

Report of the International Workshop on Population-Poverty-Environment Linkages

KEY RESULTS AND POLICY ACTIONS

**23-25 September 1998
IUCN Headquarters
Gland, Switzerland**



UNFPA
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The World Conservation Union

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Co-organized by UNFPA, UNEP and IUCN

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Acronyms

BSSA	Basic Social Services for All
CCA	Common Country Assessment
CGIAR	Consultative Group on International Agricultural Research
GIS	Geographic Information System
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
ICPD	International Conference on Population and Development (Cairo, Egypt, 1994)
IIASA	International Institute for Applied Systems Analysis
IUCN	The World Conservation Union
NGO	Non-governmental organization
PAR	Participatory Action Research
PDE	Population-Development-Environment model
PPE	Population-Poverty-Environment
RMSM-X	World Bank's Revised Minimum Standard Model-Extended
UNCED	United Nations Conference on Environment and Development (Rio De Janeiro, Brazil, 1992)
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund

Executive Summary

In the 1990s, a series of global conferences succeeded in raising awareness of the challenges facing the world due to interactive linkages among population, increasing poverty and environmental degradation. These conferences – the United Nations Conference on Environment and Development (UNCED), the International Conference on Population and Development (ICPD), the Fourth World Conference on Women, and the World Summit for Social Development (Social Summit) – arrived at consensus on the actions required to bring about environmentally sustainable and equitable development. Since those conferences, the international community has continued to assess progress and to improve the translation of the general consensus guidelines into national and local action programmes.

A. The Workshop

This report summarizes the observations and recommendations of the International Workshop on Population-Poverty-Environment Linkages, held in Gland, Switzerland, 23-25 September 1998. Organized as part of the process to improve policies and programmatic action, the Workshop aimed, specifically, at identifying the following:

- Lessons learned from case studies and analyses of Population-Poverty-Environment (PPE) linkages;
- PPE-related problems and PPE “hotspots”, those parts of the world where poverty and environmental degradation have reached critical thresholds and where population pressures are important contributing factors;
- Tools for integrated policy formulation and planning, including tools for national and subnational planning for sustainable development, and techniques for local community-level planning for the integrated management of natural resources and population dynamics; and
- Actions for addressing PPE linkages, with special emphasis on incorporating gender considerations in such approaches.

B. Lessons Learned

Lesson The consensus reached at the global conferences has helped to raise awareness at international, national and local levels of the need to make integrated decisions addressing PPE linkages in programme planning and implementation. However, most decision-making and funding, internationally, nationally and locally, remain divided by sectors such as agriculture, industry, trade, labour, education and health. Therefore, cross-cutting issues such as poverty, the environment, women’s empowerment and concerns affecting youth and adolescents may be inadequately addressed.

Lesson Integrated, multisectoral planning is complex and difficult. Nevertheless, as a recent World Bank publication, *Assessing Aid: What Works, What Doesn't, and Why*, points out, getting these policy frameworks “right” has tremendous positive consequences. Multisectoral PPE policy decisions are critical because they provide the framework for sector-specific decisions and programmes. Econometric models and budget allocation frameworks which include only, or largely, economic and financial variables fail to account for long-term social, environmental and population consequences. The complex task of developing multisectoral PPE policies and plans can be effectively supported through computer-based analysis and planning tools, geographic information systems (GIS), and participatory action research (PAR), planning, and programme actions with local communities. Some pilot work on these techniques needs further support.

Lesson The many tools for decision support at national, subnational and local levels, including frameworks, computer-based models, GIS, environmental and social impact analysis, and participatory assessment and planning techniques, can facilitate more integrated and equitable planning. The results, nevertheless, depend on the assumptions and attitudes of the people using them. If anything, the tools simply make those assumptions more transparent.

Lesson The participation of all stakeholders, particularly women, needs to be ensured in policy-making and programme planning. During implementation, action partnerships must be formed and maintained among communities, local government, the private sector, national government, and non-governmental organizations (NGOs), including those serving women and youth, to achieve an impact on PPE-related variables.

Lesson In many countries, community-based organizations and local NGOs have developed innovative approaches for meeting livelihood security needs while simultaneously promoting improved environmental management and reproductive health services. National governments and international organizations have much to learn from them.

C. Key Future Actions

The Workshop identified and classified key future actions into those which relate to international efforts to address PPE linkages and those directed at national or subnational levels. They were further categorized by stages in the management or programme decision-making cycle. The most significant recommendations for action are the following:

- Advocacy should be undertaken to improve understanding of the complexity of PPE relationships. Sustainable development assistance needs to be implemented within a coordinated multisectoral framework and plan, which should include gender, equity, population and environmental considerations. Within this framework, sector-specific approaches would be related to one another.

- Managers should be provided with multisectoral planning tools and the requisite training. The aim should be to provide a national policy and programme framework within which they can work with localities to plan and monitor specific programmes and actions, and to create reward or incentive systems so that these managers can initiate and maintain PPE programmes.
- Women are the key health, education, economic and resource managers. They, and their children, are also those most likely to experience disproportionate effects of poverty and environmental stresses. Therefore, integrated programming requires the full involvement of women. One of the entry points for linking population and the environment is via gender-sensitive environmental activities (e.g., water supply/sanitation or natural resource management) and reproductive health initiatives.
- International organizations should develop criteria for the identification of PPE hotspots at the national or the regional level. They should also develop a procedure for selecting relevant criteria for local situations, quantifying the thresholds for each criterion, and assist Governments in prioritizing identified areas.
- International organizations should provide guidance and assistance in defining programmes and actions to address PPE linkages. These should draw on local initiatives and ideas (e.g., as presented in the case studies and section III, c). They should assist countries in selecting the policy, strategy and programme actions for addressing PPE linkages, including those in actual and potential hotspot areas.

