Services in Accra, Ghana: The Overlooked Contribution. *International Journal of Environmental Sustainability* 8 (1/2): 94-103.

⁶ Central Intelligence Agency. The World Fact Book: Ghana. Available from <https://www.cia.gov/library/publications/the-world-factbook/geos/gh.html> (accessed April 13, 2014).

⁷ Obuobie, E., Keraita, B., Danso, G., Amoah, P., Cofie, O.O., Raschid-Sally, L. and P. Drechsel. 2006. Irrigated urban vegetable production in Ghana: Characteristics, benefits and risks. IWMI-RUAF-CPWF, Accra, Ghana: IWMI, 150 pp.

the ocean⁸. The proximity of the Greater Accra region to the shoreline increases the effects that environmental issues on land have on the neighboring ocean. “Coastal urban growth contributes to residential effluent, industrial discharges, storm-water run-off, agricultural and mining leaching, contaminated groundwater seepage, and industrial and vehicle exhaust fumes that enter the marine environment.”⁹ These problems persist partly due to constraints such as limited scientific data on coastal and marine ecosystems, human resources, and equipment and funding. In addition, the majority of legislative and policy interventions set out to manage coastal natural resources have proven to be inadequate¹⁰.

Senegal’s capital city, Dakar, situated on the most western tip of Africa is a significantly more progressive case of coastal management compared to Accra. This thesis uses Dakar as a model for environmental improvement and successful policy efforts in order to suggest environmental policies for the Greater Accra Region. The comparison of Accra and Dakar is relevant due to several similarities between the two coastal regions, such as colonial history, geographic location and economic status. The contemporary environmental issues in Dakar are wildlife populations threatened by

⁸ Lydecker, Mary, and Pay Drechsel. 2010. Urban Agriculture and Sanitation Services in Accra, Ghana: The Overlooked Contribution. *International Journal of Environmental Sustainability* 8 (1/2): 94-103.

⁹ United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 4.

¹⁰ Lawson, Elaine, Wolfgang Schluchter, and Chris Gordon. 2010. Using the Paired Comparison Methodology to Assess Environmental Values in the Coastal Zone of Ghana. *Journal of Coastal Conservation* 14 (3) (September): 232.

poaching, deforestation, overgrazing, soil erosion, desertification, and overfishing.

However, it is important to note that, unlike Accra, Dakar does not suffer from water pollution or inadequate supplies of potable water. In fact, the World Health Organization and the United Nations International Children's Emergency Fund reported in 2000 that "over 90 per cent of urban populations had access to improved water supply" in Senegal¹¹. Improvements in Senegal are largely due to the implementation of successful policies. This thesis seeks to apply elements of successful environmental policies in Dakar to potential policies in the Greater Accra Region in order to eradicate its most pressing environmental issues.

Urban Farming

One of the main problems facing Ghana's coastal environment is insufficient compliance and enforcement of environmental legislation. This is because not enough politicians in Ghana view the environment as a priority issue, there are limited resources available for coastal management, and there exists outdated legislation that fails to reflect the trend of current events in the country today¹². Runoff from farming introduces pesticides, soil, fertilizer, manure and other organic matter to bodies of water, which increases stream discharge and alters the quality of the infected water¹³. In some cases,

¹¹ United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 5.

¹² Wilson, Tamakloe. State of Ghana's Environment-Challenges of Compliance and Enforcement. In Ghana Environmental Protection Agency [database online]. Ghana, 2004 Available from http://www.inece.org/indicators/proceedings/04h_ghana.pdf (accessed April 11, 2015).

pesticides in urban agriculture runoff are particularly important when it pollutes streams and sediments, especially during the wet season. Flooding of drainage basins during Ghana's wet season pollutes surface water and other bodies of water, "which is generally attributed to inadequately sized culverts, and blockage of the major drains by accumulated silt caused by years of neglect and lack of maintenance."¹⁴ Proper maintenance is also lacking in abandoned farmland that introduces pesticides and fertilizer into bodies of water through runoff.

However, urban agriculture may be a good use of wastewater. In fact, "Accra generates approximately 80,000,000L of wastewater per day, of which urban vegetable farms alone use up to 11,250,000L."¹⁵ Despite evidence suggesting the negative environmental effects of urban farming in Ghana, proper wastewater management may significantly reduce sanitation problems and environmental degradation that results from using wastewater for crops. The Greater Accra region alone is home to 505 wastewater treatment plants, most of which are currently under the management of government and public institutions including hospitals, schools, security services, and ministries. However, the majority of these facilities are functioning below average capacity or are unserviceable. While wastewater treatment appears to be a feasible task, former attempts to develop new service facilities have failed due to underfunding. The United Progressive

¹³ Ntow, W. J., L. M. Tagoe, P. Drechsel, P. Kelderman, H. J. Gijzen and E. Nyarko (2008): *Accumulation of Persistent Organochlorine Contaminants in Milk and Serum of Farmers from Ghana*. *Environ. Res.*, 106, 17–26.

¹⁴ Sam, Peter A. Jr. 2009. Flooding in Accra Research Report. Abstract.

¹⁵ Lydecker, Mary, and Pay Drechsel. 2010. Urban Agriculture and Sanitation Services in Accra, Ghana: The Overlooked Contribution. *International Journal of Environmental Sustainability* 8 (1/2): 94-103.

Alliance has tried to ban the use of polluted water in Accra, but failed since such bans threaten many livelihoods and urban vegetable supply. It also contradicts national poverty-alleviation strategies. In any case, related institutional and policy frameworks are weak and hardly practicable or enforced in the country. Urban farms have the potential to significantly contribute to Accra's sanitation needs through proper wastewater irrigation. In addition, solid waste dumping and environmental pollution may decline through the establishment of buffer zone, or environmentally protected areas, management along streams and rivers as a result of urban agriculture. Most importantly, urban agriculture may result in improved flood control by diverting runoff into urban agriculture plots. The proper treatment of wastewater may result in improved public health¹⁶.

Mining and Oil and Gas Extraction

Mineral extraction in the Greater Accra Region, particularly small-scale mining, often leads to mercury pollution and land degradation. Ghana is well endowed with mineral resources, including gold, diamonds, bauxite, manganese, limestone, granite, and clay. In addition, future exploitation of oil and gas may be so high that it has been projected that reserves in Ghana will propel the country to middle-income status by 2020¹⁷. Small-scale gold mining was legalized with the Small-Scale Gold Mining Law of 1989. In the case of small-scale gold mining, environmental degradation usually results from low safety awareness and levels of training, poor exploitation of available resources due to selective extraction of rich ores, low wages and chronic shortages of capital, poor

¹⁶ Lydecker, Mary, and Pay Drechsel. 2010. Urban Agriculture and Sanitation Services in Accra, Ghana: The Overlooked Contribution. *International Journal of Environmental Sustainability* 8 (1/2): 94-103.

¹⁷ UNEP, 2013, Green Economy Scoping Study: Ghana

environmental standards, and the utilization of inefficient equipment¹⁸. As a result, small-scale gold-mining poses threats to human health, forests, and waterways.

Mercury pollution due to gold mining is a leading cause of environmental degradation in Ghana. A 1995 World Bank report stated that between four and five tons of mercury were released into the environment annually as a result of Ghanaian small-scale gold-mining operations¹⁹. Metallic mercury is the preferred leach reagent for gold processing in developing countries. Small-scale mining in developing countries, through the method of amalgamation²⁰, has increased due to heightened prices of gold. Apart from its serious threat to human health, mercury undergoes a change in speciation from an inorganic form to a stable methylated state when in contact with the environment²¹.

Small-scale gold mining significantly impacts landscapes in the form of the mass removal of surface vegetation and deforestation. In addition, miners frequently abandon pits and trenches without properly reclaiming spoils, which results in irreversible damage

¹⁸ Hentschel, T., V. Hagelgans, J. R. Grosser, and M. Priester. 1994. "Heavy-Metals in Stream Sediments: a Gold-Mining Area Near Los Andes, southern Colombia S.A." *AMBIO - A Journal of the Human Environment* 23, no. 2: 146. *GreenFILE*, EBSCOhost (accessed April 15, 2015).

¹⁹ World Bank 1995 Staff appraisal report, Republic of Ghana, World Bank report no. 13881-GH, Industry and Energy Operations, West Central Africa Department, Africa Region, World Bank, Africa.

²⁰ Amalgamation is the process by which mercury is added to gold-aggregated sediments, and adheres to metallic gold, forming pasty amalgams. It is then panned, filtered, and burned to produce the final gold product. This process is an inexpensive and reliable option for extracting gold from low-grade ores, which is why it is frequently practiced in small-scale mining.

²¹ Hilson, Gavin. 2002. The Environmental Impact of Small-Scale Gold-Mining in Ghana: Identifying Problems and Possible Solutions. *The Geographical Journal* 168 (1) (December): 57-71.

to landscapes. Abandoned pits and trenches fill with water and serve as breeding grounds for malaria-infected mosquitoes. Furthermore, waterways in small-scale mining regions are often altered as a result of mining activity. When inorganic mercury enters the food chain and is absorbed by fish, the chemical bio-accumulates as it travels up the food chain. A study²² carried out in Dumasi (Western Region of Ghana) shows that, despite levels of mercury in surface water and groundwater that are below World Health Organization standards, sediments are seriously polluted²³. Moreover, fish are contaminated beyond recommended human consumption.

In addition, oil extraction contributes to fishery depletion in the Greater Accra Region. Pollutants like bitumen spillages occurred in Axim, Mangyeya, Metika, Ngyensia, and Asemkow areas of the Western Region²⁴. Moreover, the inundation of “sangassum,” a brown sea weed, has been spotted by fishermen who claim that it was not there prior to the oil production²⁵.

Fishing

²² Babut, M., R. Sekyi, A. Rambaud, M. Potin-Gautier, S. Tellier, W. Bannerman, and C. Beinhoff. 2003. Improving the Environmental Management of Small-Scale Gold Mining in Ghana: A Case Study of Dumasi. *Journal of Cleaner Environment* (11): 215-21.

²³ World Health Organization. *Guidelines for Drinking Water Quality*, 2nd ed. Health criteria and other supporting information, vol. 2 [online]. Available at <http://www.who.int/water—sanitation—health/GDWQ/Summary—tables/Tab2a.htm>. Geneva: WHO; 1996

²⁴ Oil Production Threatens Ghana's Fishing Industry. 2014. *Accra City Times* 2014.

²⁵ Oil Production Threatens Ghana's Fishing Industry. 2014. *Accra City Times* 2014.

Apart from pesticides entering water supplies due to urban agriculture and mercury pollution from mining, Ghana's coastal region faces overfishing, overcapacity of fishing infrastructure and equipment, habitat degradation, and inequitable access agreements²⁶. Oil extraction mainly in Western Ghana contributes to fishery depletion, as well. The combination of these factors has resulted in the decline of fisheries in recent years, a leading industry in Ghana's economy. In addition, artisanal fishers in Ghana using small mesh sizes that catch nonmarketable fish, and trawlers operating close to the shore destroy coastal habitats²⁷.

The recent influx of foreign firms exploring for oil and gas in Ghana may compromise the fishing industry. In some areas, fishermen compete with foreign firms for marine space. "Ghana is losing its fishing resources due to the emergence of the oil and gas industry that has set lots of restrictions on fishing activities around safety zones of oil installations."²⁸ According to government estimates, exports from Ghana's fishing industry total about \$60 million a year, providing income for ten percent of the population²⁹. The ministry of food and agriculture states that "the fishing sector ... contributes significantly to national economic development objectives related to employment, livelihood support, poverty reduction, food security, foreign exchange

²⁶ Atta-Mills, John, Jackie Alder, and Ussif R. Sumaila. 2004. The Decline of a Regional Fishing Nation: The Case of Ghana and West Africa. *Natural Resources Forum* 28 (1) (February): 13-21.

²⁷ Koranteng 1998; Overa 2002

²⁸ Oil Production Threatens Ghana's Fishing Industry. 2014. *Accra City Times* 2014.

²⁹ Anderson, Mark, and Billie A. McTernan. 2014. Does Ghana's Oil Boom Spell the End for the Fishing Industry? *The Guardian*. 2014.

earnings and resource sustainability.”³⁰ Destruction of canoes and fishing gear due to collision with oil vessels also interferes with the fishing industry³¹.

Marine Debris

Marine debris, or marine litter, is defined as “any man-made object discarded, disposed of, or abandoned that enters the coastal or marine environment.”³² While various public perceptions of litter exist, it is a fact of life and it is an act that “pervades our life, causes environmental degradation, and is recognised as an antisocial behaviour that reduces societal benefits.”³³ One definition of litter is “the careless, incorrect disposal of minor waste.”³⁴ Two categories, active and passive, of littering behavior exist³⁵. Active litterers purposefully dispose of debris into the environment, while passive

³⁰ Terkper, Seth. 2013. *2013 Annual Report on the Petroleum Funds*. The Republic of Ghana.

