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THE IMPLICATIONS OF DEMOGRAPHIC AND ENVIRONMENTAL STRESS
FOR POLITICAL CHANGE IN DEVELOPING STATES:
A CROSS-NATIONAL ASSESSMENT

by

Cameron M. Otopalik

A DISSERTATION

Presented to the Faculty of
The Graduate College at the University of Nebraska
In Partial Fulfillment of Requirements
For the Degree of Doctor of Philosophy

Major: Political Science

Under the Supervision of Professor David P. Forsythe

Lincoln, Nebraska

May, 2000

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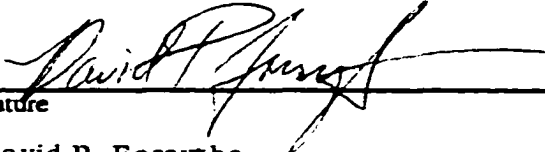
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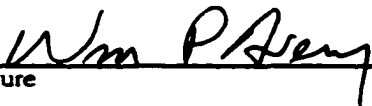
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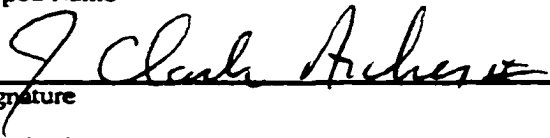
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THE IMPLICATIONS OF DEMOGRAPHIC AND ENVIRONMENTAL STRESS FOR
POLITICAL CHANGE IN DEVELOPING STATES:

A CROSS-NATIONAL ASSESSMENT

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University of Nebraska, 2000

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Research to date regarding the implications of demographic and environmental stress for political conflict (usually defined as involving some level of violence) has predominantly been case-study oriented and subject to selection bias where cases have been chosen on the basis of existent political conflict - thus bringing into question the reliability of conclusions derived. Where cross-national studies have been conducted, their concentration on primarily demographic features have demonstrated only weak relationships and are somewhat dated. Where transnational environmental sources of political conflict have been investigated, they rarely extend beyond the issue of freshwater. Furthermore, the above bodies of research have largely failed to consider the mediating or intervening effects of political and economic factors.

This study offers a departure from previous research by taking advantage of newly available data utilizing Ordinary Least Squares (OLS) multiple regression and path analysis model-building techniques in a cross-sectional and cross-

national approach to assess the relationship between demographic and environmental stresses and political change (defined here as change in domestic governance). Regime type and economic factors are incorporated which may exacerbate or ameliorate the effects of these stresses.

In the literature, Small-Island Developing States (SIDS) are held to suffer disproportionately from demographic and environmental stress due to their unique circumstances and thus provide a subset of developing country cases against which to test the proposition that they experience more domestic political change. While the findings of this study found no support for this hypothesis, the conditions found in these cases did provide meaningful variable selection guidance for testing the hypothesis that countries in the larger universe of developing states suffering from greater demographic and environmental stress overall experience more domestic political change. While causal connections cannot be assumed or demonstrated in this study, the results find a moderate level of support for the contention of an association between these stresses and political change in the domestic realm and generally bolster the findings of case-study research by way of a more methodologically rigorous approach.

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PREVIEW

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I. INTRODUCTION TO THE STUDY

PREVIEW

Introduction

According to United Nations population figures and projections there are about 6.0 billion people in the world today, and the medium range projection is for 9.4 billion by the year 2050. Projections are based upon different estimates of when Replacement Rate Fertility (RRF) will be achieved. RRF is achieved when the average number of children per couple is 2.1. Exponential population growth is like trying to stop a freight train: even if the brakes were applied today, the world's population would still top-out at 8.5 billion. The longer the delay in achieving RRF, the higher the population estimate.

This population growth is disproportionately concentrated in the developing world which comprises 4.8 billion of the world's population currently and by the UN's medium projection will be around 8.2 billion in 2050. This means that by 2050, 87 percent of the world's population will be concentrated in what is considered now as the developing world. Unfortunately, these are the contexts least well-equipped to handle such growth.

There are many empirical and theorized consequences of this growth. One is increasing urbanization in developing regions. Given demographic projections based on current rates

of population growth and urbanization, in 25 years Africa will have an urban majority and Latin America may find as much as 85 percent of its population living in urban settings. As urban slums are swelling, governments are increasingly hard-pressed to provide basic services, public health is endangered, and it has been suggested that such settings provide a fertile culture for the mobilization of discontented masses through extremist ideology.