I. Introduction

The International Workshop on Population-Poverty-Environment (PPE) Linkages, held in Gland, Switzerland, 23-25 September 1998, brought together policy makers, population-environment experts, NGO representatives, community development fieldworkers, and senior representatives from the United Nations Population Fund (UNFPA), the United Nations Environment Programme (UNEP), IUCN–The World Conservation Union, and the Government of Norway for three days of discussions. (See Annex 1 for the agenda; Annex 2 for a list of participants; Annex 3 for a statement by Kerstin Trone, Deputy Executive Director for Programme, UNFPA; and Annex 4 for background documents.)

The Workshop sought to evaluate the overall impact on PPE-related issues of the follow-up to several global conferences of the 1990s, including the United Nations Conference on Environment and Development (UNCED), the International Conference on Population and Development (ICPD), the Fourth World Conference on Women, and the World Summit for Social Development (Social Summit). These conferences arrived at a consensus on policies and programmes to promote sustainable development, reproductive health and poverty alleviation.

To identify the nature of PPE linkages and the policy and programmatic responses that could address them, participants reviewed experiences in South Asia, sub-Saharan Africa and Central America. Through small-group discussions, presentations concerning integrated tools and methodologies, and mapping exercises, participants examined the policy and programmatic implications of the linkages. They also identified practical tools and techniques for action-oriented programmes and projects addressing PPE concerns in a holistic manner.

This report provides an overview of the Workshop proceedings. It presents what is known about PPE linkages and what is being done, describes tools and techniques to understand PPE linkages and make better decisions, and presents recommendations for further action.

II. Overview of Population-Poverty-Environment Linkages, Indicators and Lessons

A. Linkages at the Macrolevel

On the first day of the Workshop, case studies were presented to illustrate the variety and complexity of PPE linkages and the ways in which international and national institutional and market trends affect local conditions, sometimes worsening and perpetuating problems (see Box 1). The PPE linkages, which are complex in and of themselves, are also intricately linked to these broader international and national forces.

The case studies from Ghana, Guatemala and India illustrate how the appropriation of productive lands and water resources has forced poor farmers onto marginal lands that quickly become degraded. Inequitable markets and biased trade arrangements often exacerbate local poverty and environmental problems. In Haiti, long-standing disparities between wealthy landowners and subsistence farmers have created a market structure with few incentives for sound environmental management or population stabilization. Moreover, economic responses, such as recently established export-oriented assembly industries, have had little impact on alleviating poverty.

Box 1. Case Studies from Four Regions

In Western Ghana, a recent study (Benneh *et al.* 1998) shows that PPE linkages exist even in regions of low population density (62 persons per sq. km), high rainfall and apparently abundant natural resources. This area, characterized by high in-migration and a receding forest frontier, is home to many multinational mining corporations. Deregulation of the Ghanaian economy has given preference to such export-oriented industries, even though these privatized lands claim a disproportionate amount of the surface area. Poor farmers are forced into forest reserves and onto marginal lands in order to subsist, cutting trees for fuel and to expand agricultural lands.

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Similar problems have occurred in **Guatemala** (Barrientos *et al.* 1998), where 150 years of agro-industrial export fruit production in the richest agricultural areas along the Pacific coast have enriched a small number of landowners. The resulting land squeeze has contributed to growing inequity and migration flows into the Petén, the country's forest frontier and an area of high biodiversity, poor soils and easily polluted water resources, owing to its porous limestone bedrock. The poverty and poor health of the *campesinos* living in the Petén is more related to the lack of government services and to ill-suited farming, water and sanitation technologies than to population numbers *per se*. However, if population growth in the Petén continues at its current rate of 5 per cent per annum, there is concern for the conservation of biodiversity in this sensitive environment.

Box 1. (Continued)

Another case study, in Tumkur District, **Karnataka State, India** (Kumar *et al.* 1998), shows how population pressures can lead to resource degradation and poverty, while, simultaneously, one subset of the local population experiences increasing affluence. In this area, with a population density of 110 persons per sq. km, population growth has contributed to deforestation and expansion of rain-fed agriculture onto hillsides where erosion rates are highest. The issue is a matter of access to resources, and in this case the critical resource is water. The water is pumped from privately owned boreholes to irrigate commercial coconut and betel-nut crops. Moreover, even though fertility rates have decreased in the study area, due to the young age structure of the population the population is still growing at 1.4 per cent per annum, contributing to ever greater pressures on resources.

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Few countries are more suited for the study of PPE linkages and the testing of policy responses than **Haiti**. With a population of 7.5 million, growing annually at 2.1 per cent, Haiti has a density of 273 persons per sq. km, a per capita income of less than a dollar a day and a heavily degraded environment. International migration represents one of the few prospects of advancement available to the vast majority of Haitians. A careful study of the factors contributing to the complex PPE spiral suggests that failed governance, predatory policies towards subsistence farmers and lack of attention to social services, particularly health and education, are of equal or greater significance as proximate causes than population growth *per se* (de Sherbinin 1996).

A few small-scale, community-based programmes in Haiti have been able to point the way forward through income-generating activities, adult literacy, health care, training and environmental management. On the national level, further attention to the plight of the poor, and particularly poor women in informal unions, would offer alternative choices to women and go a long way towards addressing the linkages.

The case studies show also that determining the exact extent, cause and effect of PPE linkages is a complicated task. Population growth rates are highest in some of the world's most sensitive ecosystems, including drylands and tropical forests, which are vulnerable to rapid degradation. Based on the case studies and Workshop discussions, it was observed that PPE linkages tend to be most pronounced in those regions with the following characteristics:

- A high dependence on natural resources for subsistence livelihood;
- A scarcity of the most basic renewable resources, such as water;
- Degradation of soil over a critical threshold beyond which rehabilitation is costly;
- Low indicators of human and social development, including reproductive health, with women and children experiencing disproportionate effects;
- Inequitable access to natural resources; and
- Women with negligible role in social and economic decision-making.

Due to high levels of vulnerability, the slightest alteration in climate, political conflict or natural resource availability in these areas often results in loss of life and suffering. In many such regions, natural disasters are leaving behind a trail of unprecedented mortality and morbidity.