³¹ Oil Production Threatens Ghana's Fishing Industry. 2014. *Accra City Times* 2014.

³² NOAA, 2007; Sheavly, 2007; UNEP, 2009; cited in Himans, Irene P. 2013. *Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana*. MPHIL., University of Ghana, 1.

³³ Baltes & Hayward, 1976; Reich and Robertson, 1979; Cialdini & Baumann, 1981; Cialdini, 2003; Slavin, 2011; cited in Himans, Irene P. 2013. *Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana*. MPHIL., University of Ghana, 41.

³⁴ Hanselmann & Scholz, 2003; cited in Himans, Irene P. 2013. *Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana*. MPHIL., University of Ghana, 41.

³⁵ Sibley & Lui, 2003; Slavin, 2011; cited in Himans, Irene P. 2013. *Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana*. MPHIL., University of Ghana, 41.

litterers unknowingly place debris into their surroundings³⁶. It is more difficult to reduce passive littering because people are oblivious that they have participated in littering³⁷. Understanding littering behavior within a society or group is multifaceted and can be better informed by analyzing descriptive and injunctive norms³⁸. A descriptive norm refers to the perceptions that a person has of what is commonly done in a given situation, whereas an injunctive norm refers to the perceptions a person has regarding what is seen as culturally acceptable and unacceptable³⁹. An additional reason for littering is the idea that people are more inclined to litter in an area where more litter is present⁴⁰. Thus, the moral constraints of littering are reduced if individuals notice others littering. Therefore, “an individual’s behaviour is likely to be influenced by their perception of the behaviour

³⁶ Slavin, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 41.

³⁷ Slavin, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 41.

³⁸ Caldini, 2003; Shultz *et al.*, 2007; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 42.

³⁹ Caldini, 2003; Schultz *et al.*, 2007; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 42.

⁴⁰ Arafat *et al.*, 2007; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 42.

of other citizens.”⁴¹ Apathy, slothfulness, and the inconvenience of holding onto litter or accidental disposal of litter contribute to littering⁴².

Most residents and visitors view the beach as a public amenity. The recreational activities that are often exercised at beaches, coasts and seas include swimming, diving, boating, recreational fishing and other water sports⁴³. Marine litter can deter and discourage recreational users from visiting polluted areas⁴⁴. The level of litter necessary to deter tourists and locals from visiting an area varies depending on personal preference, use of the area, and surrounding litter levels⁴⁵. Nonetheless, beach users often rank cleanliness as the most important feature of a tourist and resident destination⁴⁶.

Recreational users are often deterred from heavily littered coastal regions due to both

⁴¹ Torgler et al., 2008; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 43.

⁴² Torgler et al., 2008; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 43.

⁴³ Mouat et al., 2010;cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 10.

⁴⁴ Balance et al., 2000; Sheavly and Register 2005 cited in Mouat et al., 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 11.

⁴⁵ (Mouat et al., 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 10.

⁴⁶ Balance et al., 2000; ENCAMS 2005 cited in Mouat et al., 2010;cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 11.

aesthetic unattractiveness and health and safety concerns⁴⁷. Marine debris also creates a loss of aesthetic value for beachgoers. “Marine debris can negatively affect people’s quality of life by reducing their enjoyment of the landscape and scenery.”⁴⁸

In a social survey taken on a Ghanaian coastline, information was collected regarding littering behaviors in coastal environments. 87.8% of participants in this survey claimed to have disposed of their litter on the beach at least once and almost all respondents admitted that this was their usual habit⁴⁹. Respondents were not inclined to collect litter they came across on the beach nor were they disposed to discuss the concern of marine debris when they were faced with others littering. With that said, “Almost all respondents believe that Ghana’s beaches are not clean and yet surprisingly they all admit to the fact that this gives them cause for concern.”⁵⁰ It is possible that campaigns addressing litter issues are ineffective because people are becoming desensitized to them and, furthermore, are convinced that the proliferation of litter is not their problem, but a

⁴⁷ Cheshire et al., 2009; Mouat et al., 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 10.

⁴⁸ Cheshire et al., 2009; Mouat et al., 2010; STAP, 2011b; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 10.

⁴⁹ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 86.

⁵⁰ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 86.

responsibility of regulators⁵¹. Participants indicated that they are not happy with the amount of debris on beaches, whether it is from human consumption or sewage⁵².

With that said, respondents seemed the least supportive of methods of combatting beach litter that included penalizing those that litter and advertisements at the beach entry regarding littering and beach clean ups⁵³. The responses in this survey were provided by the Accra Metropolitan Assembly (AMA), Tema Metro-Solid Waste Management Department, Ministry of Environment Science and Technology, and The Environmental Protection Agency (EPA)⁵⁴.

Marine debris negatively impacts ecological and biological marine life. According to the EPA, Ghana's foreign exchange earnings are reduced due to declining beach patronage. In addition, marine debris degrades beaches and its surroundings and harmful to humans and animals. Moreover, the main sources of debris, as identified by the EPA, are beach patrons, boats, storm water discharge, outfalls, the sea, ships, industrial activities, offshore oil and gas platforms and exploration⁵⁵.

⁵¹ Arafat et al., 2007a; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 86.

⁵² Williams et al., 2000; Tudor & Williams 2003; Slavin, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 86.

⁵³ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 88.

⁵⁴ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 88.

⁵⁵ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 89.

Plastics are the main source of marine debris globally, where plastic accounts for an estimated 60% to 80% of litter collected⁵⁶. Plastic and other synthetics have transformed the nature and composition of waste over the last 30 to 40 years⁵⁷. The danger is that plastic is resilient to natural biodegradation processes. When plastic litter reaches the ocean, about half of the debris floats and travels on currents for thousands of miles⁵⁸. Daily activities, such as grocery shopping and incorrect disposal of packaging litters Ghana's beaches with non-degradable synthetic materials⁵⁹.

Beach location, accessibility and volume of tourism may be an explanation for the high amount of land-based marine debris. Ocean based debris accounts for a small fraction of debris compared to land-based debris⁶⁰. The nature of debris is attributed to the location of the beach in question. At sites that attract high volumes of tourists, plastic

⁵⁶Nunoo & Quayson 2003; Tsagbey et al., 2009; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 59.

⁵⁷ Sheavly 2005; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 80.

⁵⁸ Derraik 2002, Sheavly 2005; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 80.

⁵⁹ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 81.

⁶⁰ Slater, 1991; Slater 1992; Gregory & Ryan, 1997; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 82.

bottles, bags, metal cans, and pieces of glass are prevalent⁶¹. Another source of debris is sewage and storm water drains that travels to coastal environments⁶². In heavily populated areas, there is more pressure on storm water drains and sewage outfalls, which increases litter traveling to coastal environments by drains. This is consistent with a later study that attributes low debris quantities with small population densities, thus less litter originating from sewage outfalls and drainage systems⁶³.

It often ranges from domestic materials, industrial products and discarded fishing gear⁶⁴. Marine litter has often been identified as one of the top pollutants of the world's oceans and waterways. Marine debris poses environmental, economic, health and aesthetic problems⁶⁵. "Marine debris that collects along beautiful shorelines and waterways detracts from the aesthetic beauty and enjoyment of those beaches and negatively affects tourism⁶⁶. For a country that derives much of its income from the

⁶¹ Al-Najjar & Al-Shiyab, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana. 84.

⁶² William & Simmons, 1997; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 84.

⁶³ Slavin, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 84.

⁶⁴ NOAA, 2007; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 1.

⁶⁵ Sheavly, 2007; UNEP, 2009; NOAA, 2010; World Ocean Review, 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 12.

tourist industry, this could have serious repercussions for the economy. In addition, abandoned fishing lines, rope and plastic bags can get caught in boat propellers and damage engines⁶⁷. Medical waste and drug paraphernalia on beaches can carry diseases and sharp objects pose dangers for beachgoers⁶⁸. Ecosystems and water quality are affected by marine debris, which in certain cases is lethal⁶⁹. Marine debris is most noticeable after rains and during low tides posing a threat to the tourist industry in Ghana⁷⁰. The most frequently littered objects include pieces of fishing net, foam, footwear, cloth, charcoal, wood, and husk of sugar cane and coconut⁷¹. Fecal deposits are also common, especially in areas where adequate toilette facilities are not present. Tidal cycles wash these pollutants into the sand and degrade the quality of water. Sewage is

⁶⁶ Rockefeller, 2003; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 25.

⁶⁷ UNEP, 2009; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 1.

⁶⁸ NOAA, 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 5.

⁶⁹ NOAA, 2010; cited in cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 5.

⁷⁰ Nunoo & Quayson, 2003; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 26.

⁷¹ Nunoo & Quayson, 2003; Tsagbey et al., 2009; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 26.

directly disposed of into the sea, which can cause serious health risks for beach users and sea biota⁷².

Marine litter has serious consequences for coastal communities including human health, increasing costs of cleanup exercises, low patronage by tourists, ship damage, fishery losses and risks to farming near coastal regions⁷³. “For primary contact, i.e. swimming, the levels of the coliform (total and faecal) at all beaches compared to WHO international standards were found to be permissible, but not desirable. For fishing and boating, the levels of coliform are within the acceptable range.”⁷⁴ The population of Ghana is rising at 2.5% annually, which calls for improvement of waste management in the country⁷⁵

Ghana lacks reliable and continuous monitoring data and litter quantification. Most scientific studies on marine debris in Ghana have been regional addressing the type and quantities but not the changes over time⁷⁶. Evidence suggests that the problem will

⁷² Nunoo & Evans, 2007; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 26.

⁷³ World Ocean Review, 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 26.

⁷⁴ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 85.

⁷⁵ Ghana Statistical Service; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 27.

⁷⁶ Rees & Pond, 1997; Jambeck et al., 2001; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 5.

most likely continue and worsen despite the measures to combat marine debris⁷⁷.

“Monitoring the trends and changes in marine debris will provide significant insight and understanding of this pollution problem and can function as an ongoing component of management strategies.”⁷⁸ Identifying trends and changes in marine debris is important in handling pollution because that information can be used as a roadmap for acknowledging the sources of debris and can be used to assess the success of programs aiming to reduce debris in the coastal region⁷⁹.

Marine debris also has negative implications for the economy. The direct impacts of marine debris include the loss of tourist attraction and decreased vessel activity as a result of propeller fouling⁸⁰. The indirect impacts are considerable and result from a decrease in ecosystem services and environmental quality of the coast that can lead to diminished amenity and resulting property values, opportunity costs and civic pride⁸¹. Despite economic costing only emerging recently, “it is clear that marine and coastal

⁷⁷ National Academy of Sciences, 2012; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 5.

⁷⁸ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 5.

⁷⁹ Sheavly, 2007; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 5.

⁸⁰ Potts & Hastings, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 5.

⁸¹ Potts & Hastings, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 5.

litter can impact and deteriorate a range of natural functions that provide ongoing social and economic benefits⁸². Nonetheless, the consequences of degraded ecosystem services are difficult to value, because there is varying interest in certain impacts of marine litter⁸³.

Municipal Waste Management

Currently and historically proper waste management has been a major challenge for successive governments in Ghana⁸⁴. “Problems with indiscriminate dumping; Increasing difficulties with acquiring suitable disposal sites; Difficulties with conveyance of solid waste by road due to worsening traffic problems and the lack of alternative transport options; and the weak demand for composting as an option for waste treatment and disposal” are the key problems with solid waste disposal in the country⁸⁵. According to UNEP, Ghana dumps the majority of its municipal and industrial runoff into coastal

⁸² Potts & Hastings, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 6.

⁸³ Mouat et al., 2010; Potts & Hastings, 2011; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 6.

⁸⁴ Jospong Group of Companies 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 27.

⁸⁵ Mensah and Larbi, 2005; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 27.

waters with minimal pretreatment, and raw sewage is funneled into coastal regions. In some cases, high concentrations of bacteria pose risks for human health⁸⁶.

Mass migration into urban regions leads to congestion in cities resulting in severe waste and sanitation problems⁸⁷. Thus, the heart of the issue of waste management resides in Ghana's urban areas⁸⁸. Moreover, despite several sectorial national monitoring and assessment efforts, coastal area and marine data and knowledge provide inadequate integrated regional information. Therefore, political and management decisions for action can rarely be based at regional level negotiations⁸⁹. Additionally, these monitoring efforts do not excel at assessing long-term trends and imminent threats of combined effects of human activities⁹⁰. Characterization of waste data for African cities is rarely available; however, some regional assessments have been made⁹¹.

