


Spring 2013

[Sabbatical Report]

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Western Kentucky University

Sabbatical Leave Report

A. Applicant Information

Name: Emmanuel A. Iyiegboniwe

Rank: Associate Professor

Department: Public Health

No. Years at WKU: 10

Leave Period: Spring 2013

B. Purpose of Leave/Overview

The main purpose of this sabbatical leave was to provide me the opportunity to conduct relevant research and subsequently write two book chapters on environmental health and policy issues in two countries: Belize (a developing country) and Canada (a developed country). Specifically, the two book chapters were titled "Analysis of Environmental Health Policy in Belize" and "Analysis of Environmental Health and Policy Issues in Canada." As called for in my proposal, I was able to travel to Belize with a group of CHHS faculty and students during the 2013 winter term. During the leave period, I successfully conducted research and reviewed the current literature from various sources as well as evaluated theoretical frameworks on environmental and human health relationship theory. Additionally, I completed the two book chapters during the leave period and these have been submitted to Routledge Press, New York for publication in "Comparative Perspective on Environmental Policies and Issues." Suffice it to note that I will apply the materials presented in the book chapters to my classroom strategies for my undergraduate (e.g., ENV 280, ENV 360 and ENV 485) and graduate (PH 584 and PH 571) environmental health courses. The book chapters will increase the overall knowledge and success of my students in environmental health and policy issues. It is expected that the paper on Belize will be useful in reaching out to a diversity of WKU students with interest in the service learning program to Belize. The supplication of the materials in the books will ultimately help students in their efforts to translate theory into practice.

C. Book Chapters Narrative

1. *Analysis of Environmental Health Policy in Belize (Chapter 14)*

This chapter examined environmental health issues in Belize. It argues that although the country has undeniably experienced frequent natural disasters of catastrophic proportions due to its geographic location, Belize still effectively implements its environmental health policies. The

nation could be described as a small but endowed with abundant natural resources (e.g., the second longest Barrier Reef System in the world). It however suffers from a mixed blessing of an ever increasing storm surges coupled with rising sea levels. In Belize, natural resources such as tourism, sugar, bananas, citrus, forestry and aquaculture are the main sources of growth and therefore the basis for the nation's capital. There are a number of environmental health issues of public health importance, including inadequate waste management, habitat alteration, deforestation, overfishing, loss of biodiversity and natural disasters and climate change.

In Belize, environmental governance is routed on the creation of the BEPA and other regulations. BEPA established the environmental impact assessment, among other programs. The construction of the Chalillo dam over the Macal River in the Cayo district provided a test case for BEPA's EIA program. The 1996 National Environmental Action Plan (NEAP) provided insights as to how the indigenous poor people are affected by inadequate land and waste management, water pollution, and natural disasters. In this regard, urgent action is needed to address multiple environmental threats simultaneously, because the interdependent and harmful effects of such stressors as coastal pollution, overfishing, poor land-use practices, climate change and global warming. It is anticipated that with assistance from multilateral organizations through the establishment and capitalization of the Marine Conservation and Climate Adaptation Trust (MCCAT), Belize would establish a sustainable financing mechanism for climate adaptation measures for the Barrier Reef System as well as the marine and coastal ecosystems. Prompt implementation of proven practical solutions would lead to both short- and long-term benefits, including the return of keystone species and the economic benefits they entail. Concerted efforts should be aimed at mitigating risks related to natural disasters and the impacts of climate change through the implementation of effective environmental policy, capacity building, and investments. Also, there is need to focus on environmentally sustainable outcomes for the development of these resources, especially in the protected areas.

The World Bank (2000) has noted that using the natural capital in a sustainable manner is critical. Global environmental problems are intimately linked to economic conditions and problems of social justice. Therefore, the protection of historical sites such as the Mayan ruins and other protected areas, are very critical and important in sustaining and preserving the cultural heritage and livelihood of the people of Belize. When people are poor and the national economy of a developing small country such as Belize is weak, the environment ultimately suffers. Conversely, if the environment is abused and the available natural resources are depleted through unsustainable consumption, poor people would suffer and eventually, the economy would decline. Therefore, to maintain sustainable outcomes in the long term, all three factors – social, environmental, and economic needs of the people must remain in balance with each other. For details, refer to a copy of the entire book chapter attached in Appendix I.