During the Workshop, participants engaged in a mapping exercise to identify areas in which PPE linkages are most in evidence (i.e., PPE hotspots). Three regional groups were formed. Each group was provided with base maps showing ecosystem distribution, population distribution, and health- and poverty-related indicators (e.g., child malnutrition). In addition, various data sheets were provided. Each group was instructed to develop its own methodology in approaching the mapping of hotspots, and thus the criteria are not comparable. Nevertheless, the approaches adopted by the groups are indicative of the kinds of criteria and methodologies that might be utilized to develop a more uniform approach to identifying PPE hotspots.

For Africa, the group chose to identify entire countries as PPE hotspots if they met five or more of the following six criteria:

- Per capita purchasing power parity below US\$ 1,000 a year;
- Less than 50 per cent of the population with access to safe water;
- Population growth higher than 2.6 per cent;
- More than 20 per cent of the national territory subject to land degradation;
- Per capita cropland less than 0.2 hectare; and
- More than 20 per cent of children underweight.

On the basis of these criteria, the group classified five countries – Ethiopia, Madagascar, Somalia, the United Republic of Tanzania and Zaire – as “severely stressed”.

The Latin America group first identified those areas in which significant future PPE interactions are likely. The group then selected areas in which intervention now could help to reduce the threats to the environment and human well-being. Because there was no representation from South America, the group chose to focus on Central America. The map showed already heavily degraded areas along the Pacific coast, with arrows indicating population flows from those areas to forest frontiers (such as Guatemala’s Petén region) and the Caribbean coast. The destination areas represent potential hotspots and areas where current action could forestall environmental degradation.

The Asia group created a menu of criteria similar to those of the Africa group. It focused primarily on areas with high natural population increase (births minus deaths) or high in-migration and in which specific kinds of environmental degradation are occurring. The designated hotspots included northern Pakistan, Iraq, the Syrian Arab Republic and other parts of Western Asia where natural population increase is very high and water scarcity is acute; several islands of the Indonesian archipelago, where migration and deforestation coincide; and parts of coastal China, where in-migration, industrial pollution and resulting human health problems are growing concerns.

Many regions of high population growth and natural resource degradation are also regions of high biodiversity (e.g., Madagascar, Central America, and South-East Asia). It was acknowledged that the resources and appropriate technologies to address PPE linkages are available. It was also agreed that effective policy responses to any one of the three elements can create positive synergies for the other two. Superimposing criteria relating to women, health (including reproductive health), and legal, social and educational status on the usual environmental degradation criteria may permit a more realistic assessment and identification of current and future vulnerable areas. Combined with scenario analysis, such an identification could be valuable in efforts to avert disasters or develop early-warning systems.

B. Linkages at the Microlevel

Another approach to providing an early-warning system for local areas that are now experiencing critical PPE relationships entails assessing an area's stage related to a progression of responses at the microlevel, along with tracking other PPE indicators. For an understanding of PPE linkages at the microlevel, Workshop participants discussed the realities of rural household and community decision-making in many areas. They looked at the successive responses adopted by subsistence agriculture households and communities as they confront increasing pressure on resources. The first set of responses often adopted by rural households includes the expansion of agriculture into frontier areas or marginal lands, or the intensification of agriculture through short fallow cycles and organic or chemical fertilizers. The second set of responses involves increasing non-farm income through trade, crafts, and agricultural labour. The remaining responses are demographic and involve either out-migration (e.g., moving to frontier areas or cities) or limiting the number of births (Grigg 1980; Bilsborrow and Carr 1998). In areas where poverty levels are high, local resource management institutions have broken down, and options for out-migration are limited, degradation can pass a critical threshold and develop into a "downward spiral" (UNICEF 1994). In these areas, poverty, lack of education and insufficient health services contribute to high fertility, which, in turn, feeds population growth and environmental degradation. This further increases poverty levels and, thus, perpetuates a vicious circle.

This vicious circle is partially explained by understanding the incentives for child-bearing. In addition to assisting with household tasks from a very early age, children have often made substantial contributions to family livelihoods by providing agricultural labour and by helping to convert open-access resources – such as forests, grazing lands and fisheries – into household income (see Box 2). Thus, even as pressure on natural resources is resulting in their decreased availability at the societal level, there may be continued incentives for high fertility at the household level.

Box 2. Consequences of HIV/AIDS and Degraded Socio-economic Conditions in Rural Zambia

Environmental shocks of recent years and the progression of the AIDS pandemic have had a fundamental impact on the communities of rural Zambia. Poverty has increased, social and economic infrastructures have deteriorated and the environment has become degraded. This has enhanced the value of children. Often, their labour power, used as early as the age of six, has been essential to their families' survival.

Research was carried out in Eastern Province, Zambia, an area of high fertility where women were having, on average, 7.1 children. The region was badly hit by drought, resulting in chronic poverty. Its people were also experiencing increasing rates of HIV infection. Of particular interest was the link between these difficulties, the value of children and the effects on human fertility. Among the findings, researchers discovered:

- The importance of labour and cash transactions for rural households is intensified in periods of environmental and social change, with children's labour increasingly being redefined in cash terms;
- Children are increasingly being viewed as assets to be negotiated between rival parents and families. For example, custody arrangements for children following divorce are changing. Children formerly stayed with their divorced mothers; they are now contested by the fathers' families because of their labour value; and
- It is now socially acceptable for young unmarried women to become mothers, as the labour of mother and child remains with her natal family.