⁸⁶ UNEP, 1991a from Hinrichsen, 1998; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 27.

⁸⁷ Jospong Group of Companies, 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 27.

⁸⁸ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 27.

⁸⁹ IGCC/GCLME, 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 30.

⁹⁰ IGCC/GCLME, 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 30.

⁹¹ Palczynski, 2002; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 30.

The most prominent forms of waste in Ghana's urban area are solid waste, industrial waste and construction waste. Although some of these wastes are transferred to dumpsites, most of them end up in drains, streams and ultimately end up in the seas⁹². Consequently, many towns and cities are faced with the influx of municipal solid and liquid wastes that they are not equipped to properly manage⁹³. Poor waste management is not only an engineering issue, however, "Rapid urbanization, poor financing capacity of local authorities, low technical capacity for planning and management of solid waste, weak enforcement of environmental regulations-which allow authorities to flout environmental regulations without any sanctions" all contribute to the problem⁹⁴. Manual systems may be the most appropriate method of waste management in Ghana. The difficulty is in developing and enforcing disposal systems that do not use a high level of mechanical equipment⁹⁵.

Environmental values

Assessing the environmental values of primary coastal resource users in Ghana can be a helpful tool for determining pragmatic natural resource management. Policies that address contemporary environmental concerns may alleviate several measures of

⁹² United Nations Commission on Sustainable Development, 2012; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 28.

⁹³ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 28.

⁹⁴ Mensah & Larbi, 2005; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 29.

⁹⁵ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 29.

degradation in the coastal region, so long as they coincide with the values of individuals. Several organizations that implement coastal natural resource management vary in environmental values. While in some instances these organizations intend to reflect global values of coastal natural resources, more often than not they do not match up with those of the people who rely on the resources for their livelihoods⁹⁶. Although studies⁹⁷ show that broad local participation in decision-making regarding sustainable development is vital to the successful implementation of successful policy, this apparently lacking in Accra.

A study of civil service organizations in Ghana identified the four main deficiencies of such organizations in the country: a weak common voice from civil service organizations, and civil service organizations competing with each other rather than working together; insufficient downward accountability by civil service organizations, meaning that input from constituents is not adequately considered in the creation of projects; a strong dependence on funds from foreign donors, fostering complacency in Ghanaian civil service organizations to seek alternative ways of sustaining themselves; and a lack of personnel with adequate training to carry out their functions⁹⁸.

⁹⁶ Lawson, Elaine, Wolfgang Schluchter, and Chris Gordon. 2010. Using the Paired Comparison Methodology to Assess Environmental Values in the Coastal Zone of Ghana. *Journal of Coastal Conservation* 14 (3) (September): 236.

⁹⁷ Lawson, Elaine, Wolfgang Schluchter, and Chris Gordon. 2010. Using the Paired Comparison Methodology to Assess Environmental Values in the Coastal Zone of Ghana. *Journal of Coastal Conservation* 14 (3) (September): 231-8.

While environmental issues and values discussed in this thesis are specific to Accra and Dakar, the relationships between education and civic engagement, for example, are likely present in other low-income to moderate-income countries where sustainable development is a challenge. A successful policy for sustainable development balances these two realities, so that the tradeoff is not as severe, and actually benefits a community economically, environmentally, and socially.

CHAPTER 2-EXISTING ENVIRONMENTAL AND ECONOMIC PROJECTS & POLICIES

Adopted Measures toward Sustainable Development in Accra and Dakar

Despite increasing stress on Ghana's resources, promising policies and partnerships indicate that progress is possible⁹⁹. Africa is behind in meeting internationally agreed goals, while simultaneously incurring pressure on its natural resources and rapid population growth. However, many African countries are adopting collaborative cross-border policies and projects that aim to achieve a more sustainable future. "Globally, although the Millennium Development Goal (MDG) target on water supply was met in 2010, more than 600 million people will still lack access to safe drinking water in 2015."¹⁰⁰ In addition, many governments struggle to provide social

⁹⁸ West Africa Civil Society Institute, Ghana Anti-Corruption Coalition. 2011. *The State of Civil Society in Ghana: An Assessment*. Africa: CIVICUS, 4.

⁹⁹ United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 5.

¹⁰⁰ United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 5.

services such as access to safe drinking water and sanitation in Africa's cities that are generally marked by extreme poverty and informal settlements. Climate change accelerates urbanization and creates more stress on natural resources, exacerbating environmental issues through extreme weather events. Weak governance leads to the improper handling of complex integrative issues; however, Africa's history of collaborative projects between governments, communities and stakeholders gives hope for progress.

Existing Policies for Regulating Urban Farming

Data and information regarding the production of commercial and industrial wastewater are virtually nonexistent in Ghana¹⁰¹. Likewise, knowledge of safe wastewater use in agricultural practices is lacking, as well as proper wastewater treatment. Analyses of the health risks resulting from poor wastewater treatment are available; however, funding for research into low-cost wastewater treatment is lacking. There is demand for research on low-cost technologies, funding for the assessment of health risks, measures to increase health protection, and increased public awareness of the use of wastewater in agriculture. The following projects geared toward wastewater management in Ghana exist¹⁰²:

- **Ghana's Environmental Sanitation Policy (2010):** Mandates metropolitan, municipal and district assemblies (MMDAs) the responsibility of wastewater

¹⁰¹ Gyampo, Maxwell. 2012. *Wastewater Production, Treatment, and Use in Ghana*. Navrongo, Ghana: Department of Earth and Environmental Science.

¹⁰² Gyampo, Maxwell. 2012. *Wastewater Production, Treatment, and Use in Ghana*. Navrongo, Ghana: Department of Earth and Environmental Science.

management in order to ensure the availability of facilities for treating wastewater.

- **CSIR-WRI:** Researches the development of technologies for pollution control, pollution prevention and poverty reduction through the use of water.
- **IWMI-Ghana:** International NGO that researches wastewater and excreta reuse in Ghana.
- **The Ministry of Food and Agriculture (MoFA):** provides services for services to farmers through its metropolitan, municipal and district offices across Ghana.
- **The Hydrological Services Department:** Monitors river and stream flow rates and manages urban drainage.

Existing Policies for Regulating Mining and Oil and Gas Extraction

The mining sector supplements long-term capital formation and fiscal payment to the state. In addition, it is a major foreign exchange earner. However, there is the risk that the mining industry has negative consequences on the livelihood of individuals in the community. These negative consequences often affect those who are unprepared to deal with the impacts of mining, which are displacement, friction with outsiders who come in, pollution, land degradation, and exposure. Mining exploration usually takes place on land that is often inhabited by rural people. Displacement with inadequate compensation payments often worsen poverty in mining areas and spark social conflict. Moreover, some believe that despite the positive trends in the transformation of the mining industry, the sector has not increased development, social well-being and livelihood security, nor

has it reduced vulnerability of poor communities¹⁰³. Others argue that the improved performance of mining as a leading Foreign Direct Investment and foreign exchange earner has not reflected on the national economy¹⁰⁴. Most returns on capital investment flows out of the country and the government receives very little of the mineral wealth. Scholars suggest that this may be partly due to lax mining legal framework in Ghana¹⁰⁵.

The mining industry in Ghana has adverse environmental impacts. In 2003, the estimated total economic cost of environmental and natural resources degradation rose to US \$730 million, which is the equivalent to 9.6 percent of gross domestic product (GDP)¹⁰⁶. However, mining in Ghana has contributed approximately two to six percent of GDP since independence¹⁰⁷. This means that the cost of most methods of mineral extraction in the country diminishes the real gains in economic development.

Mining and oil and gas extraction were of the five priority environmental issues that were identified for Africa for GEO 5 during the regional preparatory consultations.

The following projects were proposed to combat these issues:

¹⁰³ Kuma, J., S.; Younger, P., L. (2004). Water quality trends in the Tarkwa Gold-mining district, Ghana. *Bulletin of Engineering Geology and the Environment* 63:119-132

¹⁰⁴ Aryeetey, E., Osei, B. and Twerefou, D. (2004) *Globalization, Employment and Livelihoods in the Mining Sector of Ghana* (Accra: ESSER Occasional Paper).

¹⁰⁵ Lawson, Elaine, and Gloria Bentil. 2014. Shifting Sands: Changes in Community Perceptions of Mining in Ghana. *Environment, Development & Sustainability* 16 (1) (February): 217-38.

¹⁰⁶ Duffuor, Kwabena. 2009. *The budget Statement and Economic Policy of the Government of Ghana for the 2009 Financial Year*. Accra, Ghana: The Republic of Ghana.

¹⁰⁷ Lawson, Elaine, and Gloria Bentil. 2014. Shifting Sands: Changes in Community Perceptions of Mining in Ghana. *Environment, Development & Sustainability* 16 (1) (February): 217-38.

The TEN project aims to develop the hydrocarbon Fields offshore Ghana and will entail the installation of oil and gas production wells, water injection wells and gas injection wells. Production will be collected through subsea manifolds and will travel by subsea flow lines to a Floating Production Storage and Offloading (FPSO), which will reside in the area of the TEN fields. The installation of subsea equipment will be planned in 2015 and production is expected to start in 2016. Oil production that will commence in 2016 is anticipated to produce oil for 20 years. The mean annual oil production is expected to be approximately 52,000 barrels daily, increasing to 76,000 barrels per day from 2017 to 2020¹⁰⁸. In 2035, the total amount of barrels of oil is expected to be 245 million¹⁰⁹. The Environmental Impact Statement reports the results Environmental Impact Assessment, which is available at six coastal districts of Western Ghana¹¹⁰.

Existing Policies for Regulating Fishing

The coastal city of Accra, Ghana is said to have been harmed by industrial pollutants, such as oil spillage and discharge from marine transport. Offshore exploration for oil in particular pollutes oceans and seas from dumping, oil spills, and engine leaks. Marine Managed Areas (MMA) aim for improved food security, effective governance,

¹⁰⁸ United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 5, 2.

¹⁰⁹ United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 5, 2.

¹¹⁰ United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 5, 2.

economic growth and biodiversity conservation. MMAs correspond to fisheries and water quality management.

For example, the network of Marine protected Areas in West Africa in West Africa's Regional Marine Managed Areas implement no-take zones that increase protection and conservation of biodiversity. The Network of Marine Protected Areas in West Africa made improvements in ensuring fisheries, tourism and oil and gas development do not negatively affect the coastal region of Ghana¹¹¹. The Jakarta Mandate on Marine and Coastal Biodiversity of the CBD aims to promote conservation and sustainable use of coastal and marine ecosystems as well as their natural resources. The policy measures put forth by the GEO 5 report recommends strictly eliminating the degradation of ocean and seas through Marine Managed Areas (MMAs), regional efforts to manage marine pollution and integrated coastal zone management¹¹².

Despite existing laws that aim to promote ecologically friendly practice, there is little cooperation from some fishermen in Ghana. Others have come forward and revealed the situation in the fishing industry. For example, law LI 1968 (Law governing fishing in Ghana), states that the use of chemicals like DDT, dynamite, light and pair-trawling as a means for fishing is prohibited; however, that is not the case in Ghana today¹¹³.

¹¹¹ United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 5, 3.

¹¹² United Nations Environment Programme. 2012. *Global Environmental Outlook: Environment for the Future We Want*. Valletta, Malta: United Nations Environment Programme, 5, 6.

Fishermen in Ghana brought this breach of LI 1968 to the attention of the government of Ghana, because it is not only harmful, but “was fast killing the industry, and the earlier something was done to resuscitate the industry, the better.”¹¹⁴ Another example of this was exposed in an interview with the Chief Fisherman for Tema Awudum, Nii Odamithey II by The Chronicle. Odamithey said trawlers and what they call “China-China” were bringing fish ashore in cartons in tons¹¹⁵. Meanwhile, artisanal fishermen, also known as “canoe-canoe fishermen,” were unable to catch fish, according to Odamithey, and as a result were migrating to Togo to fish¹¹⁶. This results in fishermen leaving the country, which is detrimental to the Ghanaian economy.

Existing Policies for Regulating Marine Debris

Ghana has adopted management practices such as promoting “appropriate policy initiatives, provision of collection, disposal and treatment infrastructure, recycling and beach cleanups.”¹¹⁷ There exist regional and international efforts to improve waste management in the coastal regions in Ghana. The Abidjan Convention for Co-operation

¹¹³ Attenkah, Richard. 2013. Ghana: Illegal Fishing Practices Killing Industry. *All Africa* 2013. <http://allafrica.com/stories/201308221516.html> (accessed April 9, 2015).

¹¹⁴ Attenkah, Richard. 2013. Ghana: Illegal Fishing Practices Killing Industry. *All Africa* 2013. <http://allafrica.com/stories/201308221516.html> (accessed April 9, 2015).

