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Climate change and family planning: least-developed countries define the agenda

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Une traduction en français de ce résumé figure à la fin de l'article. Al final del artículo se facilita una traducción al español. المقالة لهذه الكامل النص نهاية في الخلاصة لهذه العربية الترجمة.

Abstract

The links between rapid population growth and concerns regarding climate change have received little attention. Some commentators have argued that slowing population growth is necessary to reduce further rises in carbon emissions. Others have objected that this would give rise to dehumanizing "population control" programmes in developing countries. Yet the perspective of the developing countries that will be worst affected by climate change has been almost completely ignored by the scientific literature.

This deficit is addressed by this paper, which analyses the first 40 National Adaptation Programmes of Action reports submitted by governments of least-developed countries to the Global Environment Facility for funding. Of these documents, 93% identified at least one of three ways in which demographic trends interact with the effects of climate change: i) faster degradation of the sources of natural resources, ii) increased demand for scarce resources and iii) heightened human vulnerability to extreme weather events.

These findings suggest that voluntary access to family planning services should be made more available to poor communities in least-developed countries. We stress the distinction between this approach, which prioritizes the welfare of poor communities affected by climate change, and the argument that population growth should be slowed to limit increases in global carbon emissions.

The paper concludes by calling for increased support for rights-based family planning services, including those integrated with HIV/AIDS services, as an important complementary measure to climate change adaptation programmes in developing countries.

Introduction

Despite widespread general debate on climate change, the relevance of demographic trends remains a comparatively unexplored issue, especially at the policy-making level. Some notable commentators have proved the exception.[1–3] In essence, the concern they raise is that growth of global population – projected to rise from around 6.8 billion people today to 9.2 billion by 2050[4] – will inevitably lead to a significant increase of greenhouse gas emissions. This has led to calls for universal access to voluntary family planning services to be included as one component of the range of policy responses to climate change. Indeed, some authors have pointed to the "win/win" nature of this intervention given the numerous ancillary benefits of rights-based family planning programmes. These include reducing maternal and infant deaths; women's empowerment; preventing unintended pregnancies including among women living with HIV; preventing mother-to-child transmission of HIV; improving access to condoms; lowering the incidence of sexually transmitted infections including those which facilitate HIV transmission; and poverty reduction.[5]

Nevertheless these calls have not to date achieved traction among politicians nor even within the environmental lobby. It is possible that this is due to concern for an over-reaction in the policy response, mindful as many are of the "population control" policies of the 1960s and 1970s that, inspired by concern for global overpopulation, infamously led to some reports of sterilization procedures being applied without full consent of the patient.[6]

It is worth noting that, like much of the public debate on climate change, the links made with demographic trends have been largely confined to their implications for greenhouse gas emissions. The relevance of demographic trends to adaptation to climate change has meanwhile remained almost entirely unexplored by the scientific literature. The main finding of this paper is that this deficit is in stark contrast to the concerns of the governments of least-developed countries.

Despite the high-profile concern for the reduction of greenhouse gas emissions, least-developed countries have focused more predominantly upon adaptation to climate change and thereby how they may limit the predicted damage of climate change.[7] A literature review by two of this paper's authors found that a large majority (93%) of the 40 least-developed countries who had submitted strategy documents to the Global Environmental Facility identified concern about the impact of rapid population growth upon their ability to adapt to climate change.

This re-emergence of concern for demographic trends in least-developed countries [8–10] is striking because concern about "overpopulation" was led by high-income countries in the first decades after the Second World War. In addition, this re-emergence is being driven at least as much by a grassroots movement as by leadership from the governments of either low- or high-income countries or global organizations such as The World Bank. This is illustrated by the case study of an Ethiopian project that has integrated family planning into a conservation and land management programme. Importantly, it suggests that voluntary family planning services should be made more available to poor communities in least-developed countries to assist their ability to adapt to the harmful effects of climate change. We stress the distinction between this approach and arguing that population growth should be slowed in these countries to curb increases in greenhouse gas emissions. It is perhaps more conducive to a rights-based approach to implement family planning programmes in response to the welfare needs of people and communities rather than in response to international concern for global overpopulation.