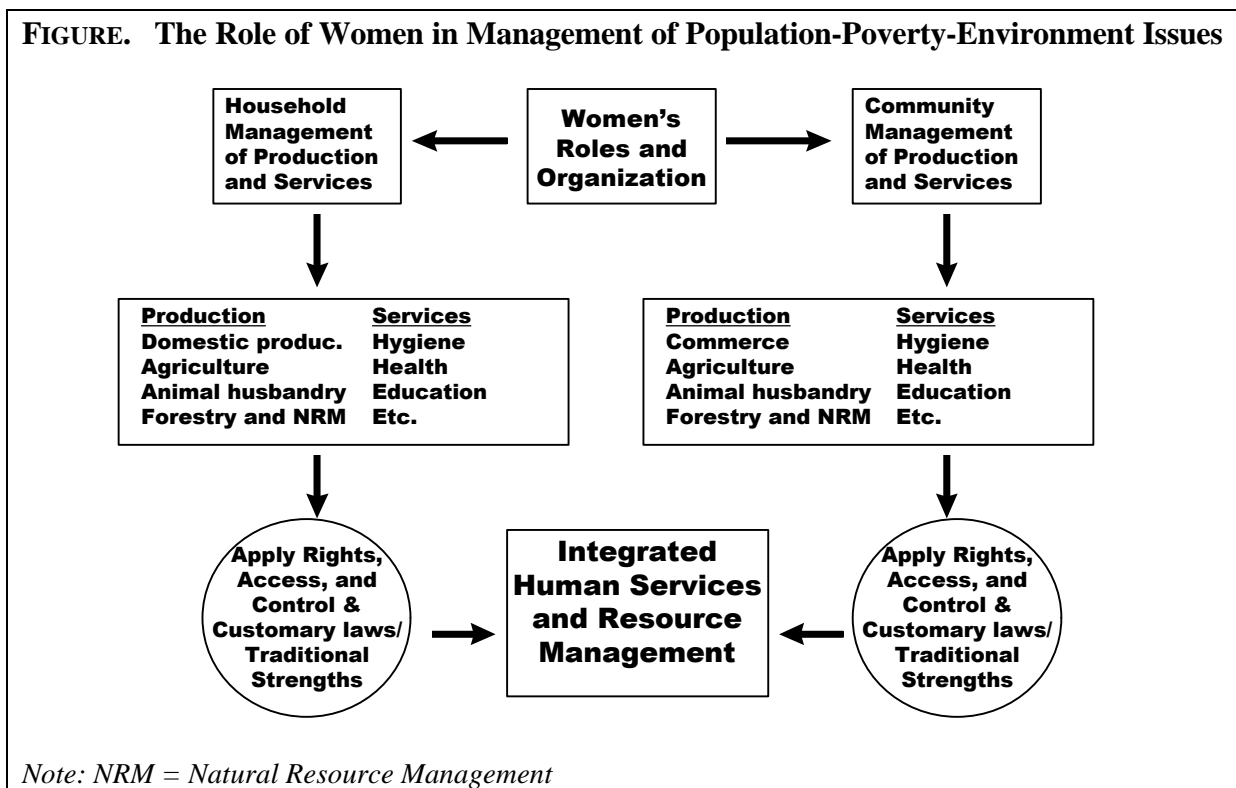
Adapted from Barrett and Browne, 1998

Today, however, a number of policy and programmatic responses have been identified that might de-link subsistence household livelihood security from family size. These include:

- Reproductive health information and services (including AIDS-prevention programmes) and reduction in infant, child and maternal mortality;
- Education (especially for the girl child) aimed at meeting the needs of rural agricultural communities;
- Informal education for youth and adolescents;
- Improved agricultural extension and other participatory development efforts that are truly interactive (not top down) and designed for subsistence farmers;
- More secure land and resource tenure;
- Effective common property and other cooperative management regimes;

- The provision of credit and economic opportunities; and
- Empowerment of women.

For a number of reasons, a gender perspective is critical for addressing microlevel PPE problems. First, men and women have different roles and responsibilities with respect to health, natural resource management and income generation. Women often play a primary role in the management of health systems and natural resources (see Figure). They are also those most likely to suffer disproportionately the consequences of a degraded environment. Women also have a close connection to the concerns of future generations. Finally, involving women in community action programmes gives them a role outside of those traditionally defined, such as child-rearing and domestic tasks. Thus, promoting women in decision-making and in guiding the process of policy and programmes to address PPE linkages is a “win-win” strategy that is beneficial from numerous perspectives.



III. Tools to Understand and Address Population-Poverty-Environment Linkages

The second day of the Workshop was dedicated to a discussion of three types of tools that can promote integrated analysis and decision-making to address PPE linkages: national-level planning tools, subnational planning tools, and participatory assessment and planning methods at the local level.

A. National Planning Tools: Frameworks and Models

Frameworks and models provide two useful tools for understanding and addressing PPE linkages. Frameworks are general statements of linkages among variables that affect and are affected by one another, and are most often portrayed as flow diagrams of boxes and arrows. Models are specific statements of linkages in which both the initial conditions and connections among factors are specified in quantitative terms, allowing one to create various future scenarios by changing the assumptions.

It is now well accepted that poverty, population, the economy and the environment are interconnected, and various frameworks have been proposed to illustrate the linkages. Beyond these general statements, there are many “mental models” or “intellectual maps” of exactly what the linkages are and how strong they are. Computer models provide a way to express the mental models explicitly. They allow the detailed assumptions to be discussed and explored and their implications traced in more detail and precision than can be done by the mind alone. Modelling was formerly the province of highly trained computer technicians. Fortunately, new hardware and software technology has made modelling more accessible, thereby facilitating dialogue and understanding among key actors at the national level and contributing to participatory processes. Furthermore, the new-generation models are usually built with numerous interconnected sector models instead of one overall structure, permitting the modelling of complex human-environment systems.

Two computer models discussed in the Workshop are pioneering efforts to state the linkages inherent in the PPE frameworks: The International Institute for Applied Systems Analysis (IIASA) Population-Development-Environment (PDE) model and Millennium Institute’s THRESHOLD 21. Both have received UNFPA and United Nations support for applications in developing countries. These models are useful for building consensus and identifying optimal uses of available financial resources. They can also contribute to formulating comprehensive strategies for development planning and population policy-making and to testing policies that could counter negative PPE interactions.