¹¹⁵ Attenkah, Richard. 2013. Ghana: Illegal Fishing Practices Killing Industry. *All Africa* 2013. <http://allafrica.com/stories/201308221516.html> (accessed April 9, 2015).

¹¹⁶ Attenkah, Richard. 2013. Ghana: Illegal Fishing Practices Killing Industry. *All Africa* 2013. <http://allafrica.com/stories/201308221516.html> (accessed April 9, 2015).

¹¹⁷ Nunoo & Quayson, 2003; Tsagbey et al., 2009; UNEP, 2009; NOAA, 2010; World Ocean Review, 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 30.

in the Protection, Management and Development of the Marine and Coastal Environment of the West and Central African (WACAF) region was created to fulfil the need to implement regional approaches to the waste management problem in the marine environment, coastal regions and inland bodies of water in West Africa through the development of environmental indicators for policymaking (Palczynski, 2002)¹¹⁸.

Despite existing laws and regulations pertaining to the dumping of trash in coastal regions, the global reality of marine debris, the difficulty in containing debris in territorial boundaries and the intricacy of identifying sources of debris have complicated the development and enforcement of effective laws¹¹⁹. The most promising method for controlling marine litter is terminating it at its source, which also appears to be the only option for waste management that is economically sustainable in the long-term¹²⁰. Various international legislation directly and indirectly aim to tackle marine debris. Most of the international legislation designed to decrease the amount of marine litter and to prevent the disposal of waste into the marine environment is broad and provides the

¹¹⁸ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 30.

¹¹⁹ Sheavly 2007; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

¹²⁰ Fanshawe & Everard, 2002; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

skeleton for sustainable conservation of the oceans¹²¹. The key international laws and agreements for marine debris are outlined below:

The United Nations Convention on the Law of the Sea (UNCLOS) was created in 1982 in order to extensively regulate the management of marine resources and conservation for the future. Requirements of UNCLOS include “territorial sea limits, conservation and management of living marine resources, protection of the marine environment, economic and commercial activities, marine scientific research and a binding procedure for the settlement of disputes relating to the oceans.”¹²² Part XII of the Convention emphasizes the importance of controlling pollution from land-based sources, pollution from sea-bed actions subject to national jurisdiction, pollution from activities near the coastal environment, pollution as a result of dumping, pollution from vessels, and air pollution¹²³.

The International Convention for the Prevention of Marine Pollution from Ships, 1973 As Modified by the Protocol of 1978 Relating Thereto (MARPOL 73/78) Annex V is critical to the prevention of the marine environment by ships. The MARPOL Convention encapsulates six annexes focusing on different types of pollution: oil and oily waste, noxious liquid substances, harmful packages materials, sewage, garbage, and air

¹²¹ Mouat et al., 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

¹²² Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

¹²³ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

pollution from ships. The International Maritime Organization (IMO) is in the process of reviewing MARPOL Annex V, which covers 97.5% of the world's shipping capacity (IMO, 2010), In order to improve the management of marine litter¹²⁴.

The London Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter was created in 1972 to “promote the effective management of all sources of marine pollution and prevent the dumping of wastes and other materials at sea.”¹²⁵ It functions using a black-and-grey-list, where black-list items are prohibited and grey-list materials are under strict control. The dumping of remaining items is permitted with a permit¹²⁶. In general, black-list items are likely to cause serious harm to living things on land and in water. Grey-list items are contaminants that comprise of arsenic, beryllium, chromium, copper, lead, nickel, vanadium, zinc, organosilicon compounds, cyanides, fluorides, pesticides and their by-products¹²⁷.

The following agreements are also influential to the handling of marine waste:

The United Nations Programme of Action from Rio and the Johannesburg Plan of Implementation is a global, national and local call-to-action by organizations of the

¹²⁴ Mouat et al., 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

¹²⁵ UNEP, 2005; Mouat et al., 2010; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

¹²⁶ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

¹²⁷ UNEP, 2005; Mouat et al., 2005; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 35.

United Nations system, Governments, and Major Groups everywhere¹²⁸. The Convention on Biological Diversity 1992, with the Jakarta Mandate on the Conservation on and Sustainable Use of Marine and Coastal Biological Diversity was created in 1995 to encourage party cooperation in areas exceeding “national jurisdiction for the conservation and sustainable use of biodiversity, either directly or through competent international organizations.”¹²⁹

In addition to international organizations working toward implementing effective waste management in Ghana, the nation’s strategies and programs are as follows:

An Environmental Protection Agency (EPA) was established in Ghana in 1994 and is equipped with adequate authority for environmental protection, management, and cooperation and collaboration in order to find common solutions to global environmental issues¹³⁰.

A National Environmental Action Plan (NEAP) has been created and the National Environmental Policy (NEP) was adopted in order to provide the broad framework for instilling the action plan and to warrant management of resources over the course of ten years (1991-2000). The NEAP adopted a precautionary approach to environmental management and encourages socioeconomic development in order to achieve sustainable

¹²⁸ UNEP, 2005; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 39.

¹²⁹ Kimball, 2005; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 39.

¹³⁰ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 39.

national development. The Ghana Environmental Resource Management Programme (GERMP) works in association of NEAP and helps to achieve the same goals¹³¹.

In response to UNCED (1992) and Agenda 21, Ghana is involved in the following:

The Integrated Coastal Area Management Program (ICAM), which was created to aid countries in building marine scientific and technological capabilities¹³².

The International Geosphere Biosphere Program (IGBP), which was designed in 1987 to manage international research of “interactions between Earth’s biological, chemical and physical processes and their interactions with human systems.”¹³³

The Land and Ocean Interactions in the Coastal Zone program (LOICZ), which aims to support coastal environment sustainability and adaptation to global transformation.

The Gulf of Guinea Large Marine Ecosystem Regional Project is designed to match fish harvests to the needs of human consumption and receive foreign exchange in order to govern the infringement of coastal zone and to restore mangroves and sea grass beds¹³⁴.

The Lower Volta Mangrove Project (LVMP) of Ghana, which attempts to restore coastal wetlands vegetation through reforestation of tarnished wetland catchments, education, and development of surrounding communities¹³⁵.

¹³¹ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 39.

¹³² Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 39.

¹³³ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 39.

¹³⁴ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 40.

The WACAF programme of the Regional Seas Programme of UNEP, which produces projects pertaining to pollution, coastal degradation, contingency planning, assessments of environmental impact, and environmental legislation¹³⁶.

The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, which was adopted in 1995 and is designed to prevent erosion of the marine zone from activities on land. This is achieved by educating States on the importance of preserving and protecting the marine environment. “It is unique in that it is the only global initiative directly addressing the connectivity between terrestrial, freshwater, coastal and marine ecosystems.”¹³⁷

The local stakeholders who provide the most valuable strategic information and details on the situation of Ghana’s coastal region include the Accra Metropolitan Assembly (AMA), the Tema Metro-Solid Waste Management Department, the Ministry of Environmental Science and Technology and, the Environmental Protection Agency (EPA). All of these organizations were designed to improve the quality of life of the community and preservation of the environment¹³⁸.

Efforts to Improve the Economic Sector in Ghana

¹³⁵ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 40.

¹³⁶ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 40.

¹³⁷ UNEP, 1999; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 40.

¹³⁸ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 59.

A new World Bank Group Country Partnership Strategy (CPS) was authorized by the Bank in September 2013. The aim of the Ghana Country Partnership strategy FY13-FY16 is to aid the government in sustaining economic growth, reduce poverty and increase shared prosperity. The CPS aims to support Ghana's prospects to lower middle income status, identify origins of inequality, and increase access to International Bank for Reconstruction and Development (IBRD). The CPS program meet three criteria: enhancing economic institutions, increasing competitiveness and job creation and protecting the poor. Coordination between the World Bank Group members is critical in supplying the CPS program to alleviate extreme poverty and increase shared prosperity over the next four years.

The CPS intertwines investment operations in infrastructure, human development and competitiveness. Infrastructure focuses on trunk, feeder roads, urban and rural water sanitation and energy. Human development hones in on the national social protection network, the advancement of the National Health Insurance Authority and the enhancement of professional training.

Ghana is a critical stakeholder in the regional projects. The country is important in the areas of transport, energy, agriculture and trade. In transport, two regional passages are being supported by other donors, the Abidjan Lagos corridor and the Bamako Ouagadougou Tema corridor. In energy, Ghana has a critical role for the West African Power Pool has engineered a power transmission map that interrelates the region. In agriculture, the West African Agricultural Productivity Program is circulating novel methods to local crops. In addition, the West African Regional Fisheries Project is shared with the other members. In the future, the key area of engagement on Ghana's agenda is

trade and the eradication of non-tariff barriers in ECOWAS trade, specifically pertaining to agriculture, manufacturing and services¹³⁹.

The International Finance Corporation (IFC), a member of the World Bank, in Ghana has a plan that aims to enhance competitiveness of the private sector. The investments and suggested services include infrastructure services and the commercial agriculture development. Infrastructure services include power, water and sanitation, financial sector and small and medium enterprise access to finance. In addition, the IFC has investments in the real sectors, including manufacturing, tourism, mining, health and education. Moreover, this strategy has investments that are congruent with the climate change agenda¹⁴⁰.

The Country Assistance Strategy Completion Report assessed the advancement the World Bank assistance to Ghana in FY08-FY12. There was positive progress toward FY08-FY11 Country Assistance Strategy (CAS), with the most critical achievement in macroeconomic stability, specifically in the rebased GDP and the non-oil GDP fiscal deficit has been reduced. Improvements were experienced in the agricultural sector through Agricultural Development Policy lending. Crop yield has increased substantially in certain agricultural staples, such as maize, rice, sorghum, millet, and cassava.

Application of fiscal models pertaining to the management of natural resources has enabled modification of the method of computing royalties and reduction of specific

¹³⁹ The World Bank. Ghana Overview. 2014 [cited April 20 2015]. Available from <http://www.worldbank.org/en/country/ghana/overview#2>

¹⁴⁰ The World Bank. Ghana Overview. 2014 [cited April 20 2015]. Available from <http://www.worldbank.org/en/country/ghana/overview#4>

permissible deductions for the mining companies, and has supported proposals geared toward revising regulations.

The Land Administration Project allows for the reduction of turn-around time for land title administration significantly. In energy supply, the electrification rate of Ghana increased, and in health, rate of babies born with HIV contracted from their mothers decreased substantially.

Education is typically correlated to greater concern for the environment; however, primary education remains low in Ghana. Access to education in the country has been supported by the Ghana Partnership for Education project, which is financed by the World Bank. The Council for Technical and Vocational Education and Training (COTVET) was designed to build skills from workers with an emphasis on demand and is supported by the Ghana Skills and Technology Development Project.

The Ghana Social Opportunities Project enabled the Livelihood Empowerment Against Poverty Program (LEAP) was implemented for the extreme poor.

The Information and Communications Technology sector (ICT) has seen substantial progress. The government's proactive policy and regulatory interventions, funding from the World Bank Group and other development partners, and increasingly competitive private sector leads to enhanced investment, high telephone penetration rate, a reduction in local and international call rates, and a decrease in internet access prices. Moreover, ICT jobs have increased by over 50%. The e-Ghana project is subsidizing these successes by supporting critical applications, skills development, and regulatory institutions.

Less progress was illustrated in private sector development, transport, sanitation and public sector reform. For example, the ratio of and credit to the private sector and claims on government fell short of the target of 70% by 15%. In transport, the percentage of road in good condition, according to the International Roughness Index, increased by 5%, but still fell short of the target of 80%. In sanitation, the amount of people that were provided with sanitation facilities halved the target of 100,000 people. In addition, in public sector reform, the “consolidation and comprehensiveness of reliable government fiscal reports, based on GFSM2001 reporting standards, for quality economic decision making was not met and in the related sector of evidence-based policy-making was not met, i.e. Annual Progress Reports (APRs) were not available for all sectors with gender disaggregation of key indicators by 2012.”¹⁴¹ Ultimately, 61% of the 54 indicators chosen to measure progress towards achieving CAS objectives revealed “good progress,” and 44% of the indicators “reached their target.”¹⁴²

Other recent projects implemented by the World Bank include:

The Additional Financing for Ghana Oil and Gas Capacity Building Project is designed to enhance public management and regulatory ability while increasing transparency; and improve technical skills in Ghana’s developing oil and gas sector. This will allow for sound environmental practices and sustainable development.

The Sustainable Land and Water Management Additional Financing Project for Ghana was designed to increase the area encompassed in sustainable land and water

¹⁴¹ The World Bank. Ghana Overview. 2014 [cited April 20 2015]. Available from <http://www.worldbank.org/en/country/ghana/overview#3>

¹⁴² The World Bank. Ghana Overview. 2014 [cited April 20 2015]. Available from <http://www.worldbank.org/en/country/ghana/overview#3>

management methods in selected watershed. Sustainable land and water management practices will be ensured by the additional financing that will go toward decreasing land degradation and improving the maintenance of biodiversity in the Kulpawn-Sissili and Red Volta watersheds.

