The nexus between population and the environment

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1 Population and the environment

Global population issues represent a major challenge for the world community. The 1994 International Conference on Population and Development in Cairo (ICPD)[1] reported the existence of 'an emerging global consensus on the need for increased international cooperation' on population issues in the context of sustainable development. And, although ICPD adopted a comprehensive Programme of Action – comprising a 114-page document and the work of exhaustive discussions that involved 170 countries and 4000 non-governmental organizations (NGOs)[2] – there has yet to emerge a consensus on the nature of the relationship between population growth and the environment.

Although the world-wide rate of population growth has slowed from 1.7% per year between 1975 and 1993[3] to an estimated 1.5% per year between 1995 and 2000,[4] the number of people added annually has risen from about 72 million in 1975 to an expected 98 million between 1995 and 2000.[3] The current global population of 5.7 billion[4] is projected to rise to 6.25 billion by 2000,[3] and the UN population projections range from a low of 7.1 billion to a high of 7.8 billion for 2015,[5] 10 billion for 2050,[3] and eventually levelling at 11.6 billion by 2150.[3]

Along with rising population, the past century has witnessed a marked degradation of the environment. Air and water are being increasingly polluted, the world's rainforests are vanishing at a dangerous rate, and the environment is becoming ever more fragile, as witnessed by the depletion of stratospheric ozone and global climate warming. The global commons are especially threatened.[6]

Views pertaining to the impact of population growth on the environment 'span the entire range from unequivocally negative, even catastrophic, to unequivocally positive and highly beneficial'. [7] In between these opposing views,

> there is an entire spectrum of views that describe a contributory or proximate role for population growth in environmental degradation. According to these views, poverty, inequality, distortionary policies, and export demand are the ultimate causes of environmental degradation, exacerbating the impact of population on the environment. The implication is that the primary focus of environmental policy should be to deal with these root causes.[8]

A recent study aptly notes:

> The relationship between population and environment is neither immutable nor direct. It is mediated by mobility, access to markets, distribution of wealth, institutions, and government policies. Where these factors promote rapid and flexible responses, population growth can be combined with, or even promote, agricultural intensification, industrialization, and technological change culminating in sustainable development. Where markets are not functioning, mobility is restricted, land and wealth are skewedly distributed, and government policies counter or block the avenues of individual and social response, a low-level trap is artificially created where diminishing returns to land lead to resource depletion and degradation, rather than to investment and innovation.[9]

2 Perspectives on population and the environment

Six articles in this symposium issue present varying dimensions of population policies and the relationship between population and the environment.

In the opening article, 'Population and the environment: toward a theory of environmental Malthusianism,' Robert Hardaway suggests that the need is for government environmental policies and the private environmental movement to wholly integrate population concerns into their approaches. He describes current governmental environmental policy as 'essentially curative...rather than preventive...[and] exclusionary'. Specifically, he describes the manner in which population is related to governmental policies regarding family planning, abortion, immigration, free trade, and economic regulation.

Professor Hardaway's thrust is on exploring the link between population, the law, and the environment. He examines both federal and state environmental laws and policies in the US in a historical context, beginning with the establishment of Environmental Quality Council in 1969 and the adoption by Congress of the National Environmental Policy Act of 1969. He criticizes government policy under which environmental impact statements do not require a cost–benefit analysis. He is equally critical of the 'environmental movement', which, he says, 'must begin to address the issues of population control and implementation'.

After a discussion of government policies and case law related to family planning and abortion, and of immigration and economic regulation, he concludes by enunciating the theory of environmental Malthusianism:

> Population stabilization will require several changes in the formulation of policy. Contraception and education regarding its use need to be more easily accessible worldwide. Governments must promote non-coercive but nonetheless effective family planning programs. In addition, abortion must be recognized globally as a fundamental right of a woman.
>
> Private environmental groups will need to integrate their policies with population groups, and immigration must be connected with environmental policy. Economic growth should not be ignored, but it should not be relied upon to continually stimulate consumer demand. Lastly, current remedial environmental policies are effective in buying time until a more integrative approach can be implemented to control population and protect the environment. An integrative approach will require all humans to become part of a long-term solution by actively promoting policies that stabilize population and foster environmental protection.

