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POLICY BRIEF

Water Pollution in Ghana

KEY FINDINGS

- Water resources have been explored and exploited in Ghana to meet socio-economic and environmental needs of individuals and the country.
- Over 25 percent of the Ghanaian population who live in the coastal zone engage primarily in fishing activities.
- Illegal artisanal and small-scale mining, rapid urbanization and inappropriate agricultural practices form part of the key causes of water pollution in Ghana.
- There is ubiquity in policy instruments, laws and regulations to manage water resources, but ineffective implementation coupled with lack of political will have weakened their effect.

INTRODUCTION

Water resources constitute an integral part of the ecosystem, supporting human lives, flora and fauna in various land surfaces of the world (van der Molen & Hilderling, 2005). This important resource is also essential for a wide range of economic activities that include hydropower generation, transportation and production of fish. However, its availability is threatened by anthropogenic actions or inactions, with serious negative consequences for the global population.

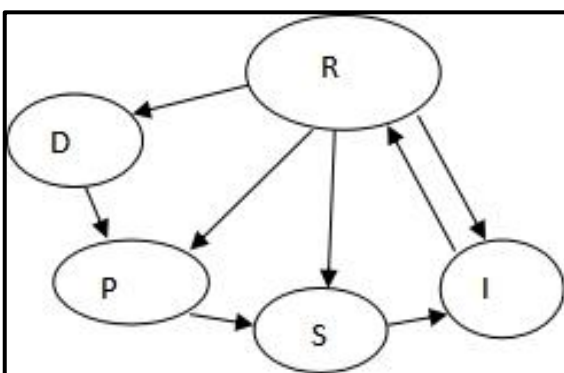
KEY ISSUES

In Ghana, clearing of vegetation cover to meet the insatiable demand for firewood and charcoal (41.3 percent and 31.5 percent of households as of 2012 and 2013 respectively) and for surface mining of precious stones, indiscriminate solid and liquid waste disposal, and unsustainable farming practices, including inappropriate chemical fertiliser application, have left many freshwater resources dried up or heavily polluted (Owusu *et al.*, 2016; ISSER, 2017). Also, the quality of marine resources in Ghana has declined rapidly over time, evidenced by the plastic waste littered along most beaches in Ghana, coupled with the

drastic reduction in fish catch by local fishermen (Owusu et al., 2016).

The analysis of the Environment Chapter in the Ghana Social Development Outlook 2018, was underpinned by the Drivers, Pressures, State, Impact and Responses (DPSIR) framework (Fig.1). This framework contextualises the various pillars of the interwoven, spatial and temporal chain of cause-and-effect that manifests the interfaces between human society and the environment.

Fig. 1: Conceptualising water resource pollution and scarcity with the DPSIR framework



Source: Author's own construct

Freshwater resources

Ghana is well endowed with freshwater water resources. The Volta River basin covers 70 percent of the country's drainage system. Other river basins include the Densu River basin, Ankobra basin, Pra basin, Tano basin and White Volta basin (Water Resources Commission, 2015). Ghana is also well endowed with groundwater resources (Sarpong, 2005) mainly found in two rock formations – sedimentary and non-sedimentary. Freshwater resources in Ghana are mainly used for domestic consumption, irrigation and livestock watering (Owusu et al., 2016).

The key drivers of freshwater pollution in Ghana include population growth, urbanisation, poor attitude towards the environment, unsustainable traditional farming practices, and

industrial activities. Despite the known benefits and uses of freshwater, these resources are increasingly being polluted at an alarming rate (for example, the high nutrient levels, high faecal coliform numbers, low levels of dissolved oxygen, organic and inorganic waste elements in the water resources), thereby compromising their life-supporting qualities. Pollution of freshwater in Ghana has impacts on livelihoods, health, transportation services, and potable water for domestic use.



Photo: Rilsonav / Pixabay

Marine and Coastal resource

The coastline of Ghana stretches for about 550 km. The coastal zone is about 6.5 percent of the land area of the country, and hosts 25 percent of the nation's population (Amlalo, 2006). A key challenge confronting the marine environment in the country is indiscriminate disposal of plastic waste (Nunoo and Quayson, 2003). With few recycling centres, coupled with inefficient waste management practices, the majority of this waste ends up in drainage channels, and then in the sea. Stoler et al. (2012) estimated that about 270 tonnes of plastic waste is generated in Ghana every day with a significant proportion ending up either on the beaches or in the sea. Marine resources bring benefits to the economy including social, economic and environmental benefits.

Industrial, municipal and domestic waste such as plastic waste, chemicals and liquid waste, noise and excessive lights from the oil production fields constitute the pressures of marine and coastal resource pollution in Ghana. This level of pollution is changing the marine ecosystem, affecting fish reproduction which in turn reduces annual fish stock. Marine pollution has economic as well as social impacts on the economy of Ghana. For instance, there was a decline in marine fish production from 333,697 tonnes in 2012 to 289,147 tonnes in 2014 before some recovery in 2015 (Ministry of Food and Agriculture [MOFA], 2016).

CONCLUSION AND POLICY IMPLICATIONS

Ghana is well endowed with freshwater as well as marine and coastal resources. These resources have been explored and exploited to meet socio-economic and environmental needs of individuals and the country, a key example being fish production. The potential of these fish production sources have, however, been greatly undermined by human activities. Chief among the anthropogenic causes of pollution of Ghana's water resources are illegal artisanal and small-scale mining, rapid urbanisation and inappropriate agricultural practices. Several policy instruments, laws and regulations have been developed to control and manage Ghana's water resources. However, ineffective implementation coupled with lack of political will, have left water resources in an increasingly alarming state. In this light, the following recommendations are made to promote sustainable management of Ghana's water resources.

Strengthen collaboration among stakeholders in the fight against 'galamsey': The single most destructive human activity altering the physical, chemical and biological composition of freshwater resources in Ghana is small-scale illegal mining. The government's "Operation Vanguard" (which is a joint taskforce made up of security personnel deployed to mining areas) is yielding results and should be supported with more resources. Linked to rooting it out, the government must make strenuous efforts to provide alternative and sustainable livelihood activities

for the teeming unemployed youth engaging in the inglorious activity.

Strong political will to strengthen and implement existing water-related policies: There are comprehensive water-related policies which, if implemented, could ensure sustainable management of water resources in Ghana. Actions such as banning certain grades of plastic materials from the market should be given enough impetus to help reduce plastic waste that eventually finds its way into water bodies. Revisiting some customary practices is prudent in the fight against environmental degradation. The government's recent one-month ban on all fishing activities in the country, which started in August 2018, should be regular and sustained to help in the reproductive system of marine life. Additionally, the regulations on the use of unauthorised fishing nets should be strictly enforced without fear or favour to avoid harvesting of fingerlings.

Education and awareness-creation campaigns as low-hanging fruit: Education on water resource pollution and its consequences should be intensified. This will require strong and continuous collaboration between the media and state agencies such as the Ministry of Information, local governments and the National Commission for Civic Education to entrench sustainable environmental practices as civic responsibilities.

Encourage re-use, recycling of waste, especially plastic waste, and waste-to-energy technologies: Investment in recycling plants depends, to a large extent, on systems for sorting waste during and after collection. Education at the household level, through electronic and social media, on domestic waste sorting (into components such as plastics, glass, metals and organic) is a crucial step towards sustainable waste management in Ghana. This needs to be supported with good and sustainable rubbish collection, disposal, and landfill management practices to make it meaningful and beneficial to support the nation's sustainable development.

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