The National Adaptation Programmes of Action

The United Nations Framework Convention on Climate Change was established on 21 March 1994 with two chief objectives. The first was to reduce greenhouse gas emissions including carbon dioxide. This is currently being implemented through the Kyoto Protocol and is by far the most recognized component of the Framework Convention. Second, member states of the Organisation for Economic Co-operation and Development (OECD) have also committed to provide financial support – over and above existing aid flows – to developing countries that require assistance to adapt to the impact of climate change. This financial support is delivered through the Global Environmental Facility.

Between 2004 and April 2009, the first 40 governments submitted their National Adaptation Programmes of Action (NAPA) in response to a commission by the Global Environmental Facility.[11] These reports represent a significant step towards realizing the OECD pledge of support by providing a recognized process by which least-developed countries and small island developing states can identify and articulate their priorities for climate change adaptation. The NAPAs set out the proposed adaptation strategies that are eligible for funding from the Least Developed Countries Fund administered by the Global Environmental Facility. At the time of

writing, US$ 172 million had been dispersed through this fund, with aims to reach US$ 500 million before 2012.

The NAPA reports are distinctive in that they were created by governments of least-developed countries in a consultative way with civil society and local groups and they avoid a "top-down" rationale;[12] that is, they avoid a one-way flow of information between donor and recipient, a relationship that characterizes and flaws much development assistance. Analysis of the reports shows that, in addition to concerns regarding the impact of changing weather conditions on factors such as vulnerability to flood, drought and decreased crop yield, 37 of the reports (93%) were found to cite "rapid population growth" as a factor that compounds these problems.

Many common themes emerge regarding specific climate change effects. Almost all (38 of 40 countries) identify the risk of increased flooding, while 36 identify longer or more frequent periods of drought. Thirty three identify reduced crop yield, 35 fresh water scarcity and 37 discuss threats to biodiversity. For the purpose of this paper however, we highlight the fact that 37 reports identify rapid population growth as a problem that either exacerbates the effects of climate change or impedes the ability to adapt. Six of these identified rapid population growth as a priority issue to be addressed by the NAPA strategy while only three of the 40 reports did not mention population growth at all. Table 1 summarizes these findings.

The harmful consequences of climate change identified by the 40 countries are many, though they vary between countries and regions and also depend on the timescale involved. For example, in Bangladesh, increased flooding due to storms and rises in sea level are of concern while in large parts of sub-Saharan Africa there are more concerns about a decline in agricultural production.[13,14] Water insecurity is another common anxiety. As illustrated in Table 1, 37 of the reports cited rapid population growth as a detrimental factor affecting one or more of these harmful consequences. Table 2 identifies the different climate change adaptation issues that are identified as exacerbated by rapid population growth.

Demographic and climatic interplay

Given the speed of demographic change in many least-developed countries, it is perhaps no surprise that population growth is identified as problematic in strategies concerned with natural resource depletion. For example, the populations of Rwanda

and Uganda are respectively projected to roughly double and triple by the year 2050.[4,15] Modern contraceptive prevalence remains low in both countries; in Uganda it is 18% and in Rwanda 10%.[16] But these reports go beyond simply citing this problem and offer a rich description of the interplay between the consequences of both demographic and climate change.