1. The Population-Development-Environment Model

The PDE model is a scientific research model that has been applied in Cape Verde, Mauritius and the Yucatán Peninsula. Applications are in progress for Botswana, Burkina Faso, Mozambique and Namibia. Its prominent features include multi-state population projections, in which the population is desegregated by age, gender, education level and rural/urban place of residence. It uses an input-output model to represent the economy and includes a set of modules for the environment, including water, atmosphere, land use and energy modules. An HIV/AIDS module is being added for the African analysis. Fertility and mortality functions are dependent on national conditions, such as education levels and labour force participation, and are therefore not independent variables set on the basis of best guesses. The modules can be run independently, and each can be used separately as a planning tool.

2. The THRESHOLD 21 Model

The Millennium Institute's model is intended not for research but for capturing the prevailing views of the PPE linkages in a way that can facilitate dialogue and consensus-building among government ministries, multilateral banks, United Nations organizations and agencies, bilateral donors, corporations, commercial banks and NGOs. It was inspired by the World Bank's Revised Minimum Standard Model Extended (RMSM-X) model. It has, however, replaced the Bank's standard production function with a Cobb-Douglas production function that permits the specification of parameters and connections related to resources, environment, health, population, education, nutrition and technology.

One advantage of THRESHOLD 21 is that it includes indicators of the United Nations Development Assistance Framework (UNDAF), the ICPD, the World Summit for Children (Children's Summit), UNCED, the Basic Social Services for All (BSSA) Task Force, and the World Bank as well as the traditional national accounts. It represents, specifically, many of the linkages to emerge from the global consensus developed in recent conferences. Versions of the model have been designed for six developing countries (Bangladesh, Benin, Cambodia, China, Malawi and Tunisia) and two industrialized countries (Italy and the United States of America). Box 3 highlights the experience of applying the model in Malawi.

3. Discussion

The discussion following the two presentations addressed a number of questions concerning the validity and reliability of modelling results. The issue of poor data quality was raised, and the modellers acknowledged that data are often lacking but that modelling itself can be an impetus to developing better data sets. They noted that whatever one may think of computer simulations, everybody carries around mental maps. Models enable one to specify the linkages and attempt to determine what the likely outcomes are, based on alternative policies, in the area of social development, environment and future population size and structure. The best computer models are simple but not simplistic, dynamic and not static. They are also transparent.

Box 3. The Power of Computer-based Policy Tools: Experiences in Malawi

Integrated policy models can display the multisectoral consequences of single-sector decisions. The THRESHOLD 21 model, for example, has disaggregated education by gender and can test the consequences of valuing – or not valuing – education for girls. When girls are deprived of education, the model shows a reduction in gross domestic product (GDP) and agricultural production, hampering long-term growth prospects. In addition, health care deteriorates, causing many adverse consequences, including reduced life expectancy for men.

In 1998, the Government of Malawi finished its *Vision 2020 Report*, setting out the country's official sustainable development goals for 2020. Three strategies were proposed as possible means for reaching these goals: Poverty Alleviation, Social Development, and Long-Term Growth and Development. After developing the strategies, the Government sought an effective way to evaluate the relative merit of each.

The three strategies initially proposed by the Government were supplemented by a fourth “combined” strategy which incorporated elements of each of the others. The participants in the modelling exercise then developed a historical model of Malawi's development, from which the team was able to project a baseline scenario to 2050. It predicts development impacts based on the nation's historical and current planning actions. Each of the four alternative strategies was also projected to 2050 and compared to the baseline scenario and to one another.

Results Achieved

While all proposed strategies projected better results than the baseline scenario, the model revealed difficulties in sustainability with each of the three initial alternatives. The combined strategy was the best option for long-term sustainable development. In addition to the direct decision support, the Government of Malawi gained the use of a powerful tool for evaluating development planning strategies.

Lessons Learned

- Cooperation among Governments, international partners and society can start from a multisectoral policy analysis. This is crucial in evaluating long-term development alternatives and in making sustainable decisions;
- To make informed policy decisions requires a computer application to integrate and interrelate the many inputs and outputs of all sectors; and
- Computer modelling is an effective tool for direct and practical use of the outputs from Common Country Assessments (CCAs) for national policy and planning as well as United Nations Development Assistance Frameworks (UNDAFs).

Some participants remarked that models offered promising possibilities for strengthening the Common Country Assessment (CCA) and the UNDAF process and for building understanding and constructive dialogue throughout the development community.

Macrolevel models facilitate decision-making on policy and dialogue between the private sector and policy makers, and between Governments and NGOs. Decisions made with the help of macro models need to be linked to sector-specific planning and management support. These tools should help guide decision-making on the location, size or scope of projects or programmes. They should support the analyses and decision-making related to the composition and distribution of sectoral output. These tools can assist policy makers in assessing the consequences of alternative activities and interventions, e.g., reproductive health programmes, small-scale decentralized irrigation systems and large-scale irrigation works, and community-based biogas systems vs. charcoal production. They should also help identify issues related to distributional equity (e.g., land tenure rights, water, forest and range-land use entitlements) and land-use patterns. These models can also simulate the effects of not taking into account non-economic factors in planning, such as investing in girls' education. They can highlight gaps in decision-making over time.

B. Subnational Planning Tools: Spatial and Eco-regional Planning

New tools are being developed for subnational planning, including GIS, agro-ecological mapping and eco-regional planning. These planning efforts can take place in traditional administrative units or in planning units designed to address specific characteristics of the ecosystem – such as watersheds, forests, mountain ecosystems or coastal zones – as the term “eco-regional planning” suggests. A number of participants noted that subnational planning forms a necessary link between, and a complement to, planning at the national and local levels. Although not covered explicitly in the Workshop agenda, the topic of area development planning between the national and the local levels did arise during discussions.

Increasingly, programmes for nature conservation and ecosystem management seek to meet basic human needs. Similarly, rural and urban development programmes increasingly include environmental management considerations in their design. There is, however, only limited evidence at the regional level of links among population programmes (including those for improving reproductive and public health), gender-specific programmes, environmental management and development planning. Some international NGOs, such as World Neighbors, World Wide Fund for Nature and CARE, have supported integrated or coordinated area-wide programmes in developing countries, involving components of social development, population services and environmental management. The possibility of introducing population-related elements into regional conservation and development programmes has yet to be systematically explored.