A second, and not unrelated consequence may be the fomenting or aggravation of sub-national group rivalries/fissures along ethnic, religious or other lines as resources such as employment, health care and food become increasingly scarce. Existent discrimination may become exacerbated in the face of differential growth rates between contending groups or simply as a function of aggregate growth.

Third, as resources become increasingly limited, populations may try to alleviate stress in a couple of ways. One is lateral pressure involving attempts to acquire resources by means of expanding borders.¹ Another option is emigration. Out-migration serves as a "safety-valve" and is important to the stability of fragile economies and political systems. However, negative consequences such as a "brain-drain" may arise as those best equipped to seek their fortune abroad may not return to their native home.

Finally, the environment suffers as a consequence of demographic pressure. This is especially critical in developing contexts where more of the population relies upon the land and waters for their subsistence and where economies are comparatively more reliant upon raw materials and primary goods for export and foreign exchange earnings. Environmental degradation under the stresses of population growth hold consequences for both sustainable development and conflict.

Demographic pressures and environmental stress are inextricably intertwined since population growth and spreading urbanization increase strains on the environment in pursuit of ever-scarcer resources. In turn, environmental degradation can lead to population movement as standards of living are impacted and/or out of health and safety concerns.

Having more limited options for economic development, it is the developing world that will more acutely feel the adverse effects of these pressures. This is why it is important to consider the demographic/environmental nexus against the backdrop of economic and political factors that illuminate the current capacity of states to cope with these changes. World population growth, which is most pronounced in the developing world, affects the environment by increasing the total consumption of natural resources. However, it should be noted that it is the developed world that

disproportionately consumes most of the goods and services of production at present.

Much recent attention has been given to population growth and environmental concerns at the global level involving climate change, international movements of people, tropical deforestation, and international wars over water and natural resources.² However, population and environmental concerns are now beginning to be recognized as impinging upon the areas of *national* (i.e. internal) peace and security.³ The connection between demographic stresses stemming from rapid population growth such as rising urbanization and increasing density have long been treated in the international relations literature as causally linked to the incidence of political conflict. Treated as operating interrelatedly with these factors, environmental considerations such as resource scarcity and degradation have more recently found their way into the formation of a causal nexus in the literature. However, demonstration of strong correlations through systematic empirical testing have been left wanting both in undertaking and in evidence. Furthermore, their impact on internal disorder has only recently been addressed. More often than not, evidence of these connections in both the international relations and comparative politics literature has been limited to case-study research where interpretive

assessments bring into question the validity of the assertions derived.

In the study of political phenomena it is sometimes useful to go over old ground where causal connections may have been demonstrated as weak or inconclusive in light of newly available data and/or a different research strategy. The present work aims at incorporating newly available data and an original research strategy in order to more systematically test for linkages between demographic and environmental stress and the incidence of political change in developing states - with special attention drawn to the conditions of small-island developing states. As will be shown, the United Nations Conference on Small-Island Developing States (SIDS) holds that island-states occupy an unusual position relative to other developing countries due to their unique environmental conditions.⁴

Unencumbered by superpower competition, the post-Cold War era provides a welcome and unique opportunity to investigate the sources of political change in the developing world. Another advantage is new, and possibly more reliable, information and data coming available with which to test these associations. As we shall see, the preponderance of violent political conflict is mostly internal in nature and disproportionately found in the developing world.

The present study is focused on the implications of demographic and environmental stress for political change in developing states. Demographic factors have long been held to be of consequence for political conflict while environmental considerations are increasingly making their way on to the security research agenda.

Numerous shortcomings and limitations are associated with these respective bodies of literature as well as with the few attempts to integrate them. One problem is that much of the respective literature is conjectural in nature with emphasis being placed on the future consequences of these stresses. With regard to the demographic stress literature, few systematic attempts have been made at the level of cross-national comparisons and those are quite dated, with limited rigorous research efforts found only during the period of the mid-1970's through mid-1980's. Linkages between population factors such as size, distribution and composition and the incidences of violent political conflict were found to be generally weak or inconclusive. Evidence of the adverse consequences of these pressures in recent case-study research is highly conjectural. The present study seeks to investigate factors that may be more directly implicated with political change and are demographic or sociodemographic in nature. Although not a very telling stress indicator in and of itself,

population growth precipitates more immediate sociodemographic problems like rapid urbanization and unemployment that may hold implications for change in governance.