2. Analysis of Environmental Health and Policy Issues in Canada (Chapter 5)

This chapter examined environmental health and related policy issues in Canada. It discussed how environmental health issues in Canada tended to overlap in many regards. For many, environmental hazards, the most serious cause of concern are risks to human health and the ecosystem. Several policy issues in the country are instrumental to both environmental and

health problems. These include the extent that the individual value health risk as well as how the society is protected from environmental harm due to pollution or exposure to infectious diseases. The federal, provincial, and territorial governments and the various agencies (e.g., Environment Canada, Health Canada, etc.) play a critical role in developing environmental policy.

Canadian environmental regulation is rooted in the formation of CEPA in 1999. The main mandate of CEPA is the promulgation and enforcement of regulations as well as prevention and management of environmental risks posed by harmful substances. CEPA also focuses on sustainable development and environmental protection based on two principles: the "precautionary principle" and the "polluter pays principle." The precautionary principle demands that public health protection from environmental risks and products introduced into commerce must be considered before any commercial interests. It allows regulatory authorities to err on the side of safety when there is sufficient evidence to suggest a potential negative impact, but not enough to know with certainty. The polluter pays principle requires that the polluter bear the expenses of carrying out pollution prevention measures (paying for damage caused by pollution). It is employed to regulate toxic chemical substances, hazardous waste materials, international air and water pollution, as well as animate and inanimate products of biotechnology.

Canadian children are particularly vulnerable to a variety of environmental threats, including air pollution. Asthma continues to present serious public health challenges. Based on the application of the precautionary principle, the federal government has taken far reaching actions targeted at the management of public health and environmental risks posed by BPA, a known toxic substance. The tar sands of Alberta have great economic benefits but the extraction continues to present severe environmental public health costs especially to the local communities and territorial governments. It is suggested that participatory research with affected communities be considered as a tool for resolving environmental health problems, specifically those communities where tar sands are extracted in Northern Alberta with deep distrust of government and industry experts.

In Canada, provincial governments have developed a substantial range of policies, regulations, strategies and frameworks to enhance public health and safety. However, there may be significant variation in priorities and approaches to environmental health management needs and specific circumstances of each jurisdiction. As part of its strategies on risk management and in partnership with Health Canada, Environment Canada organized a national forum through the Toxic Substances Research Initiative to support research on endocrine-disrupting substances (EDS) (Environment Canada, 1999). It involved the formation of the EDS Working Group (Endocrine Disruptor Workshop: Identifying Research Needs and Priorities). The workshop was attended by scientists and major regulatory groups within Environment Canada from October 23-24, 1997 in Niagara Falls. It created a strategy that comprised of four major elements: national leadership/communication on EDS; national and international harmonization of screening and testing protocols; establishing effects of EDS in ecosystems; and assessment/action on priority substances.

The goal of any environmental policy on air and water quality issues must consider as its vital component, the issue of sustainability (maximizing available supplies and minimizing associated risks). To be effective, environmental policy development must rely on sound science, adequate and reliable instrumentation, a careful consideration of vulnerable populations, and the

participation of affected stakeholders in the regulatory process. To be involved in the improvement and protection of their local environment, every community should be empowered by government through the provision of an enabling environment and the tools necessary to identify, analyze, and solve prevailing environmental problems. There is also the need to develop and implement simple exposure and hazard tools for setting priority for systematically identifying substances that are highest priorities when their potential to cause adverse health effects and environmental impact are considered. It is only when environmental policies are properly crafted, directed, and implemented, and all stakeholders are involved in the process, that public and environmental health protection can be effectively achieved in Canada. For details, refer to a copy of the entire book chapter attached in Appendix II.

D. Summary

My sabbatical leave has served as a well-deserved opportunity for a vibrant and enrichment source of professional development. My objectives will certainly improve my teaching and research performance as I seek to incorporate the information contained in the book chapters into my course offerings. As a result of developing these book chapters, I am in a better position to provide assistance to my students with their study skills and scientific research inquiry. It must be noted that my previous experiences traveling to Belize and conducting research for the two book chapters will also illuminate my teaching of these topics in my environmental health courses. Finally, by incorporating the new information on environmental health and policy issues into my course materials and aligning my teaching with service learning, I will continue to excite and ignite the interests of my students.

E. Appendices

Appendix I *Analysis of Environmental Health Policy in Belize (Chapter 14)*

Appendix II *Analysis of Environmental Health and Policy Issues in Canada (Chapter 5)*