OBA Urban Sanitation Facility for the Greater Accra Metropolitan Area (GAMA) is designed to improve sanitation to those living in low income communities in the GAMA. This will be made possible through providing OBA subsidies to Public Disclosure Authorized Public service providers to incentivize providing access to enhanced sanitation to low-income households¹⁴³.

CHAPTER 3: BACKGROUND ON INSTITUTIONS

Features of the Ghanaian Government

It is important to understand the features of contemporary Ghanaian political parties in order to conceive of the obstacles to coastal management policymaking. First, Ghana, like most African countries has many registered political parties that are often small and revolve around the interests of one person. This multiplicity leads to fragmentation rather than party competition. Second, many African parties are based on ethnic or regional loyalties¹⁴⁴. As a result, ethnic parties tend to defend the interests of their ethnic group in the national system. Third, many African parties lack political programs. According to Thandika Mkandawire (1999), “African democracies are

¹⁴³ All Projects: Ghana. In The World Bank [database online]. 20152015]. Available from <http://www.worldbank.org/en/country/ghana/projects/all?qterm=&tf=y> (accessed April 21, 2015).

¹⁴⁴ Decalo 1998; Erdmann and Engel 2007; Widner 1997; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 147.

essentially ‘choiceless,’ that is, there is very limited range of policy choice available to their governments given the constraints of debt servicing, donor conditionality, and primary-commodity reliance.”¹⁴⁵ In addition, there may be little incentive for an African political party to suggest new policy due to the heterogeneity of ethnicity and the desire for policymakers to homogenize ethnic plurality. Specific policies may create divisions among ethnic groups, which prevent leaders from doing so. In addition, leaders may not want to govern, but would rather enjoy the perks of being in office without exercising office duties¹⁴⁶. Fourth, African political parties have limited institutionalization. Their bureaucratic organization is often weak and temporary and they are unable to provide accurate information on party members due to lack of formal membership or belonging to other parties¹⁴⁷. Their funding base tends to be narrow, and is often derived from the private wealth of their founder, or from democracy-promotion donor programs. Consequently, their formal connection to society is poorly developed and citizen involvement is low¹⁴⁸. Fifth, the lack of organizational structure stems from their patronage features, or informal relations between their members and their leaders. Loyalty to leaders leads to a deficit to democracy. Lastly, the imbalance between the party in power and those in opposition makes it so that opposition parties are powerless.

¹⁴⁵ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 147.

¹⁴⁶ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 148.

¹⁴⁷ Erdmann 2007; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 148.

¹⁴⁸ Erdmann 2007; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 148.

Essentially, all of these features of African political parties can be explained by neopatrimonialism, the existence of informal and formal institutions in African politics¹⁴⁹.

Ghana uses parliamentary structures, such as second chambers, to enable the insertion or co-optation of customary powers into the political system, providing some degree of formalization to the “mixed” nature of African government¹⁵⁰. In fact, authorities in Ghana reserve 30 percent of the seats of district assemblies for chiefs¹⁵¹. The inclusion of customary powers has allowed traditional leaders to grow their roles in the areas of developmental projects and fundraising. Contrary to popular belief, these assemblies are mostly new and the observable outcome of the resurrection of customary authorities that has emerged due to the democratization wave of the 1980s.

The amount of resources available for MPs plays a large role in determining the quality of the legislature. In countries where central government controls MP salaries (e.g., Ghana), parliamentary effectiveness can be crippled by low wages. Staffan Lindberg and Yongmei Zhou (2009) on Ghana’s parliament suggests that other factors besides control of salaries by the executive might cripple the effectiveness of the legislature. They argue that Ghana’s parliament has developed a comparative advantage in the provision of private goods through clientelistic networks rather than as a legislating

¹⁴⁹ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 148.

¹⁵⁰ Sklar 1999; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 174.

¹⁵¹ Ray 1998; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 175.

body, because personal assistance and community development are what citizens hold their MPs most accountable for¹⁵².

Obstacles to Adopting Policies in Accra

There are several barriers to adopting effective environmental policies in Ghana, which is in part due to the nature of its political parties. Typical of African political parties, Ghanaian parties are characterized by weak institutions, limited lifespans, lack of ideological differentiation or clear policy agendas, and too much emphasis on a single leader (and therefore tend to be ethnically homogenous). While Ghanaian political parties occasionally provide political mobilization, they rarely reflect the policy preferences of their members¹⁵³. Weak governmental institutions present serious obstacles to adopting environmental policies in Ghana. These weaknesses, typical of many African systems, include a lack of powerful environmental agencies, opaque formal roles, weak legal systems, and the duality of formal and informal institutions.

The wave of democratization strengthened civil societies, the organized social space between the state and the family. “Civil society is an intermediary entity, standing between the private sphere and the state.”¹⁵⁴ The existence of formal and informal institutions can be beneficial or detrimental depending on how it is approached. Civil society assistance might encourage Africans to adopt practices that do not reflect local

¹⁵² Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 174.

¹⁵³ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 143.

¹⁵⁴ Diamond 1996; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 208.

dynamics or local aspirations. Several scholars analyze and refine civil society as it applies to Africa. For example, Celestin Monga (1996) has urged “attention to more informal and cultural forms of civil society.”¹⁵⁵ While informal institutions in many African countries stimulate political action among the people, they can sometimes conflict with civil society.

The lack of accountability and responsiveness of African political parties is likely due to the weak effective implementation of decentralization reforms and the capacity of several African states to maintain control of local politics despite donor pressure¹⁵⁶. A comparative study of Senegal, Cote D’Ivoire and Ghana, by Catherine Boone (2003a:356) shows that decentralization is as likely to “strengthen local power brokers and state agents” and empower local citizens¹⁵⁷. Boone argues that local patterns of institutional development are very similar to patterns of the pre-decentralization period, such that power configurations in rural societies and the way in which central governments interact with local elites have changed less than the formal reforms might suggest. According to Englebert and Dunn, the findings of many country case studies undertaken by the US Agency for International Development (USAID) have been very consistent with Boone’s.”¹⁵⁸

¹⁵⁵ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 121.

¹⁵⁶ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 370.

¹⁵⁷ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 172.

In order to implement effective environmental policy in Ghana, a strong legislative branch is essential. Despite Ghana's democratic status, the country's legislative branch is relatively weak. A study on African legislatures in "emerging African democracies" explored their features in Benin, Ghana, Kenya, Nigeria, Uganda, and South Africa and discovered that, within this sample, legislative power is not correlated to a country's overall degree of democracy¹⁵⁹. The "African legislature's project" did a comparative study across twenty sub-Saharan countries codifying the formal rules of each legislature. The main findings to date reveal the ways in which African politics operates and propose the limitations to legislative checks and balances. According to Englebert and Dunn, "The research suggests that the clientelistic nature of African politics privileges a political culture that emphasizes services to individuals and group constituencies rather than production and executive oversight."¹⁶⁰ The amount of resources available for members of parliament largely determines the quality of the legislature. In countries where central government controls members of parliament's salaries, such as Ghana, parliamentary effectiveness can be crippled by low wages.

The Role of the Political Elite

The political elite in Ghana are instrumental in policymaking, which is the result of prominent customary powers in the region. Some argue that the economic stagnation

¹⁵⁸ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 172.

¹⁵⁹ Barkan 2009a; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 173.

¹⁶⁰ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 173.

that Ghana experienced after the recovery of economic growth in the 1980s can be attributed to economic elite that are unwilling to neither make difficult decisions nor implement long-term decisions and policy actions of the political elite that are influenced by foreign aid. “Foreign aid and the aid system play a role in shaping the incentives of political leaders and civil servants as well as the parameters within which policies and initiatives must be produced and pursued.”¹⁶¹ Ruling elites in Ghana seek political stability, secure incumbency, and rapid economic development; however, maintaining power is among the most important for political elites in Ghana¹⁶². It is possible that political leaders may actually support certain widely accepted national goals, but in practice the exigencies of political survival incentivizes behavior that may undermine these goals. Political organization is required for a leader to gain and remain in power, which also requires funding. This is done through the creation of coalitions, or armed force, however, once in power most military dictators must go past the use of brute force. Coalitions are often required in order to broaden their political support. Ruling elites build coalitions through the extension of policy favors that improve the well-being of particular groups and individuals. In addition, ruling elites may trade policy influence and access to state benefits for funds used toward their ruling coalition. In other words, the methods for constructing ruling coalitions, such as mobilizing organizational support and

¹⁶¹ Whitfield, Lindsay. 2011. Competitive Clientelism, Easy Financing and Weak Capitalists: The Contemporary Political Settlement in Ghana. *Diis* 27:7.

¹⁶² Whitfield, Lindsay. 2011. Competitive Clientelism, Easy Financing and Weak Capitalists: The Contemporary Political Settlement in Ghana. *Diis* 27:8.

fostering patron-client relations, are contingent upon the financial resources that are available to ruling elites and the setting in which they function¹⁶³.

Ghana is among the many African countries that use parliamentary structures to facilitate the inclusion of customary powers into the political system, resulting in the fusion of formal and informal institutions¹⁶⁴. In Ghana, authorities reserve 30 percent of the seats of district assemblies for chiefs¹⁶⁵. The incorporation of traditional leaders has expanded their roles to new areas such as development projects and fundraising. “Although they invoke tradition, these assemblies are mostly new and the visible outcome of a process of resurgence of customary authorities that has come in the wake of the democratization wave of the 1990s¹⁶⁶. Democratization of British colonies exhibited greater custom participation, such as kingship, due to the unique nature of British colonization.

External Actors

Over the past several decades, many African governments have become increasingly detached from their domestic societies while simultaneously becoming more

¹⁶³ Whitfield, Lindsay. 2011. Competitive Clientelism, Easy Financing and Weak Capitalists: The Contemporary Political Settlement in Ghana. *Diis* 27:8.

¹⁶⁴ Sklar 1999; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 175.

¹⁶⁵ Ray 1998; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 175.

¹⁶⁶ Sklar 1999; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 175.

dependent upon external sources of support and legitimacy for survival¹⁶⁷. Therefore, the requests of the people are not always reflected in policy in Ghana. “For example, many have examined the ways in which international sovereignty became the pretext for ensuring external support for the maintenance of a growing cadre of corrupt and repressive regimes across the continent.”¹⁶⁸ Meanwhile, other scholars have examined the ways in which Africans repelled the state and its attempts to have complete control over the population¹⁶⁹. Frederick Cooper (2002:141) argues that this has been developing since colonization, as European states were incapable of extending their rule over the citizenry but used the colonial state to control “the interface of national and world economies.”¹⁷⁰ Following independence, African leaders maintained these “gatekeeper states.”¹⁷¹ Clapham (1996:256) claims this is what caused the “privatization” of Africa’s relationship with the rest of the world “not only through their subversion by private interests of politicians both inside and outside the continent, but through the displacement of traditional state-to-state relations as a result of the process of globalization.”¹⁷²

¹⁶⁷ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 315.

¹⁶⁸ Reno 1998; cited in Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 315.

¹⁶⁹ Trefton, Theodore. (ed.) 2004. *Reinventing Order in the Congo: How People Respond to State Failure in Kinshasa*. London: Zed.

¹⁷⁰ Cooper, Frederick. 2002. *Africa Since 1940: The Past of the Present*. Cambridge: Cambridge University Press.

¹⁷¹ Englebert, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 315.

In addition to minimizing potential environmental degradation, a regulatory framework may boost foreign direct investment in developing countries by multinational companies that operate in an ethical manner¹⁷³. Multinational corporations can provide developing countries with vital financial infrastructure for economic and social development. Consequently, these institutions may implement explicit codes of ethical conduct that may exploit the reliance of developing nations on foreign investors. The scale of investment is likely to be significant when a multinational company invests in a host country. This form of foreign direct investment may have advantages and disadvantages for the host country.

A disadvantage of foreign direct investment in developing nations could be the environmental impact that results from malpractices of some multinational companies. Certain multinational companies strive to produce efficiently and cheaply at the expense of the environment. These companies will often lobby governments to ensure that they can benefit from lax regulations. Due to their economic importance in the country, this lobbying is often effective. Some host nations are more concerned about the short-term economic benefit that results from foreign direct investment rather than the long-term costs to their country, such as depletion of natural resources.

However, not all multinational companies operate in an environmentally harmful manner. In fact, multinational companies that operate in an ethical manner can greatly

¹⁷² Englebort, Pierre, and Kevin Dunn. 2013. *Inside African Politics*. Boulder, Colorado: Lynne Rienner Publishers, 315.