With regard to the environmental stress and its connection to political conflict, research to date has been predominantly case-study oriented and therefore susceptible to charges of case selection bias. Renewable natural resource scarcity and degradation have only more recently been treated as a source of political conflict in the literature. Most of the recent scholarship on this potential source of conflict has dealt with the polemical controversy over whether or not environment issues merit placement on the international security agenda. Those formal studies investigating linkages between environment and violent political conflict, at least outside of the area of transnational water resources, have been mostly intrastate in nature and are susceptible to criticism in terms of research design as they leave no room for variation on the dependent variable. In other words, cases have been picked on the basis of existent violent political conflict. Since the environment/conflict nexus lacks rigorous systematic cross-national research, any kind of definitive answer as to the strength of their causal contribution to political change must be held in abeyance. The present study departs from and potentially adds to

previous treatment of these linkages in the literature in four broad ways.

The dependent variable in this study centers on political change. It is primarily concerned with the ramifications of rapid population growth for demographic stresses such as increasing population density and sociodemographic stresses such as rapid urbanization, high youth-to-labor ratios as well as the implications of environmental degradation of renewable natural resources for political stability at the domestic level within a cross-national framework. This study avoids those cases experiencing civil war. Being unobscured by high-intensity political conflict explanations along ethnic, religious or other societal fissure lines, the complications of socio/demographic and environmental stress for political change might be more easily ascertained. While this study will not be able to infer causality in any kind of direct way to high intensity internal conflicts such as civil wars, bloody coups, etc., it will help inform the underlying conditions upon which higher intensity conflict manifestations may arise.

Second, whereas previous research has looked nearly exclusively at either demographic or environmental factors as conflict causal, this study views them as highly intertwined and possibly, mutually reinforcing in developing contexts.

While this integration adds complexity to the research design, it should also yield more telling findings.

Third, this study proposes a cross-national framework that allows a more systematic investigation where findings and conclusions drawn should inform this body of literature more reliably. It also proposes to investigate the special circumstances of developing island-states where I contend that demographic stresses should be felt more acutely and it is contended by others that environmental stresses are felt more adversely. So, not only will this study investigate the relationship between objective conditions of socio/demographic and/or environmental (D/E) stress and political change among developing states but will also test the proposition that developing island-states as a group should demonstrate a greater incidence of political change.

Finally, studies to date have largely ignored political, economic and cultural considerations that might play a role in ameliorating or exacerbating change emanating from D/E stresses. The present study incorporates these kinds of variables so that a truer picture can be drawn. In sum, and as the literature review found in the next chapter will demonstrate, the connections between D/E stress measures and the incidence of political conflict in the developing world have remained by in large hypothetical. Where more

methodologically rigorous testing of causal linkages has taken place, the findings produce weak correlations. In other case-study investigations, conclusions drawn remain tenuous given questionable research designs. This study seeks to rectify these shortcomings and utilize data previously unavailable to researchers as world population growth proceeds.

Why Study Small-Island Developing States?

There is no universally accepted definition of what constitutes a "Small-Island Developing State" (SIDS). For inclusion in this study, SIDS are those independent states that meet certain case selection criteria and are members of the Alliance of Small Island States (AOSIS) and/or the Food and Agriculture Organization (FAO). Since this study is primarily concerned with the association between socio/demographic, environmental and economic stresses (DEE) and low-intensity political conflict, SIDS provide a unique set of cases with which to test for the relationship.

As the FAO states, SIDS have "common disadvantages such as limited resources, fragility of ecosystems,...and peculiar population dynamics."⁵ With regard to land resources, SIDS

suffer from intense competition between land use options, high population density, customary ownership (and correlated land tenure disputes) and emigration. This leads to difficult application of legislation to protect resources or making land unavailable for production purposes.

Other environmental challenges for SIDS involve deforestation, loss of biodiversity and limited freshwater resources. As a group, SIDS are generally "well-endowed with forests but annual deforestation is almost three times higher than the world average." This is due to land conversion to agriculture, infrastructure development and reliance upon timber for export revenues. Forest degradation is an important environmental problem in many SIDS as it holds consequence for the degradation of other natural resources. According to the FAO,

Loss of forests in SIDS may have far more serious impacts than in other larger countries due to intensified interactions within a limited geographical space and to the loss of endemic species and rare ecosystems. In addition, the protective functions of forests are particularly important in many SIDS.

In terms of biodiversity, some of the main threats are natural resource extraction activities (e.g. mining), agricultural practices, unsustainable forestry and deforestation. As the FAO states, "Because of their small size and high level of endemism, biodiversity in SIDS is among the most threatened in the world." Finally with regard to natural resources, fresh water is generally in short supply among SIDS. Several SIDS, and especially those atoll countries, "experience fresh water shortage" and "the water supply and demand is critical".

As we can see from this assessment, SIDS offer an