Food insecurity is a major and recurring theme. Coastal and small island states often highlight the impact of climate change and rapid population growth upon deteriorating fishing stocks, while other nations are more concerned by the combined impact of climate change and rapid population growth upon crop yields, illustrated here by Vanuatu:

> "With the increasing population, the fallow periods are being shortened, adding to the soil degradation. Climate variability and extreme events such as droughts and floods will exacerbate the impact on the land, and in turn on the agricultural productivity."[17]

In addition to the fear of worsening food insecurity, natural resource depletion is a central theme of all the reports. While some point to the loss of such resources consequent to environmental change and extreme weather events, others outline population growth as an additional stressor. The consequences of these combined stressors are often defined both in economic terms and as increased human vulnerability to the impact of climate change, as is the case in Uganda regarding its natural forest depletion:

> "Deforestation is caused by a number of factors, including population increase and poor agricultural practices... This high rate of deforestation and forest degradation suggests that if nothing is done, Uganda may lose her natural forests by the end of this century. This will be very expensive because the consequences of deforestation are many; and include: desertification, loss of biodiversity, erosion of gene pools, increased vulnerability of local communities to climate extremes, and reduction of livelihood assets for rural communities."[18]

The Rwandan report links the same issue of heightened vulnerability with a second major demographic concern relating to climate change, that of migration.[19] Here the focus is upon the additional burden that climate change places upon

communities already facing migratory challenges caused in part by rapid population growth:

> "High density population zones are currently characterised by overexploitation of lands and a vegetal cover severely altered. Erosion and landslide processes are advanced. This situation explains the present migratory dynamic of people from the most densely populated provinces in the North (Ruhengeri, Gisenyi, Byumba) and the South (Butare, Gitarama) towards the least populated provinces especially in the East (Umutara, Kibungo) and South East (Kigali Ngali) in search of a new land for agriculture and livestock. These migrating populations are already economically vulnerable and this vulnerability is increased by the high risk of drought and desertification of the zone that receives them."[19]

This increased incidence of drought is echoed in many other countries' reports. Fresh water shortage is clearly a critical concern of many countries and is often linked in the reports to rapid population growth. Here the issue is usually one of diminishing supply (due to climate change) in the face of increasing demand (due to population growth) although some reports also point to the effects of rising pollution levels upon fresh water. Bangladesh highlights the twin effects of rising sea levels and population growth on the relative availability of fresh water:

> "The effect of saline water intrusion in the estuaries and into the groundwater would be enhanced by low river flow, sea level rise and subsidence. Pressure of the growing population and rising demand due to economic development will further reduce relative availability of fresh water supply in future. The adverse effects of saline water intrusion will be significant on coastal agriculture and the availability of fresh water for public and industrial water supply will fall."[20]

Other NAPA reports (The Gambia and Solomon Islands) link the issues of limited fresh water availability and high population density to increased spread of infectious disease:

> "…the risk of infectious disease transmission increases with overcrowding."[21]

While the concerns of the different NAPA reports regarding rapid population growth and climate change are diverse, three key themes emerge: i) reducing supply – rapid population growth and climate change act cumulatively to degrade the source of

key natural resources, for example through soil erosion and deforestation; ii) increasing demand – rapid population growth is projected to escalate the demand for resources that are diminished by climate change, including fresh water and food; iii) vulnerability to natural disaster – rapid population growth heightens human vulnerability to natural disasters caused by climate change, such as by forcing more people to migrate and settle in areas at risk of floods, storms, drought and infectious disease.

An integrated approach

While many (37) of the NAPA reports identify rapid population growth as important to our understanding of the impact of climate change, few (6) propose to address population growth directly through the adaptation strategies they outline. This is perhaps unsurprising given the facts that ministries for the environment were responsible for authoring the NAPAs while "population" is traditionally an issue for the ministry of health. It is also an unfortunate reflection of the fact that, for most of countries, family planning remains within its reproductive health sector "silo" and has yet to be addressed on a large scale with the multi-sector approach it both merits and requires. But the fact that so many ministries for the environment did mention rapid population growth suggests a potential to weaken these "silos".