¹⁷³ Yelapaala, K and S Ali (2005). Multiple scales of diamond mining in Akwatia, Ghana: Addressing environmental and human development impact. *Resource Policy*, 30(3), 145–155.

benefit the country. It is important to note that it is virtually impossible to develop without some aspect of environmental degradation as a result. If resources are not accessed, the host country will not benefit economically from them. Some argue that resource-rich countries suffer from the “resource curse,” The paradox that resource-rich countries tend to be poor, poorly governed and susceptible to violence¹⁷⁴. However, that is not always the case. 2013 marked an important year regarding the role of international transparency in ending the resource curse. Due to the passing of a European law with global reach, the advocacy of legally binding rules by the G81 and multinational mining companies, and the enhancement of a critical voluntary initiative adopted by 41 countries, 2013 will be regarded as the year that “a global standard for the extractive industries emerged.”¹⁷⁵ At the same time, there have been a number of impediments to accountability over natural resources, so there is still room for improvement. Nonetheless, in many cases, multinational companies create the means necessary for extracting these natural resources.

Civil Society and Democracy

Civil society is a key characteristic of democracy, which can improve the environmental situation in Ghana through more inclusive and open policy decisions. In 1948, the United Nations Declaration of Human Rights was adopted by the General Assembly, by which Article 21, Section 3 of the Declaration states that “the will of the

¹⁷⁴ West Africa Civil Society Institute, Ghana Anti-Corruption Coalition. 2011. *The state of civil society in Ghana: An assessment*. Africa: CIVICUS, 78.

¹⁷⁵ West Africa Civil Society Institute, Ghana Anti-Corruption Coalition. 2011. *The state of civil society in Ghana: An assessment*. Africa: CIVICUS, 78.

people shall be the basis of the authority of government, this will shall be expressed in periodic And genuine elections which shall be by universal and equal suffrage and shall be held by secret vote or equivalent free voting procedures.”¹⁷⁶ This established the basic global norms and standards regarding elections insofar that they are free, fair, and fairly frequent¹⁷⁷.

Donor governments and regional organizations are other international actors promoting electoral norms and standards that “give assistance to new and emerging democracies to improve the conduct of their elections.”¹⁷⁸ The top bilateral government entities influencing electoral norms include the US Agency for International Development (USAID), the Canadian International Development Agency (CIDA), the Swedish International Development Cooperation Agency (SIDA), the Norwegian Agency for Development Cooperation (NORAD) and the Danish International Development Agency (DANIDA). The leading multilateral organizations in this field include the European Union, the Organization for Security and Co-Operation in Europe (OSCE), the Organization of American States (OAS), the Commonwealth Observer Group and the Francophonie.

¹⁷⁶ Cheema, Shabbir G. 2005. *Building Democratic Institutions: Governance Reform in Developing Countries*, ed. Lynne Lipkind. The United States of America: Kumarian Press, Inc., 27.

¹⁷⁷ Cheema, Shabbir G. 2005. *Building Democratic Institutions: Governance Reform in Developing Countries*, ed. Lynne Lipkind. The United States of America: Kumarian Press, Inc., 28.

¹⁷⁸ Cheema, Shabbir G. 2005. *Building Democratic Institutions: Governance Reform in Developing Countries*, ed. Lynne Lipkind. The United States of America: Kumarian Press, Inc., 28.

International electoral norms are also promoted through international, regional and national nongovernmental organizations and political party institutes. For example, the international nongovernmental organizations, the International Institute for Democracy and Electoral Assistance (IIDEA) and the International Foundation for Election Systems (IFES) have drawn upon theoretical approaches to the conduct of elections and practical methods to provide technical expertise to election authorities¹⁷⁹. Nongovernmental organizations on the regional level, such as the West Africa-based Study and Research Group on Democracy and Economic and Social Development in Africa (GERRDES-Afrique), have gained credibility as “independent and impartial observers” of elections and the spread of democracy in the region¹⁸⁰. Finally, national nongovernmental organizations often work with international nongovernmental organizations to construct norms.

Nongovernmental Organizations

Nongovernmental organizations sometimes provide environmental protection in the absence of governmental assistance. Ghanaian NGOs provide important social services to impoverished communities, such as advocacy, delivery of social services, and micro-financing¹⁸¹. Due the prominence of poverty in Ghana, most NGOs aim to

¹⁷⁹ Cheema, Shabbir G. 2005. *Building Democratic Institutions: Governance Reform in Developing Countries*, ed. Lynne Lipkind. The United States of America: Kumarian Press, Inc., 28.

¹⁸⁰ Cheema, Shabbir G. 2005. *Building Democratic Institutions: Governance Reform in Developing Countries*, ed. Lynne Lipkind. The United States of America: Kumarian Press, Inc., 29.

¹⁸¹ Bawa, Sylvia. 2013. Autonomy and Policy Independence in Africa: A Review of NGO Development Challenges. *Development in Practice* 23 (4): 527.

alleviate poverty¹⁸². The services provided by NGOs are sought after in some cases by beneficiaries, which NGO officials that participated in this study suggest is due to the “timely and efficient fashion in which they provide basic social services.”¹⁸³ Moreover, impoverished communities in Ghana find NGOs more reliable than the government at providing basic goods and services¹⁸⁴. The two main types of NGOs functioning in Ghana are local NGOs and international NGOs. International NGOs and other charitable funding organizations partner with local NGOs and often provide the funding for projects¹⁸⁵. However, ownership of development projects through funding often weakens the autonomy of local NGOs regarding program choice, focus and management¹⁸⁶.

Uncompleted projects in rural communities are not rare in Ghana. Representatives for local NGOs in this study indicated that they sometimes use surplus funding from larger projects to complete projects that have been abandoned. In most cases, however, local and international NGOs often have to respond to donor program suggestions to

¹⁸² Bawa, Sylvia. 2013. Autonomy and Policy Independence in Africa: A Review of NGO Development Challenges. *Development in Practice* 23 (4): 526.

¹⁸³ Bawa, Sylvia. 2013. Autonomy and Policy Independence in Africa: A Review of NGO Development Challenges. *Development in Practice* 23 (4): 528.

¹⁸⁴ Bawa, Sylvia. 2013. Autonomy and Policy Independence in Africa: A Review of NGO Development Challenges. *Development in Practice* 23 (4): 528.

¹⁸⁵ Bawa, Sylvia. 2013. Autonomy and Policy Independence in Africa: A Review of NGO Development Challenges. *Development in Practice* 23 (4): 529.

¹⁸⁶ Bawa, Sylvia. 2013. Autonomy and Policy Independence in Africa: A Review of NGO Development Challenges. *Development in Practice* 23 (4): 529.

maintain the steady flow of aid and stay afloat as an organization. The autonomy of NGOs to have flexibility and implement programs varies depending on the partner¹⁸⁷.

In short, most NGOs in Ghana are not as autonomous as they should be to achieve poverty alleviation goals in their beneficiary communities. In some cases, NGOs in Ghana contribute to the marginalization of the poor due to the manner in which the poor are perceived and fabricated. These local NGOs inadequately represent the beneficiary community because of the superimposition of the donor's requests.

Another study shows that, despite the services that NGOs provide, "strengthening civil society can create political tensions which ultimately undermine development."¹⁸⁸ Many NGOs, particularly in the South of Ghana, assert that they represent the local communities, but have condescending attitudes towards them. NGOs that act in this manner hinder democratization and good governance¹⁸⁹. Moreover, state actors and institutions may "feel threatened" by the strengthening of the NGO sector. This occurs in

¹⁸⁷ Bawa, Sylvia. 2013. Autonomy and Policy Independence in Africa: A Review of NGO Development Challenges. *Development in Practice* 23 (4): 532.

¹⁸⁸ Mohan, Giles. 2002. The disappointments of civil society: The politics of NGO intervention in northern Ghana. *Science Direct* 21, (1), 10.1016/S0962-6298(01)00072-5, <http://www.sciencedirect.com/science/article/pii/S0962629801000725> (accessed April 8, 2015), 126.

¹⁸⁹ Mohan, Giles. 2002. The disappointments of civil society: The politics of NGO intervention in northern Ghana. *Science Direct* 21, (1), 10.1016/S0962-6298(01)00072-5, <http://www.sciencedirect.com/science/article/pii/S0962629801000725> (accessed April 8, 2015), 143.

the event that NGOs create programs that are similar to a “weak and under-funded local government system.”¹⁹⁰

Economic Situation

A right-based approach to development can facilitate decision-making and actions that reflect the wants and needs of the community. However, right-based development can be costly, which prevents many developing economies, such as Ghana from establishing it. Countries with stagnant economies lack the financial capacity to fulfil basic human rights for citizens. Despite this, states should uphold their responsibility to “ensure realization of the right to development in proportion to the resources of the society.”¹⁹¹ The allocation of resources, consideration of basic human rights in policy and guaranteeing fair sharing benefits are the main areas of concern. This means that building the social sector should be a priority. It is, thus, the obligation of the state to encourage the realization of economic, social and cultural rights, as “it is not guaranteed by every state today.”¹⁹²

According to the World Bank, Ghana has become a “stable and mature democracy” over the past twenty years. It continues to perform well on democratic

¹⁹⁰ Mohan, 1996b; cited in Mohan, Giles. 2002. The disappointments of civil society: The politics of NGO intervention in northern Ghana. *Science Direct* 21, (1), 10.1016/S0962-6298(01)00072-5, <http://www.sciencedirect.com/science/article/pii/S0962629801000725> (accessed April 8, 2015), 146.

¹⁹¹ Cheema, Shabbir G. 2005. *Building Democratic Institutions: Governance Reform in Developing Countries*, ed. Lynne Lipkind. The United States of America: Kumarian Press, Inc., 111.

¹⁹² Cheema, Shabbir G. 2005. *Building Democratic Institutions: Governance Reform in Developing Countries*, ed. Lynne Lipkind. The United States of America: Kumarian Press, Inc., 111.

governance, emerging from a strong multi-party political system, evolving media freedom, and strong civil society activism. The Electoral Commission declared the candidate for the National Democratic Congress (NDC), the incumbent President John Mahama, as the winner with 50.7% of the vote in the most recent elections, which were held in 2012. NDC also won a parliamentary majority; however, the result was challenged in the courts by the New Patriotic Party (NPP), which is the main opposition party. In August 2013, after eight months of debate in the Supreme Court of Ghana, the election results were upheld. The “trend of stronger governance and democratic consolidation” was solidified when the NPP peacefully abided by the ruling that upheld President John Mahama’s victory¹⁹³.

Moreover, in the 2012 report of the World Wide Governance Indicators, Ghana was placed between 50th and 60th percentile on political stability, government effectiveness and regulatory quality, rule of law, control of corruption and voice accountability. This is a reflection of the improving atmosphere for democratic governance, in addition to increased effectiveness of public institutions and gradual economic growth, resulting in Ghana’s lower middle-income status¹⁹⁴.

Ghana’s economy slowed down in 2013 and 2014 due to high fiscal and current account deficits; however, the country’s growth prospects are positive in the long-run. Economic models predict average per capita growth rates of 4 to 6 percent in 2014-24, which is partly due to future production of gas and exploration for new oil fields, thereby

¹⁹³ The World Bank. Ghana Overview. 2014 [cited April 15 2015]. Available from <http://www.worldbank.org/en/country/ghana/overview#1>.

¹⁹⁴ The World Bank. Ghana Overview. 2014 [cited April 15 2015]. Available from <http://www.worldbank.org/en/country/ghana/overview#1>.

increasing macroeconomic stability¹⁹⁵. Investment, mineral oil rents, and macroeconomic factors such as inflation and government spending are volatile in the Ghanaian economy; therefore, it is difficult to predict future growth¹⁹⁶.

CHAPTER 4: NEEDS AND INITIATIVES

Local Involvement in the Decision-Making Process

Involving indigenous people in impact assessment studies is critical because it equalizes the opinions of the proponents, and it presents a non-technical approach to environmental decision-making¹⁹⁷. Indigenous knowledge is “invaluable” because it provides baseline data, including historical and current behavior of local ecosystems¹⁹⁸. Moreover, indigenous people could provide important information regarding the identification of priorities for a given project, proper implementation, and monitoring methods for impacts in the community. Thus, there is a need for a holistic approach to ecological policymaking in order to foster successful policy in the Greater Accra Region¹⁹⁹. External scientific knowledge and indigenous ecological knowledge are not

¹⁹⁵ The World Bank. Ghana Overview. 2014 [cited April 15 2015]. Available from <http://www.worldbank.org/en/country/ghana/overview#1>.

¹⁹⁶ The World Bank. Ghana Overview. 2014 [cited April 15 2015]. Available from <http://www.worldbank.org/en/country/ghana/overview#1>.

