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Environment and Population in Malawi: Implications on National Development

Background

Similar to other Sub-Saharan African countries, Malawi's population is growing at an exponential rate of about 3% a year (Malawi Government, 2017). With a low life expectancy and high birth rates, Malawi's population structure comprises a massive youth population—in turn creating a high dependency rate (Malawi Government, 2016). Unlike other countries in the region, however, Malawi remains largely rural, with only 16% of the population living in urban areas (National Statistical Office, 2018). Furthermore, its most dense cities are spread out, limiting inter-city linkages and growth. Despite relative economic growth, high levels of poverty and inequality have hampered development (Malawi Government, 2016). With 84% of Malawi's population living in rural areas and approximately two-thirds of the population's livelihoods relying on agriculture, the environment is a major population concern (National Statistical Office, 2018; International Monetary Fund, 2017). As population density increases (39% increase since 2008), this reliance on agriculture, coupled with exploitative environmental practices, is unsustainable and will diminish Malawi's development prospects (National Statistical Office, 2018).

This paper will explore key environmental issues affected by and affecting population, like agriculture, food security, water, climate change, energy and employment and their implications on Malawi's sustainable development. Notably, the intersection between environment and development is a priority of the Government of Malawi, as indicated in the 2017-2022 Malawi Growth and Development Strategy III (MGDS III). Among other declarations, the MGDS III notes that beyond just environmental considerations, investment in climate change is needed as it has also "been found to have the largest multiplier effect on poverty alleviation, education, health, agriculture and water development, economic growth, urbanisation and governance," (Government of Malawi, 2017). Ultimately, the paper will fill a major evidence gap on the relationship between population, environment and development in Malawi and provide policy and programme recommendations, as informed by the evidence.

Methods

The focus of this paper will be to (1) synthesise evidence on Malawi's population dynamics and environmental state; (2) identify the determinants of environmental outcomes; (3) assess implications of these outcomes on Malawi's sustainable development; and (4) provide corresponding policy and programme recommendations. Methods will include a desk review of relevant literature, evidence synthesis and secondary analyses of data, including from the Malawi Demographic and Health Surveys and the Malawi Population and Housing Censuses. The primary search engines used to identify peer-reviewed literature will include JSTOR, HINARI, Google Scholar, whereas Google will be used for grey literature.

Search terms

The proposed search terms will be used and amended as necessary: ['environment*'] AND/OR ['population*] AND/OR ['Malawi' OR 'Africa' OR 'Sub Saharan Africa' OR 'low and middle income country' OR 'LMIC'] AND/OR ['food security' OR 'food insecurity' OR 'famine' OR 'food shortage*'] AND/OR ['deforestation' OR 'reforestation'] AND/OR ['biomass' OR 'biofuel' OR 'charcoal' OR 'energy'] AND/OR ['drought' OR 'flood*' OR 'climate change'] AND/OR ['agriculture' AND/OR 'subsistence agriculture']

Inclusion/Exclusion Criteria

We will include primary and secondary research articles and grey literature written in English that explore matters related to environment, population and/or food security in Malawi, Africa, and LMICs. Only articles published in the last 15 years will be included. Articles not written in English, commentaries or opinion pieces, and literature from high-income countries will be excluded.

Preliminary Findings and Discussion

With a 39% intercensal increase in the number of households in 2018, settlements, agriculture, and livelihood activities are expanding and are approaching their limit as natural resources are strained (National Statistical Office, 2018). In fact, the "expansion of subsistence agriculture to meet the food needs of the burgeoning population has been one of the main causes of deforestation in Malawi," which has the highest rate of deforestation in Southern Africa

(Ngwira and Watanabe, 2019, pg 2). This deforestation is attributed mainly to excess use of and reliance on biomass for energy and agriculture expansion (Ngwira and Watanabe, 2019). In fact, biomass currently fuels 89% of Malawi's energy supply (Government of Malawi, 2017). If alternative energy sources which are environmentally friendly, affordable and sustainable, are not invested in, Malawi will deplete its biomass supply, leading to even higher rates of deforestation.

Deforestation poses a major problem as trees are critical for regular rainfall, flood prevention, and healthy soil (Mauch, 2012). When too many trees are cut down, droughts, floods, and contaminated water are commonplace (Mauch, 2012). Unfortunately, such realities are frequent in Malawi and affect populations' shelter and food security. For example, between just three districts in Malawi's southern region, there have been devastating floods almost every year over the past ten years: Nsanje (2011, 2012, 2015, 2019), Phalombe (2013, 2015, 2018, 2019) and Chikwawa (2015, 2019). Not only have these floods displaced millions of people, they have also caused food shortages and exacerbated poverty after harvests are lost (Pauw, Terlow, and Van Seventer, 2010). In fact, model results estimate that Malawi loses an annual average of 1.7% of its gross domestic product every year due to the combined effects of droughts and floods (Pauw, Terlow, and Van Seventer, 2010). Without safeguards like tree cover, wind breaks and irrigation systems in place, the damaging effects of extreme weather and environmental disasters will only worsen, thanks also to climate change (Mauch, 2012).

As environmental resources are strained and climate change leads to more extreme weather, agriculture will suffer. This is a major environmental and economic concern as agriculture remains Malawi's largest industry and contributes to approximately one-third of GDP (International Monetary Fund, 2017). In fact, agriculture employs 64% of the working population (Malawi Government, 2016). At an individual level, therefore, good agricultural practices and yields are critical for employment and sustenance. This is similarly true at the national level, where agriculture effectively determines the economy's strength and national food security. These preliminary results indicate that action is needed to support the population's needs while protecting the biodiversity that the future of sustainable development is dependent on.

References

Malawi Government. The Malawi Growth and Development Strategy III (2017-2022) [Internet]. [cited 2017 November]. 216 p. Available from: https://www.afidep.org/download/policy_guidelines/Malawi-Growth-_-Development-Strategy-MGDS-III-2017-2022-Final-Version-copy.pdf

Malawi Government Ministry of Finance Department for Economic Planning and Development. Harnessing the Demographic Dividend to Accelerate Socio-economic Transformation and Economic Development in Malawi. Lilongwe. April 2016. 140 p.

Mauch, F. (2012). The Perils of Water: Floods, Droughts, and Pollution as Natural Hazards and Cultural Challenges. *RCC Perspectives,* (2), 63-70. Retrieved from http://www.jstor.org/stable/26240362

National Statistical Office. 2018 Malawi Population and Housing Census Preliminary Report (December 2018). 55 p. Available from: http://www.nsomalawi.mw/images/stories/data_on_line/demography/census_2018/2018%20Population%20and%20Housing%20Census%20Preliminary%20Report.pdf

National Statistical Office (NSO) [Malawi] and ICF. 2017. Malawi Demographic and Health Survey 2015-16. Zomba, Malawi, and Rockville, Maryland, USA. NSO and ICF.

National Statistical Office and the World Bank Group. 2017. Integrated Household Survey 2016-2017. Zomba, Malawi.

Ngwira S and Watanabe T. An Analysis of the Causes of Deforestation in Malawi: A Case of Mwazisi. *Land* 2019 8, 48. file:///C:/Users/Emma/Downloads/land-08-00048-v2%20(1).pdf

Pauw K, Thurlow J, Van Seventer D (2010) *Droughts and Floods in Malawi Assessing the Economywide Effects*, International Food Policy Research Institute (IFPRI) Discussion Paper 00962.

http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/1370/filename/1371.pdf