In the next article, 'Four perspectives on population policies', Urs P. Thomas presents an evaluative and synthetic analysis of the major perspectives in the field of population studies and aims at critically assessing 'their pertinence for stewardship of the global ecosystem'.

Dr Thomas notes that consumption patterns in the industrialized countries and population policies in developing countries are 'the two most intractable barriers standing in the path toward sustainable development'. However, he states that the relationship between lifestyle and environmental degradation in the former is very different from that in the latter, for whereas in the industrialized North there is a direct and clear causal relationship between the two, in the developing world 'causalities are more complex: the effects of poverty are the key to understanding both environmental degradation and population growth'. Poverty is both the cause and the result of population growth, as well as environmental degradation. And the situation is exacerbated by serious environmental health problems caused by unsafe drinking water.

Next, Dr Thomas discusses the four major perspectives by placing population policies into the wider context of North–South relations and sustainable development policies. He calls these perspectives: (1) the Lip Service For Solidarity Perspective; (2) the Blame the Rich Perspective; (3) the Sustainable Development Perspective; and (4) the Intergenerational Perspective.

In discussing the Lip Service For Solidarity Perspective, Thomas suggests that solidarity 'implies a serious will to reduce the North–South gap', but this perspective simply pretends to alleviate the gap while not being really interested in doing so.

Well-meaning pledges and rhetoric by the industrialized world are not backed up by any solid commitments. Dr Thomas illustrates this point by referring to the Programme of Action adopted at the ICPD, and the outcome of the 1995 Copenhagen Summit on Social Development which 'should have been the crowning achievement of the preceding series of sectoral multilateral development conferences', but showed no progress on debt reduction or strengthening present aid levels. In Thomas's words, '[u]nfair terms of trade are at the root of this cleavage, and there is no sign in sight that things are about to change. This does not bode well for alleviating poverty, and with it population growth.'

Dr Thomas finds fault with the major thrust of the Blame the Rich Perspective, that industrialized countries' present and past consumption patterns are the main cause of environmental problems and that poor countries do not have to stabilize their population levels because such stabilization would not reduce environmental degradation significantly.

Dr Thomas considers the Sustainable Development Perspective to provide the foundation for multilateral and bilateral development policies but, with reference to case studies from Kenya, Nepal, Thailand, Sri Lanka, the Indian state of Kerala, and China, suggests that, under this perspective, population priorities, unfortunately, tend to get lost among many other objectives. Finally, Dr Thomas finds the framework of the Intergenerational Perspective, which is built on the principles of conserving biodiversity, quality of the ecosystem, and access to natural resources, as the preferred analytical framework, because it places adequate emphasis on future generations and on collective aspects of the development process.

In the next article, 'Population, development and the environment: Programme of Action adopted at the 1994 International Conference on Population and Development', Ved Nanda finds the Programme's focus on population-related problems, instead of

demographics alone, to be promising. He examines the Programme in a historical context and specifically discusses principles adopted at the Conference and the issues of population and development, population and environment, empowerment of women, and the challenge of implementation.

Professor Nanda begins by describing the gravity of the population challenge. He observes:

> Although it may be debatable as to how adversely [the population] growth affects social and economic development or the environment, there is little doubt that such growth intensifies environmental and developmental problems and consequently our ability to effectively address them. Thus, international policies must respond to this demographic momentum.

After studying the results of four prior global population meetings, Professor Nanda notes how NGOs, especially women's groups, actively participated in the ICPD preparatory process and influenced the wording of the final document. He refers to the remarkable achievement of the Cairo Document, which placed population issues within the context of sustainable development and reaffirmed the connections among population growth, poverty, patterns of production and consumption, and the environment.

He finds the goals and objectives established under the Programme of Action commendable, but says that 'implementation of these goals is the key'. He considers the Principles contained in the Programme on subjects related to development, health, education, children's rights, family, and violence and coercion to be wide-ranging and appropriate. He notes that although many of these Principles are a reaffirmation of norms adopted earlier in various international instruments, others, such as gender equality and equity and the statement that 'human rights of women and the girl child are an inalienable, integral and indivisible part of universal human rights', are positive developments.

