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PREFACE

Understanding the impact of climate and environmental change on socio-economic development in southern Africa

The selected topic for this book derives from a realization that humanity seeks sustenance and development by harnessing natural resources. Since their emergence on this planet, humans have depended on nature for survival and development. Nature provides them with food, water, energy and shelter. Humans use animals and plants for food, dig up the ground for resources, cut down trees to build shelter, among many other uses.

In Third World Countries, poor people, especially in rural communities, eke out a living from aquatic and dry land ecosystems. In Southern Africa in particular, the most poverty stricken communities, including those in urban areas survive as farmers, fresh produce and firewood marketers and fishers among other environment dependent activities. Even the better off commercial farmers, entrepreneurs, and business people also derive their sustenance from the environment. Indeed, from the poorest man or woman in Epworth, Zimbabwe, who undertakes urban agriculture or goes to Mbare Musika every morning to buy farm produce for resale in order to provide for his/her family; the fishermen in Karonga on the shores of lake Malawi, the village bee keeper in Kabompo district of Zambia, and even the big farmers and industrialists in these countries on one hand; to the chief executive officer at the headquarters of some western multinational conglomerate or the industrialist in Europe or America on the other, different classes of humanity both directly and indirectly, depend on the natural environment.

Within the context of this immutable reliance of mankind on nature, the much sought after development and the livelihoods concomitant with it inevitably leave a trail of environmental degradation. Such environmental degeneration affects the climate and vice versa, with long term effects on socio-economic and political development. Indeed, human activities since the industrial revolution in Europe have led to the unprecedented displacement of pristine flora and fauna by factories, concrete and asphalt pavings, roads and other components of the man-made environment. Though under different circumstances, the same degradation is being experienced in the Third World. Here as in the West, expanding urban settlements, the factories and other constructions as well as domestic energy needs, among other anthropogenic activities have seen the razing of natural flora. This in turn is depleting the environment of the autotrophs needed for photosynthesis and the supply of energy and nutrients for the environment. More so, the farming sector, both urban and rural, small scale and commercial, cash crop and subsistence, crop and animal production among other segments of it, is exacerbating deforestation, destruction of soils, and dry land and aquatic ecosystem imbalances. It is common knowledge today that farming activities, like urban settlement and industry, not only destroy flora and fauna but also release multiple pollutants into the environment, leading to environmental and climatic changes which ultimately impede development and survival.

It is within this scenario that today communities in different parts of the world are grappling with the impacts of environmental and climatic changes. In a mutually reinforcing relationship, the destruction of the environment exacerbates climate changes and vice versa. In Europe, countries of the southern regions have experienced decreasing rainfall, while the northern ones

are experiencing increased rains with flooding becoming the order of the day (EEA Report 2012). For the south part of Europe, river flow droughts are common just as flash floods are wracking havoc to the environment. These countries have also encountered global warming, with heat waves increasing in frequency and length**,** causing tens of thousands of deaths between 2000 and 2012. It is feared that Europe could be 2.5–4° C warmer in the later part of the 21st Century, compared to the 1961–1990 average. In the arctic and ant-arctic regions, melting glaciers denote the rising heat levels, as does the decrease in snow fall in most of Northern and Eastern Europe. Similarly, in the Americas, hurricane occurrences have increased in both frequency and intensity.

According to Hulme et al. (2001) and the IPCC (2001), Africa too is victim to such impacts, with temperatures rising by an average of 0.7°celcius over the 20th century. Some countries of East Africa, Mozambique included, are suffering the effects of increased precipitation. As is also occurring in parts of Zimbabwe, Mozambique has faced frequent and intense cases of flooding and cyclones since the 1990s. In Southern Africa however, the main crisis involves drought spells that are increasing in frequency, with Zimbabwe having faced a drought every 10 years in the 1980s and 1990s; every two years in the early 2000s and then every year until the rain season of 2016-2017. The result has been generalized underdevelopment, conflicts and tensions over the management and use of natural resources and food insecurity, leading to the increased exploitation of the environment as people seek immediate sustenance under harsh and unpredictable conditions. Not surprisingly, this is a crisis that has spurred global collaboration towards the mitigation of the environmental and climatic impacts of anthropogenic interferences with nature. This situation has generated questions on sustainable development.

In this quest for sustainability, the international community, as represented by the Brundtland Commission (1987), has redefined development beyond the socio-economic to include environmental wellness. While the present generation's conditions of life must improve, the needs of future generations must be ensured. In this scheme of things, development practitioners, environmentalists, governments, non-governmental organizations and even grass-root communities are becoming strategic stakeholders in efforts to mitigate and/or adapt to the impacts of environmental and climate change. International discussions, conventions and other interventions such as the Kyoto Protocol and the Reduction of Emissions from Deforestation and Forest Degradation (REDD) among others, represent this global search for equilibrium between socio-economic and environmental wellness. Regional collaboration on the management of shared environmental resources is also part of this general quest for balance. Nationally, calls for urban and rural authorities, policy makers, NGOs, corporations and ordinary citizens, to align their operations and livelihoods with environmental protection have become common, even in Southern Africa. Researches are also engaging in empirically grounded/ evidence-based studies that contribute to climate and environmentally friendly solutions at global, regional and country levels.

Summaries of the papers

This publication, under the theme Environment, Climate Change and Development focuses on three Southern African countries namely Zimbabwe, Malawi and Zambia to understand the various facets of the relationship between climate and environmental change on one hand and socio-economic development on the other. For instance, I. Mudeka traces the environmental impacts of the male driven tobacco sector in Muda area of Zimbabwe. She undertakes a gendered analysis to understand how such impacts impinge on Muda women's environment-reliant livelihoods as foragers, fishers, marketers of forest products which include chaffer beetles, edible caterpillars, mushrooms, wild fruits and crafts among others. J. N. Mulenga and S. Hamauswa also link environmental wellness and livelihoods by examining the role of

beekeeping towards the promotion of beekeeping communities' livelihoods in Zambia's central province. They conclude that since beekeeping is a viable livelihood strategy for the rural people, it provides the necessary incentive for them to protect their forests. C. K. Mandirahwe and I. Mudeka on one hand as well as G. A. Phiri and B. C. G. Kamanga on the other, link the question of climate change and food security in Zimbabwe and Malawi respectively. While Mandirahwe and Mudeka trace the implications of climate change on food production in the Eastern Highlands of Zimbabwe, their primary concern is on how the people of Zambe Ward of Mutasa have adapted to climate change in the country. Phiri and Kamanga particularly zero in on Malawi's Farm Input Subsidy Program (FISP) to interrogate the relationship between climate change and food security. Phiri and Kamanga argue that what we eat, ways of obtaining staple foods and how we eat are cultural anthropological questions that can help understand the relationship between climate change and its impact on food security in Malawi and beyond.

Though most of the above cited studies refer to ways of handling the environmental impacts of human activities, contributions by M. Mudewairi and L. A. Musevenzo are most specifically about mitigation. Mudewairi argues for the relevance of pentateuchal laws in mitigating environmental degradation in Zimbabwe. She argues for drawing from the Jewish Pentateuch to promote a better relationship between society and their environment. Musevenzo examines the environmental management strategies of Kadoma paper milling company in Kadoma, Zimbabwe. He stresses the utility of the company's strategic environmental management approach and commends it as a way for corporate organizations to mitigate their impacts on the environment. Finally, P. S. Mataruse analyses trans-boundary water management in the SADC in the context of Pan-Africanism and regional integration. Mataruse traces how trans-boundary water management is used as part of climate change adaptation within the context of the Southern African Development Community (SADC) and weakening Pan-African ideology.