Government response notwithstanding, some civil society organizations concerned with the impact of climatic trends upon human welfare have taken the lead in implementing the integration of sexual and reproductive health into environmental adaptation efforts. This trend both echoes calls to integrate reproductive health services into HIV/AIDS programmes and also points to a need for even wider multi-sector integration. An example of such a multi-sector approach is offered by the Watershed Management Project of the Ethio Wetlands and Natural Resources Association and the Consortium for the Integration of Population, Health and Environment Network in Ethiopia, the aims of which support specific objectives identified in the Ethiopian NAPA, which is explicit on the need to mainstream family planning into the agricultural sector.[22]

The Watershed Management Project in Wichi province of Metu Woreda in eastern Ethiopia ran between 2005 and 2007.[23] Its aim was to sustainably improve crop production and to minimize biodiversity loss in a region containing almost 3000

rural households. The region had been severely affected by increasingly dry weather conditions, forcing inhabitants to cut back natural forest for agricultural purposes, in turn responsible for extreme soil erosion.

The project had three implementation strands: iii) to train inhabitants and local organizations in sustainable land-management practices and "healthy ecosystem awareness", including agro-forestry, hand-pump irrigation, compost preparation and environmental impact assessment; ii) to rehabilitate uplands and wetlands through reforestation; iii) the project included promotion of modern family planning methods and HIV/AIDS awareness by inviting professionals from local heath facilities to participate in the environmental training sessions. This inclusion was based both upon the analysis that rapid population growth was in part responsible for local deforestation, and also to further the overriding project goal of improving health and welfare.

Four years from project inception, the Wichi province Watershed Management Project has achieved results that are immediately apparent to visitors to the area. Improved irrigation, compost and tree planting methods have reversed soil degradation trends and improved local nutritional levels, hence reducing the need for cutting back the forest. Furthermore, by integrating family planning and HIV/AIDS awareness, the project has helped to ensure that these environmental benefits are sustainable, protected from being eroded by rapid population growth and complemented by improved sexual and reproductive health.

Conclusion

The NAPA reports, in their repeated emphasis of the relevance of demographic trends, provide a strong collective case for the "mainstreaming" of an integrated approach to adaptation efforts that is exemplified by the Ethiopian case study. The Kiribati report puts it succinctly:

> "Population size and growth rates… have significant impacts on the state of the environment, aggravating vulnerability and adaptation needs. In this respect, population policy is an important consideration of adaptation strategies."[24]

At the national level, incorporating this demographic perspective will require the integration of voluntary, rights-based family planning programmes into adaptation

efforts, hence making climate change a priority that must be shared by departments of health as well as environmental ministries.

At the international level, rectifying the chronic global under-spend for family planning development assistance – including through integrated sexual and reproductive health and HIV/AIDS programmes – should be recognized as an important addition to international efforts to assist least-developed countries to adapt to climate change.

Competing interests:

None declared.

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Table 1. Extent and frequency of reference to rapid population growth among the 40 National Adaptation Programmes of Action reports

Rapid population growth	Number of countries (*n* = 40)	Countries
Not mentioned	3	Eritrea, Liberia, Sao Tome and Principe
Identified as pertinent to at least one specific consequence of climate change	37	Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cape Verde, Central African Republic, Comoros, Democratic Republic of the Congo, Djibouti, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Rwanda, Samoa, Senegal, Sierra Leone, Solomon Islands, Sudan, Tuvalu, United Republic of Tanzania, Uganda, Vanuatu, Yemen, Zambia
Identified as a main priority	6	Ethiopia, Gambia, Kiribati, Malawi, Samoa, Uganda

Table 2. **Ten most-cited issues identified as linked to population growth by 37 National Adaptation Programmes of Action reports**

Population/adaptation issue	National Adaptation Programmes of Action Reports (*n* = 37)
Soil degradation/erosion	21
Fresh water scarcity	18
Migration	18
Deforestation	17
Inadequate farm land per capita	14
Loss of biodiversity	11
Disease and health system constraints	8
Loss of natural habitat	8
Diminishing fish stocks	7
Desertification	5