Among the useful tools for integrating considerations of PPE linkages into spatial or regional development planning are the following: GIS; overlay mapping and dynamic scenario analysis; regional environmental and social impact assessments; ecosystem-based carrying-capacity assessments; ecological risk analysis; indicators of irreversible damage to ecosystems; specification of environmental thresholds, criteria and relevance tests; land classification; agro-ecological zoning; land-use planning; and specification of protected areas. An example of how

GIS may begin to map PPE linkages is provided by the UNEP/Consultative Group on International Agricultural Research (CGIAR) pilot study on Mapping Indicators of Poverty in West Africa, which, *inter alia*, seeks to examine the relationship between the health of rural populations and land degradation.

C. Local Planning Tools: Participatory Action Research

Several participants working at the grass-roots level presented PAR tools designed to help communities assess their natural resource management, their population dynamics, the health status of the population and gender-related aspects of all of the above. Many of these tools and techniques can be found in the joint IUCN-UNFPA publication *Our People, Our Resources: Supporting Rural Communities in Participatory Action Research on Population Dynamics and the Local Environment* (Barton *et al.* 1997), a handbook for participatory assessment and planning on population-environment dynamics at the community level. Box 4 contains a description of village-level discussions on PPE linkages by the members of Pallisa District Community Development Trust (PACODET) in Uganda, a community-based organization that was highlighted in *Our People, Our Resources*.

Presenters described a variety of tools and approaches for assessing interactions at the interface of human societies and natural resources, including transect walks, historical mapping, the envisaging of future land uses, personal histories, participatory censuses, health surveys and gender-based focus groups. They noted that although PAR is often seen as a tool for collecting qualitative data, it is also excellent for obtaining quantitative data on various issues. Triangulation of data sources can help to ensure data reliability.

A representative from an Indian NGO, Development Alternatives, presented a set of tools devised as part of a multicountry effort to develop community-based techniques for assessing human and ecosystem well-being (IUCN International Assessment Team 1997). Among the techniques tested in the field setting was the pyramid of responsibility, in which communities list issues that depend entirely upon efforts undertaken by outsiders, activities in which they could collaborate with outside agencies and, finally, activities that could be undertaken entirely by the community itself. In the context of rural India where, due to the many government agencies involved in development activities, identifying what the community can do for itself can be empowering.

The Guatemalan group Asociación para la Recuperación, Manejo y Saneamiento Ambiental (ARMSA) has adapted several participatory methodologies in its work in the water and sanitation sector with communities in the Petén. The focus is on problem definition, prioritization, identification of actions and definition of evaluation indicators. The question arose as to whether PAR might lead communities to make overambitious “wish lists” of activities or to identify activities unrelated to local sustainability (such as road construction). One response was that facilitators can make it clear what kinds of activities they are willing to work on and what kinds of activities would require the help of other NGOs or agencies.

Box 4. Population-Poverty-Environment Linkages at the Front Line: Notes from a

Community Discussion

On an October afternoon, male and female small group leaders of Kapuwai village in eastern Uganda gathered at the Pallisa District Community Development Trust's (PACODET) health centre and grain storage unit. They met to discuss issues crucial to their future, including the inadequacy of land holdings for current and future generations, food security, environmental protection, and – perhaps most important to the many couples present – gender relations, family planning and maternal health.

Using play acting, community members illustrated issues that touched all of them, such as a fight between two brothers over a piece of land; a man draining and cultivating a productive wetland owing to a lack of food; and an insensitive husband expecting his wife, pregnant and nursing their infant child, to continue her heavy workload of cooking, cleaning and cultivating. Each vignette provided fertile material for discussions among men and women of all ages on the pressures they were experiencing in terms of poverty and food insecurity, and the need for new practices such as birth-spacing, family size limitation and greater sharing of household tasks by men. After animated discussions, trained local facilitators brought out important points, provided additional information and asked the group what actions were required.

Such meetings take place every month in the village of Kapuwai. Gradually, over the past five years of PACODET's activities, attitudes and practices are changing. Important social issues such as alcoholism, teen pregnancy and responsible parenthood are addressed, and action programmes are designed. As a result of a participatory action research exercise in 1994, the community constructed a health clinic. Subsequently, PACODET established a grain storage depot for local food security during times of famine and a small shop for veterinary supplies. In addition to its principal activities in the health and agricultural spheres, the Trust has been active in the environmental arena. In the last two years, it has promoted agro-forestry and encouraged the sustainable use of forests and wetlands to preserve the natural functions of these important ecosystems. Taken together, the activities of this community-based organization have helped to restore hope in an area once devastated by war, disease and famine.

Contributed by Alex de Sherbinin, IUCN

The presenter from IUCN Pakistan emphasized the “neo-technical” role of the PAR facilitator, who brings new technical information to bear on local issues and problems. He said the business of grass-roots NGOs is to enable local communities to undertake their own assessments, prioritization and planning. Categorizing local problems, using categories that make sense to local communities, is one approach to developing analytical skills. A few presenters and participants indicated that sometimes administrators assume that tools and techniques are enough. In practice, the positive attitudes of facilitators towards communities and the creation of an open atmosphere for the sharing of ideas are probably more important to the success of PAR. Ultimately, the goal

is for the community to identify and develop appropriate solutions to its own problems. All these tools can enhance attempts to break the vicious PPE circle and bring about needed changes.

IV. Recommended Actions

Recommendations were developed during several working group sessions. They are categorized below by international and national/local efforts and then subclassified by steps in the management cycle: planning, implementing/monitoring, and research/ development and evaluation.

A. International Level

1. Planning

Coordinating Assistance

The many international demands for action plans and other obligations, if uncoordinated at a policy level, could constitute a burden to the planning and management capacity of many developing countries. Furthermore, programmatic responses to *Agenda 21* and the ICPD Programme of Action may become routine, with marginal continuing impact unless they are accompanied by further innovative and financial inputs.