¹⁹⁷ Gibson, 1990; cited in Appiah-Opoku, Seth. 2001. Environmental impact assessment in developing countries: The case of Ghana. *Science Direct* 21 (1): 59-71.

¹⁹⁸ Johannes, 1993; cited in Appiah-Opoku, Seth. 2001. Environmental impact assessment in developing countries: The case of Ghana. *Science Direct* 21 (1): 59-71.

mutually exclusive; however, they should be used in conjunction with each other so as to complement one another. Examples of how to achieve this include community hearings and public discussions that will most likely facilitate the utilization of indigenous ecological knowledge in Ghana. Public discussions and consultations could be executed through roundtable discussions where the community was able to communicate with the Commission in their own language and in their own way. This would give a proper indication to stakeholders and beneficiaries of what the impact would be of the environmental policy in the Ghanaian community²⁰⁰. In short, expert opinions, in the formal sense, could be complemented by individuals that are considered local experts in the ecological makeup of their community.

The decision-making process is imperative to the success of the environmental policy in the community. If a proponent is dissatisfied with a decision made by the EPA in the course of project implementation, he or she should be able to appeal to the minister that is responsible for environmental protection. From there, the minister should consider this appeal and formulate a final decision, based on the input from other board members. Thus, the board should be composed partly of indigenous people who are considered ecological experts by their local community. Including local people in this process encourages local participation, accountability and bottom-up approaches to environmental decision-making. This is important for the Greater Accra Region, because

¹⁹⁹ Borque et al., 1992; cited in Appiah-Opoku, Seth. 2001. Environmental impact assessment in developing countries: The case of Ghana. *Science Direct* 21 (1): 59-71.

²⁰⁰ Berger, 1984; cited in Appiah-Opoku, Seth. 2001. Environmental impact assessment in developing countries: The case of Ghana. *Science Direct* 21 (1): 59-71.

it fosters a greater understanding of local resource use and it allows the assessment team to access local value sets for assessing the project impacts on the local community. The most effective way to preserve invaluable indigenous knowledge in Ghana is to invest in education in these areas of interests²⁰¹.

Education

Thorough education is the key to addressing the issue of marine litter in the short-term and medium-term. Moral suasion includes using tools such as education, publicity and social pressure to bring about a change in behavior.”²⁰²Visual amenity degradation can positively correlate to an individual’s recreational use of the land; therefore, there is a need for increased sensitivity toward marine litter in the Greater Accra Region, which can be achieved through education. A coastal management policy that addresses the existence value, bequest value and altruistic value in a way that enhances the non-use value will increase beach usage and create a culture of properly disposing of litter. Communities that are educated on the detriments of marine debris and other environmental issues will have increased sensitivity toward marine litter and higher levels of accountability and cooperation. Making available and utilizing tools such as brochures, stickers, pamphlets,

²⁰¹ Appiah-Opoku, Seth. 2001. Environmental impact assessment in developing countries: The case of Ghana. *Science Direct* 21 (1): 59-71.

²⁰² Aryee, Benjamin, Bernard K. Ntibery, and Evans Atorkui. 2003. Trends in the small-scale mining of precious minerals in Ghana: A perspective on its environmental impact. *Journal of Cleaner Production* 11 (2): 131-40.

and posters informing the public of the detriment of litter in a marine environment could effectively reduce marine debris²⁰³.

Another way to enhance sensitivity toward marine debris is through beach cleanups, which are essential to tackling the marine debris problem on Ghana's beaches through changing social norms and perceptions of the problem. Multi-agency campaigns promoting clean beaches must be inaugurated and relevant data must be transparent and available to the general public, participants and stakeholders. In addition, beach cleanups of a greater magnitude by the EPA and other environmental NGOs should be initiated in order to increase understanding of regional differences and identify the main obstacles of marine debris. Once this is established, resource allocation and identification will be more effective and appropriate for the given situation. These efforts will only be enhanced with the cooperation and coordination by the government of Ghana, so that appropriate measures are being taken and campaigns are strong enough to tackle marine debris²⁰⁴.

Continued and Frequent Analysis

The main method of controlling marine litter is to reduce the input of litter through educational, behavior and enforcement strategies. These primary approaches require

²⁰³ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 91.

²⁰⁴ Ibid., 93.

adequate information on the sources of marine debris²⁰⁵. Beach surveys are instrumental in measuring beach debris amounts and are critical for information and fostering community-wide understanding of marine debris²⁰⁶. In the long-term, water quality should be examined on a regular basis by the Ministry of Environment and Technology in concurrence with the Environmental Protection Agency in order to avoid the eruption of disease. A beach should be temporarily closed off in the event that monitored water quality is considered life threatening.

Marine debris monitoring, according to UNEP and IOC, consists of repeated surveys of beaches, sea bed and/or surface waters in order to identify litter quantities so that information can be compared with starting-point data to evaluate whether transformations occur through time and/or as a result of management decisions²⁰⁷.

Environmental indicators show that marine litter continues to grow, despite regional, national and international efforts to combat the issue. This is largely due to the inadequate implementation of existing regional, national and international regulations and standards that could foster significant improvements to the situation. Another reason why

²⁰⁵ Chesire & Westphalen, 2007; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 34.

²⁰⁶ Chesire & Westphalen, 2007; IOC, 2009; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 34.

²⁰⁷ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 44.

the situation continues to get worse is the unawareness of main stakeholders and the general public²⁰⁸.

Authoritative Monitoring

Another long-term solution to marine debris in Ghana is the implementation of suitable policy initiatives and regulations and the continuation of existing ones to facilitate compliance with laws and regulations by law enforcement agencies. The police service is critical to managing marine debris in Ghana's coastal region²⁰⁹. For example, to ensure that small-scale gold mining is environmentally sustainable, monitoring and policing may be necessary. Currently, many small-scale gold miners in Ghana are illegal and cannot be identified and the penalties for relevant illicit activity are inadequate. Therefore, authoritative forces must make monitoring these environmental violations a priority²¹⁰.

Nongovernmental Organization Accountability

Nongovernmental organizations can be influential in providing education and other services to the public; however, they are not very effective on their own. Cooperation and collaboration between NGOs and the government will yield the best

²⁰⁸ UNEP, 2005; cited in Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 45.

²⁰⁹ Himans, Irene P. 2013. Assessment of Marine Debris and Water Quality Along the Accra-Tema Coastline of Ghana. MPHIL., University of Ghana, 92.

²¹⁰ Aryee, Benjamin, Bernard K. Ntibery, and Evans Atorkui. 2003. Trends in the small-scale mining of precious minerals in Ghana: A perspective on its environmental impact. *Journal of Cleaner Production* 11 (2): 131-40.

results. Approximately US\$135 billion was put toward development aid by Organization for Economic Co-operation and Development [OECD] countries in 2008, which was projected to double each year by 2015²¹¹. This is in congruence with donations from private individuals, charitable foundations and corporations. NGOs incur much of this aid in order to fund first-rate projects. The effectiveness of aid to beneficiaries may vary depending on the accounting and accountability mechanisms implemented by NGOs delivering development aid. The prevailing literature on development NGOs strongly agrees with accountability mechanisms that provide accountability to, and assess the perceptions of, beneficiaries and NGO fieldworkers²¹². Doing so will increase the effectiveness of NGO aid delivery by acknowledging the observations and experiences of individuals that are closest to the delivery of aid.

CHAPTER 5: RECOMMENDATIONS AND LESSONS FROM SENEGAL

Long-Term Education and Accountability

The long-term success of certain projects may sometimes conflict with the strict reporting that is often required by donors. It is imperative that these donors operate under the understanding that “highly beneficial long-term outcomes cannot always be delivered in a timescale to suit the donor communities’ shorter-term reporting demands and

²¹¹ Agyemang, Gloria, Mariama Awumbila, Jeffrey Unerman, and Brendan O’Dwyer. 2009. NGO Accountability and Aid Delivery. *The Association of Chartered Certified Accountants* (110): 5.

²¹² Agyemang, Gloria, Mariama Awumbila, Jeffrey Unerman, and Brendan O’Dwyer. 2009. NGO Accountability and Aid Delivery. *The Association of Chartered Certified Accountants* (110): 5.

expectations.”²¹³ One suggestion for avoiding this issue is for donor governments to implement long-term educational programs at home, so that electorates understand the benefits of long-term aid rather than expecting results in the short span of an electoral cycle²¹⁴. Despite the importance of quantified indicators by interviewees, sometimes such indicators “dominate and obscure” qualitative information regarding performance²¹⁵. Qualitative information is vital to the analysis of performance metrics. In order to address the tendency for donors to ignore qualitative evidence, it is recommended that all upward-accountability mechanisms strive for a combination of quantitative and qualitative performance indicators²¹⁶. Moreover, facilitating debates and discussions with NGO officers in the field and beneficiaries to identify suitable performance indicators for projects²¹⁷. Another issue with upward reporting mechanisms is that they rarely provided scope, or hindered, the reporting of delivery aid project failures and the resulting consequences. The fieldworkers in this study emphasize the importance for NGOs and donors to understand these consequences and failures in order to improve future projects²¹⁸. This is made possible through the reporting of mistakes and failures of

²¹³West Africa Civil Society Institute, Ghana Anti-Corruption Coalition. 2011. *The State of Civil Society in Ghana: An Assessment*. Africa: CIVICUS, 6.

²¹⁴ Ibid., 6.

²¹⁵ Ibid., 6.

²¹⁶ Ibid., 6.

²¹⁷ Ibid., 6.

²¹⁸ Ibid., 6.

projects. It is essential to acknowledge the perceived failures of projects rather than providing punishments in order to encourage transparency and the flow of this sort of information. Accountability problems have arisen due to partnership arrangements regarding the priorities between international NGO local branches and those of the local NGOs allocating the services. Therefore, it is recommended that the responsibilities of the two parties are translucent from the beginning²¹⁹.

This study detected several areas for improvement regarding downward-reporting mechanisms, as well. One issue in aid effectiveness is due to unequal power between NGOs and beneficiaries. A remedy for this issue is to encourage NGO managers and fieldworkers to facilitate practices that strive to counterbalance the adverse effects of “power imbalances” between NGOs and beneficiaries²²⁰. NGO managers should establish mechanisms to best allocate accountability between NGOs, NGOs should involve a wider scope of stakeholders in the yearly planning and budgeting of projects (beneficiaries should be more involved), NGOs should foster discussion and understanding of activity through the use of local radio, and NGOs should broadcast project activities through documentaries that include beneficiaries. Moreover, this study argues that it is effective to develop success stories that explain the previous situation and the improvements that have been made possible through the NGOs projects. It is important that NGOs make clear what is expected of the communities in which the project is implemented through conversations and arrangements between NGOs and

²¹⁹ Ibid., 6.

²²⁰ Ibid., 6.

communities before the commencement of the project of the accountability mechanisms that will be implemented and the information that each party should obtain. Furthermore, the use of peer review mechanisms developed by the NGO may help to identify the best practices and advise NGOs that are operating ineffectively. These “lateral accountability mechanisms” could pressurize international NGOs if they determine that practices at other NGOs would benefit their own performance. Automatic feedback to NGOs, officers in the field and beneficiaries should be provided by donors²²¹.

Improved Infrastructure

Improved infrastructure of Ghana’s waste management system could greatly improve water quality and sanitation of the region. Dakar has shown improvements in water quality in recent years, which is closely related to proper waste management. In a comparison of a sewer based (SB) systems with sludge and a fecal sludge management (FSM) system in Dakar, it was concluded that FSM is less expensive and attractive to households. This is because FSM disperses the costs across households, private companies, and the utility. Additionally, this study found that “SB was 40 times more expensive to implement for the utility than FSM.” The results show that sanitation can be affordable through the use of FSM, whereas the cost of SB systems deters low-income countries from adopting that infrastructure²²².

Financial Incentive

²²¹ Ibid., 6.

²²² Dodane, Pierre-Henri, Mbaye Mbéguéré, Ousmane Sow, and Linda Strande. 2012. "Capital and Operating Costs of Full-Scale Fecal Sludge Management and Wastewater Treatment Systems in Dakar, Senegal." *Environmental Science & Technology* 46, no. 7: 3705-3711. GreenFILE, EBSCOhost (accessed April 16, 2015).

Ghana's Environmental Financial Assurance (EFA) policy that is modeled after Kahn *et al.* (2001) addresses environmental degradation due to mining²²³. "Kahn *et al.* propose the use of a performance bond together with insurance policies to ensure mine closure does not impact negatively on a population."²²⁴ An environmental performance bond is a deposit that potential polluters and violators of environmental regulations are required to pay to an environmental fund. The goal of these bonds is to provide financial incentive to the industry, as that will likely encourage them to adhere to environmental requirements. Furthermore, performance bonds can enhance effective EFA compliance, because the bonds are already being controlled and monitored by the government. In the event non-compliance, the government is able to use the funds to rehabilitate mines. Kahn *et al.* (2001) contends that the bond's economic value should equal the cost of the measures of compliance for optimum effectiveness.