Professor Nanda finds merit in the criticism that perhaps adequate attention was not given in the Programme of Action to population, development and environment issues. He considers the part addressing the relationship between population and the environment to be 'certainly the weakest part of the Programme of Action', because it simply reaffirms objectives and actions for integrating environment and development adopted in Agenda 21 at the 1992 United Nations Conference on Environment and Development in Rio De Janeiro, and calls on governments to support those objectives and actions.

He concludes that '[c]oncerted international, regional and national efforts, in cooperation with NGOs, are imperative to implement the recommendation and goals of the Programme of Action. ... Only the political will of the international community will determine whether [these] goals ... are met.'

The remaining three articles are concerned with specific issues, the first on biodiversity, the second on population and water resources, and the third on the issue of population growth in Colorado.

Fred Cheever, in 'Human population and the loss of biological diversity: two aspects of the same problem', focuses on the relationship between human population and biological diversity. He remarks that 'continued human population growth threatens the biological resources of the planet', and notes that serious strains are already visible, as illustrated by the decline in the world fish catch and world bird population.

Professor Cheever warns that the extinction of endangered animals and plants that are 'parts of the biological systems that maintain both human and non-human life', likely 'prefigures our own'. Thus he suggests that 'the maintenance of support systems for non-human life should be as much a part of population control strategy as the distribution of birth control information'.

Cheever explains the nature of our dependence on natural systems which embrace the richness of non-human life: 'Our ability to feed, house and clothe ourselves is contingent on the functioning of the natural systems of which species are part. We cannot grow crops without healthy soil, build houses or write articles without healthy forests or breathe air without the biological systems which renew its oxygen content.' However, he adds that we cannot select for saving the species and ecosystems we need to support human society and allow the destruction of the rest,

> because we know so little about the functioning of biological systems and the role that specific species and ecosystems play in them. We do not know how many species there are on the planet. ... Just as important, we know next to nothing about the role that the vast majority of the approximately 1.5 million species we have identified play in the biological fabric of the planet: what they eat, what eats them, what other functions they perform that facilitate the operation of ecosystems.

Further, the effects of the loss of biological diversity may be hidden over time.

Professor Cheever suggests that efforts to protect biological diversity can further the population debate in many specific ways, such as additional understanding of natural systems can identify the potential effects and real limits of population growth; better understanding of environmental systems could 'facilitate identification of those situations in which environmental degradation actually encourages high fertility and population growth'; and better understanding of biological systems could 'facilitate the identification of "win-win" environmental development actions, which both increase human wealth and decrease biological degradation'.

Professor Cheever recommends two interrelated international initiatives: one, to develop a high quality information base covering the planet's ecosystems; and the other, the need to set aside an international network of habitat reserves, 'space in which the biological systems on which we depend can be kept safe from their human beneficiaries'.

Joseph Dellapenna, in 'Population and water in the Middle East: the challenge and opportunity for law', prescribes what he terms 'communal water management system' as the optimal way to manage scarce water resources in the context of growing population. He exhorts us to think more carefully about the relation of population to water resources. His focus is on the river valleys in the Middle East, from Egypt to Iraq, with 'certain common characteristics, including precipitation levels that vary widely from year to year. ... This pattern often causes alternating periods of years of drought followed by years of potential rain and bountiful harvests, with the driest subregions having the most unpredictable precipitation patterns.'

With the population of the region growing very fast, efficient use of water resources becomes an important issue. Professor Dellapenna notes that the clearest example of population outgrowing the available water supply is in the Gaza Strip. He describes the situation in the Jordan Valley, the Nile Valley, and Mesopotamia, and explains how growing populations are placing immense pressure on the major riparian states in all these areas. He suggests that, notwithstanding conventional wisdom, conflicts are not caused by pressure on water resources. In his words, water 'in fact is simply too critical a

resource to fight over, at least when both sides are dependent on the same sources and therefore mutually vulnerable to any attacks directed at their common sources'. Professor Dellapenna finds ample evidence from around the globe that 'strategically as well water is too important to fight over, or at least to fight to the end over'.