Action National-level bodies or commissions need to coordinate, at the policy level, the implementation of social and environmental agreements. Effective national policy coordination will help ensure that countries adopt policies and programme agendas that are appropriate to their specific situations and objectives. In addition, greater use of new tools (e.g., computer modelling) is needed to improve dialogue and understanding among the key actors and institutions implementing *Agenda 21* and the ICPD Programme of Action, and to develop innovative approaches for addressing PPE linkages.

Recognizing Unsustainable Global Trends

The highest population increases and most fragile environmental conditions are occurring in poor countries, which usually have no financial resource margins and only limited political and managerial resources. At the same time, they are subjected to pressures of globalization and imperfect market conditions. These external influences make national decision-making increasingly difficult in solving PPE crises. Although this issue was beyond the scope of this three-day Workshop, it formed the backdrop of many of the discussions, particularly in the light of recent financial crises in Asia.

Action In the planning process, it is important to recognize that economic trends and relations at global levels influence and sometimes hinder national and local-level actions. Planning needs to reflect a deliberate effort to reconcile economic, social and environmental objectives at national, subnational and local levels and to recognize that

the required environmental and human development interventions should be viable in the long term.

2. Implementing/Monitoring

Financial Resources

The reallocation of funds in international aid flows and domestic budgets (e.g., away from the military and towards the social sectors) and the transfers of technology agreed to as part of the global consensus have not materialized, undermining the institutional response to these agreements. Similarly, the commitments to partnership for the implementation of the recommendations of global conferences have not been systematically carried out. Structural adjustment programmes implemented in many developing countries have significantly curtailed spending on social services and environmental activities.

Action Donors and, increasingly, the private sector need to renew their commitments to implementing the global consensus. Debt forgiveness and debt-for-nature swaps are mechanisms for lessening the debt burden on developing countries, while freeing funds to address PPE linkages. As regional economic integration institutions, e.g., the Association of South-East Asian Nations (ASEAN), the Southern Cone Common Market (MERCOSUR) and the North American Free Trade Agreement (NAFTA), grow in significance, member countries should influence one another towards adopting sustainable development criteria for economic decision-making and encourage multilateral efforts to mobilize and direct resources to meet basic social needs.

3. Research/Development and Evaluation

PPE Hotspots

With current knowledge of PPE dynamics, actual and potential PPE hotspots can be identified. Although no universal agreement exists concerning the criteria for identifying these critical areas, it should be promising to develop a menu. One effort in this direction is the Index of Human Insecurity being developed by the Global Environmental Change and Human Security Project of the International Human Dimensions Programme (IHDP).

Action International organizations should develop criteria for what constitutes a PPE hotspot. They should also develop a procedure for the application of relevant criteria suitable for local situations and help quantify the thresholds for each criterion. Such criteria and procedures would assist Governments in prioritizing action programmes at the country level. International organizations could also identify a variety of programmes and actions to deal with diverse types of problems in these hotspots. These solutions should draw heavily on a review of local, national and regional initiatives. International organizations should provide guidance and assist countries

in selecting the policy, strategy and programme actions to decide priorities for current and potential hotspot areas.

Macro-Policy Guidelines

Because PPE linkages are specific to certain locations, researchers and project managers have not yet been able to translate their findings into generalized macro-policy guidelines. There is a need to move from individual project approaches to a programmatic approach for resolving issues and addressing linkages.

Action International organizations and Governments should continue to provide and strengthen support to create macro-policy frameworks for meeting human needs and promoting environmental sustainability, and should increase the application of innovations to strengthen appropriate technology and knowledge. Local projects and programmes can continue to demonstrate innovative ways of addressing the interactions among population dynamics, poverty and the environment, and the lessons can be fed into future policy development.

Tools and Methodologies

Countries and communities need to learn from one another's experiences in addressing PPE linkages at local and provincial levels.

Action International organizations should provide methodologies, information and guidance on practical tools to address PPE linkages at local and provincial levels.

B. National/Local Level

1. Planning

Women's Role in Integrated Programming

To address PPE linkages effectively in practice, the issue of equity – social equity and income distribution – has to be addressed directly, including women's social and economic status, and access of the poor to livelihood-related resources.

Action Women are key health, education, economic and resource managers. They, and their children, are also those most likely to experience disproportionate effects of poverty and environmental stresses. Integrated programming should ensure that women are empowered to play the requisite managerial and decision-making roles. One entry point for linking population and the environment interventions is via coordinated and gender-sensitive environmental activities (e.g., water supply/sanitation or natural resource management) and reproductive health initiatives.

Sectoral vs. Multisectoral Planning Processes and Policies

National development assessments, wherever functioning, are now more comprehensive and no longer look only at the economy but also examine population, health and the environment. Nevertheless, sector-specific policies and procedures remain the norm in many countries. Traditional ministries and departments have built large organizations and programmes and have strong political constituencies. Because zero-base budgeting has rarely been realized, ministries and organizations which have been in operation for many years are allocated most of the resources. As was the case with early population efforts, a large part of the funding for new initiatives, such as PPE, comes from international donors. In the meantime, much of the traditional sectoral planning, policy-making and financial allocations continues with little change.

Action Four central agencies of government – planning, finance, health and environment – may take the leadership in multisectoral PPE policy and programme planning. Policies need to consistently reinforce and encourage multisectoral action. The coordinating office needs to plan and ensure that institutional bridges are created and active among sectors. Sector-based branches of government, especially the “nation-building” sectors (e.g., ministries of health, environment, agriculture, education, industry and labour), need to work together horizontally. The public sector needs to work with international, national and local NGOs, the private sector and experts from various fields in order to develop multisectoral PPE solutions.

Participation and Partnerships

Genuine participation must begin at the planning stage among communities, local government, the private sector, national government and NGOs. Without this genuine involvement from the outset, the prospects for inter-organizational and interpersonal commitment are limited. Effective partnerships are unlikely to be formed as there are often few rewards for inter-organizational action. In fact, there are usually disincentives.