In addition, government participation and willingness should improve in order for its agencies to experience the effective implementation of policy. The Environmental Protection Agency, for example, should be endowed with the necessary human resources to enforce monitoring and regulation. Moreover, it is suggested that mining operations should not continue without EFA concurrence of all parties. Research shows that an

²²³ Twum, Eric. 2013. Barriers to the Benefits, Efficient and Effective Regulation of Environmental Financial Assurance Policy in Developing Countries: Case Study of Ghana. *Journal of Environmental Assessment Policy & Management* 15 (3) (September): 1-23.

²²⁴ Twum, Eric. 2013. Barriers to the Benefits, Efficient and Effective Regulation of Environmental Financial Assurance Policy in Developing Countries: Case study of Ghana. *Journal of Environmental Assessment Policy & Management* 15 (3) (September): 1-23.

obedient background in a multinational company's home country does not always result in the same compliance in a developing country, such as Ghana. The "polluter pays" principle is recommended as a regulation measure for mineral extraction²²⁵. The government is ultimately responsible for enforcing this punishment due to its involvement in the approval of policies and regulations, the development of institutions and the encouragement of sector specific projects and programs. Using companies that failed to comply with environmental regulations as an example could be very effective in encouraging other companies to comply. In addition, repercussion, such as fines, for companies that do not comply with EFA regulations must be substantial, but not so much so that those involved will turn to corrupt practices. An example of an appropriate repercussion is requiring complete postings of bonds in Ghana to "cover all reclamation activities or forcing companies to cease operations when they are in the middle of accruing profits from their investments."²²⁶ Currently in Ghana, non-compliance repercussion is not significant enough to deter companies for defaulting on EFA regulations.

Increased Communication among Stakeholders

Similar to Ghana, fishing is very important to Senegalese economy and society.

The fishing sector reduces the balance of payments deficit, decreases unemployment, and

²²⁵ Twum, Eric. 2013. Barriers to the benefits, efficient and effective regulation of environmental financial assurance policy in developing countries: Case study of Ghana. *Journal of Environmental Assessment Policy & Management* 15 (3) (September): 1-23.

²²⁶ Twum, Eric. 2013. Barriers to the benefits, efficient and effective regulation of environmental financial assurance policy in developing countries: Case study of Ghana. *Journal of Environmental Assessment Policy & Management* 15 (3) (September): 1-23.

contributes to the food security of the nation. However, Senegal has faced overfishing, which has contributed to poverty and other socioeconomic tensions in the country. As a result, the United Nations Environment Programme (UNEP) intervened to work in collaboration with Enda Diapol and the Centre de Recherches Océanographiques de Dakar-Thiaroye (CRODT/USRA) and the Ministry of Fisheries to conduct a study of Senegalese fisheries and aide Senegal in developing conservation measures to achieve sustainable management of Senegalese fisheries. With the cooperation of local fishermen, industry representatives and government officials, the proposals of this study exemplify a commitment to obtaining a sustainable management of fisheries. The proposals presented in the study are to “(i) restrict access through the establishment of fees, fishing zones and the involvement of local councils, and (ii) improve the enforcement of existing regulations.” The two main measures underlined in this project are monitoring resource access for small-scale fishing and developing a discussion forum on regulations in the fishing sector. Moreover, achieving these proposals at a local level is a vital step toward reaching the goals outlined by government leaders at the World Summit on Sustainable Development toward restoring depleted fishery stocks²²⁷.

According to UNEP Senegal is “especially sensitive to the effects of global warming,” due to the large portion of its territory being semi-arid²²⁸. However, Senegal has shown that achieving a green economy is a priority. In June 2014, Senegal joined the

²²⁷ United Nations Environment Programme. *Policy Implementation and Fisheries Resource Management: Lessons from Senegal*. http://www.imcsnet.org/imcs/docs/policy_implementation_and_fish_res_mgmt_senegal_lessons.pdf . 2004. 1-97.

²²⁸ United Nations Environment Programme. 2015. *Partnership for Action*.

Partnership for Action on Green Economy (PAGE), which fosters collaboration among the International Labour Organization (ILO), United Nations Development Programme (UNDP), UNEP and United Nations Institute for Training and Research (UNITAR) to encourage member countries to adopt policies geared toward sustainable development and eradicating poverty. Support for PAGE will be based on adopting the green economy characteristics of the country’s “Plan Senegal Emergent” (PSE), which will be part of Senegal’s development strategy until 2024.²²⁹

PAGE expands the resources available to each member country, such as research, intellect, open policy dialogues among governments, development building and support for policy construction and implementation²³⁰. PAGE creates the conditions for “exchanging experience, technical information and knowledge as well as exploring the advantages of new partnerships between governments, the private sector, civil society and development agencies.”²³¹ Bilateral and multilateral collaboration generates resources that are limited to countries, such as Senegal and Ghana, which allow for necessary environmental change.

It is also important for civil service organizations to foster greater collaboration with each other in order to increase effectiveness. Civil service organizations respond to social interests through the following ways: “providing social amenities, undertaking

²²⁹ United Nations Environment Programme. 2015. *Partnership for Action*.

²³⁰ United Nations Environment Programme. 2015. *Partnership for Action*.

²³¹ United Nations Environment Programme. 2015. *Partnership for Action*.

voluntary work, and influencing social norms and attitudes.”²³² However, there is usually a lag time before results become evident. There are also barriers to greater impact, such as an unequal focus on service provision, non-genuine civil service organizations, minimal local ownership of decisions and actions, the short lifespan of programs, and competition for funds among civil service organizations²³³. In addition, the media does not fulfill its potential to impact development issues. Limited collaboration between the media and civil service organizations is regarded as a reason for the low impact on policy and development. Stronger collaboration between civil service organizations and the media could foster a greater impact by revealing research results of civil service organization to citizens, for example.

The recommendations put forth by this study on marine debris in the Greater Accra Region are increased cooperation between civil service organizations; less dependence on foreign donors for funding and more focus on generating funds locally to fund their activities; and civil service organizations should develop their human resource functions in order to compensate for high attrition levels, and increase the capacity of staff members by attracting experienced staff²³⁴.

In a study on accountability and aid delivery, a broad range of accounting and accountability mechanisms are used across the participating NGOs. The formal upward

²³² West Africa Civil Society Institute, Ghana Anti-Corruption Coalition. 2011. *The State of Civil Society in Ghana: An Assessment*. Africa: CIVICUS, 4.

²³³ *Ibid.*, 4.

²³⁴ *Ibid.*, 4.

accountability mechanisms for NGOs include “annual reports, interim reports, performance assessment reports (written during projects), and performance evaluation reports (written at the end of individual projects).”²³⁵ The downward accountability to beneficiaries includes “community consultations and dialogues, participatory reviews, and social auditing.”²³⁶ Fieldworkers predicted that several upward-accountability mechanisms hinder the effectiveness of some aid projects²³⁷. One of the issues with upward accountability mechanisms is the potential for inflexible reporting formats that limit reporting to international NGOs and donors the comments of officers and beneficiaries in the field²³⁸. In addition, many projects have specific requirements endowed by donors that often prevent feedback from to donors on how to enhance the effectiveness of projects. Thus, it is suggested that donors enforce “broader downward accountability to officers in the field, beneficiaries and other stakeholders.”²³⁹ It is also recommended that the upward accounting and accountability mechanisms “provide flexibility in reporting formats, so that a range of possibly unforeseen issues revealed through downward accountability can be reported upwards to donors.”²⁴⁰

²³⁵ Agyemang, Gloria, Mariama Awumbila, Jeffrey Unerman, and Brendan O’Dwyer. 2009. NGO Accountability and Aid Delivery. *The Association of Chartered Certified Accountants* (110): 5.

²³⁶ Ibid., 5.

²³⁷ Ibid., 5.

²³⁸ Ibid., 5.

²³⁹ Ibid., 5.

²⁴⁰ Ibid., 5.

Authoritative Oversight

Authoritative oversight can be instrumental in enforcing laws and regulations in Ghana. In Senegal, it was proposed to put an observer on each fishing boat to enforce regulations regarding fishing zones and mesh size and the landing size of species. It is important to choose observers that are fully autonomous to the ship owners by proposing a competitive salary. The funds to support these expenses may be provided by the incomes from fishing licenses and bilateral cooperation, etc.²⁴¹.

Continual and Frequent Monitoring of Projects

A sustainable and transparent system implemented by observers is made possible by continually monitoring projects and policies. One suggestion is allocating this duty to the private management of the observer. The agency that incurs this responsibility should adhere to the terms of reference and have frequent evaluations. A project will not be successful if discussions, information and exchange meetings with the stakeholders are not continued following the implementation of the project. As was seen in this project, evidence of sustainable behavior and practices is important to stakeholders. The discussion forum illuminated on the importance of developing an information system (training, communication, seminars, radio, television), creating local maritime fishing councils, enforcing and enhancing the fishing code at optimal inclusion, developing a follow-up committee that allows includes a representation from each category of the fishing industry, and providing interprofessionals with a mandate to present the results of

²⁴¹United Nations Environment Programme. Policy Implementation and Fisheries Resource Management: Lessons from Senegal. http://www.imcsnet.org/imcs/docs/policy_implementation_and_fish_res_mgmt_senegal_lessons.pdf . 2004. 1-97.

the study with stakeholders with an opportunity to listen to their perceptions and recommendations. This has provided Senegal with the tools necessary to improve fishing regulation. Now, it is the responsibility of Senegal to carry out its responsibilities and continuing to paying priority attention to the fishing sector. The continuation of studies, forums for discussion, and harmonization of policies related to fishing at all levels is pertinent to the continued success of Senegal's fishing sector²⁴². While this study is specific to Senegal's fisheries, these recommendations can be applied to all environmental sectors.

Conclusion

The Greater Accra region of Ghana experiences high levels of environmental degradation, which has negative consequences for the environment, economy, and social well-being. The main sources of degradation in the coastal country today include pesticide and animal waste runoff from urban farming, harmful small-scale mining and oil and gas extraction, over-fishing, copious amounts of marine debris and unmanageable municipal waste management. While Ghana has attempted to implement projects and policies in order to eradicate further damage, there have been no substantial restoration efforts. In other cases where the country has attempted to improve these problem areas, it has failed to progress to necessary levels. Nongovernmental organizations can be instrumental in compensating for the shortcomings of the government on these

²⁴² United Nations Environment Programme. *Policy Implementation and Fisheries Resource Management: Lessons from Senegal*. http://www.imcsnet.org/imcs/docs/policy_implementation_and_fish_res_mgmt_senegal_lessons.pdf . 2004. 1-97.

environmental issues. However, sometimes nongovernmental organizations operate in contention with each other and with the government. Therefore, the Greater Accra region must implement policies while simultaneously increasing collaboration with nongovernmental organizations that promote sustainable development. This will allow both entities to operate at optimal potential.

Dakar, Senegal is situated on the most western tip of Africa and is susceptible to the same environmental challenges that are present in Accra; however, Dakar has managed to achieve a higher level of sustainable development than Accra. Through a comparative analysis of the environmental degradation of Ghana's and Senegal's coastal regions, the following recommendations have been made for Ghana: Long-term education and accountability to donors, beneficiaries, and other stakeholders, improved infrastructure dealing with waste management, financial incentives to discourage illicit activity, increased communication among stakeholders and the public, authoritative oversight of potentially harmful environmental activity, and periodic monitoring of projects to increase accountability and transparency. Above all, a prerequisite for restoring the environment is prioritizing the facilitation of environmentally sound policies in the government agenda, and empowering the public to abide by these changes.

Environmental policy along with the other factors discussed in this thesis can encourage the shift in environmental values so as to reflect prioritization and sympathy for restoration. In a study of environmental change and adaptation in Senegal, the author finds that “policy has been underlined here as one of the major factors causing

subsequent adaptation.”²⁴³ However, environmental policies that do not coincide with the values of those being impacted by these changes will not be successful, because broad participation of the community is critical to sustainable development. In order for environmental policies to benefit a community economically, environmentally and socially and have other positive impacts on the Greater Accra Region, they must empower the community to not only alter behavior, but also to perceive these environmental concerns as important.

²⁴³ Mbow, Cheikh, Ole Mertz, Awa Diouf, Kjeld Rasmussen, and Anette Reenberg. 2008. The History of Environmental Change and Adaptation in Eastern Saloum–Senegal—Driving Forces and Perceptions. *Global and Planetary Change* 64 (3-4): 210-21.

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