In answer to the question as to how contending states ought to cope with the pressures created by growing populations competitively exhausting the water resource, he suggests the following possibilities: (1) limiting or reducing population, (2) importing water, and (3) changing patterns of water use.

After discussing all these possibilities, he concludes that 'changing patterns of usage is the most promising avenue for coping with the water needs of growing populations in the Middle East. This entails both more efficient use and utilizing what formerly were disposed of as wastes as a significant resource.' The 'communal management' system, he suggests, will come to fruition only if there is necessary foresight and political will.

Richard Lamm argues in 'The West: asking heretical questions', that people in Colorado, which is in the centre of the 'fastest growing region of the fastest growing industrial country in the world', are asking 'Why do we want additional population growth? What public policy reasons are there to double the population of Colorado? We are hearing a question never before articulated: What is our demographic destiny?' Lamm suggests that the debate in Colorado is part of a larger worldwide debate. 'The world whose institutions atavistically promoted population growth are now asking heretical questions about limits. ... These are life and death questions about the future of the globe.'

Professor Lamm suggests that people in the Rocky Mountain region are concerned about limits for reasons of the quality of life, which is suffering because of growing traffic, sprawl, pollution, crime and taxes. Growth, he says, has become the biggest issue in Colorado. He discusses population growth in the West in the context of economic growth, and states:

> Suffice for this essay, we do know that population growth and economic growth are not Siamese twins. There is no economic reason beyond a certain size to add more population. The wealth of a country has much more to do with the education level and skills of its population than the size of the population.

Lamm discusses the question pertaining to the population-related goals and policies for the Rocky Mountain West and considers it appropriate to begin a dialogue on the demographic future of the Rocky Mountain region. He considers the ultimate demographic question in the United States to be that of immigration. In his words,

> The United States no longer is an empty continent that can absorb large pools of labour. We are a cash wage society that requires tens of thousands of dollars to create a job. As conditions change, so should our policy change. It is time to close down the age of immigration. It is time to control our demography.

He concludes: 'A world that has always promoted population growth is now moving fast to stabilize that growth. Both at a world level and at a regional level, people are thinking the unthinkable, questioning the unquestionable, and reforming the unalterable.'

3 Conclusion

As noted earlier, there are unanswered questions about the nexus between population and the environment. However, as Professor Robert Cassen has stated:

> ...there clearly are relationships between population growth and such wider issues as global warming and other sources of climate change, the ozone layer, acid rain, and pressure on renewable resources beyond national borders. Developing countries, especially as they grow more affluent, will contribute to and suffer from these consequences. ... Population growth will exacerbate the difficulties, particularly if policies and incentives are not put in place nationally and internationally to prevent environmental damage.[10]

In presenting in this symposium issue the various perspectives – on population and environmental policies, on the nexus between population and the environment, and on the role of law and institutions in providing a framework for addressing these difficult issues – it is our objective to further the ongoing discourse.

It seems obvious, but nonetheless needs reiteration, that concerted international action is essential to formulate appropriate population and environmental policies in the context of perspectives of sustainable development and intergenerational equity. The rhetoric of the past two decades must now be matched by action.

Notes

1 *Report of the International Conference on Population and Development (Cairo, 5–13 September 1994)*, UN Doc. A/CONF. 173/13.

2 Sadik, N. (1994) on the International Conference on Population and Development, *Population Development Rev.*, Vol. 20, No. 4, p. 914.

3 United Nations Population Fund (1993) *The State of the World Population,* 1993, p. 1.

4 United Nations Population Fund (1995) *The State of the World Population,* 1995, p. 67.

5 Ref. 1, p. 9.

6 See generally Nanda, V. P. (1994) *International Environmental Law and Policy*, Transnational Publishers, New York, Chap. 2.

7 Panayotou, T. (1994) 'The population, environment and development nexus', in Cassen, R. and contributors, *Population and Development: Old Debates, New Conclusions*, Transaction Publishers, New Brunswick, Oxford, p. 149.

8 Ref. 7 (footnotes omitted).

9 Ref. 7, p. 176.

10 Cassen, R. 'Overview', in ref. 7, p. 16.