Action Policy-making and policy implementation have to involve key stakeholders to reconcile diverse interests and global, national and regional objectives with local needs. While much discussed, this practice has only recently begun, and it runs counter to a long tradition of unilateral or top-down decision-making. At the local level, it is important to involve teachers, village elders, community leaders, religious and other opinion leaders as well as government extension workers and public health officials.

2. Implementing/Monitoring

Strengthening Local Initiatives and Institutions

PPE efforts have thus far tended to consist of policies and programme designs at the national level combined with a range of semi-coordinated or uncoordinated local initiatives. The middle layer of government and civil society organizations, including state or provincial governments and NGOs that have larger than local structures, has been less involved in PPE efforts. Without their participation, national programmes will be unevenly implemented and poorly sustained. This does not suggest that programmes should be monolithic or bureaucratic. Rather, these programmes need total vertical and horizontal support. The middle-level decision makers constitute a key decision-making level. They are the gatekeepers where the vertical and the horizontal intersect, particularly in the public sector. Coordination and cross-cutting monitoring is the answer to implementing successful multisectoral programmes. Only organizational units and the people who manage them in this “middle ground” can do this.

Action Governments and international organizations need to provide managers with multisectoral planning tools and the requisite information support and training. There should also be a national policy and programme framework within which they can work with localities to plan and monitor specific programmes and actions. Reward or incentive systems should be created so that these managers initiate and maintain PPE programmes.

Flexibility and Local Management

Operational management has to be as close to the programme design as possible. Because this is far from a refined science, policies and programme frameworks must be designed with flexibility for local managers. Direct access to and management of natural resources by the community has proved to be an excellent way to reduce poverty and ensure conservation and food security. In relation to this, traditional knowledge systems have played a vital role in promoting the sustainable use of natural resources, meeting the basic needs of local populations and providing ecological and public health services.

Action There is a need for greater development of collaborative management arrangements in which communities share the responsibility and authority for managing natural resources with government agencies and other stakeholders. The appropriate use of traditional knowledge systems, when blended with scientific understanding and modern technology, can yield excellent results.

Education and Communication

Education and communication are essential for any initiative to generate major social and economic change at local, national or international levels. To be successful, as efforts in the

population field have indicated over four decades of work, these activities must be creative, varied and sustained over many years.

Action There is a need to communicate the causes and probable consequences of PPE linkages with donor and recipient country audiences. There is a need to educate and advocate among politicians in all countries. National action plans and area-specific mapping and impact statements are powerful tools for institutional changes, and modelling exercises have become more sophisticated. There is a need to strengthen the network of NGOs involved in implementing the global consensus at the national and subnational levels.

3. Research/Development and Evaluation

Research Modality

Any further research on PPE linkages in specific locations needs to be participatory and transparent.

Action Participatory action research with local communities can produce workable solutions to adverse PPE interactions. Stakeholder and gender analysis can address the distribution of costs and benefits of proposed interventions as well as increase accountability and transparency. Depending on the local context, action plans may emphasize responses in respect of one aspect of the linkage more than another (e.g., reproductive health, primary health care, income generation or environmental management). International organizations can learn much by supporting community-based organizations and NGOs with effective integrated programmes addressing livelihood security, environmental management, women's empowerment and reproductive health.

Annex 1: Workshop Agenda

International Workshop on Population-Poverty-Environment Linkages IUCN Headquarters, Rue Mauverney 28, Gland, Switzerland 23-25 September 1998

The aims of this workshop are to:

- identify lessons learned from case studies, research and activities on population-poverty-environment linkages at national and local levels, and undertake an approximate mapping of population-poverty-environment “hotspots” (i.e., specific parts of the world where poverty and environmental degradation have reached critical thresholds and where population pressures are important contributing factors);
- identify tools and approaches for integrated assessment and planning at national and local levels, that take into account the linkages among population, poverty, and the environment;
- identify future actions to assist countries in achieving reproductive health, poverty alleviation, and environmental sustainable goals contained in the International Conference on Population and Development Programme of Action, Agenda 21 and other global agreements.

Day 1 (Wednesday, 23 September)

8:30-9:00 **Registration**

I. INTRODUCTION

9:00-9:15 **Welcome Remarks**
Mr. David McDowell, Director General, IUCN

9:15-9:30 **Presentation of agenda and objectives**
Ms. Vivien Ponniah, UNFPA

II. LESSONS LEARNED FROM RESEARCH AND OPERATIONS RELATING TO PPE LINKAGES

9:30-11:00 Mr. Alex de Sherbinin, IUCN – Overview and case of Haiti
Dr. Taghi Farvar, CENESTA, Centre for Sustainable Development –
Sudan & Bangladesh
Mr. Ashok Kumar, Development Alternatives – Case of Tumkur District,
India

11:00-11:15 **Coffee break**

**II. LESSONS LEARNED FROM RESEARCH AND OPERATIONS RELATING TO PPE LINKAGES
(CONTINUED)**

11:15-12:30 Dr. A.M. Abane, University of Cape Coast, Ghana – Western Ghana
Ing. César Barrientos, ARMSA – Guatemala City and the Petén

(Morning Chair: Prof. Gayl Ness, Prof. Emeritus, University of Michigan)

12:30-14:00 Lunch

**II. LESSONS LEARNED FROM RESEARCH AND OPERATIONS RELATING TO PPE LINKAGES
(CONTINUED)**

14:00-15:30 Working groups for the identification of lessons learned, policy responses, and constraints and challenges

Group 1:	Facilitator:	Mr. Roger-Mark De Souza
	Rapporteur:	Dr. Harry Chabwela
Group 2:	Facilitator:	Ms. Lorena Aguilar
	Rapporteur:	Dr. Gerald Barney
Group 3:	Facilitator:	Mr. Aijaz Nizamani
	Rapporteur:	Ms. Rachel Kyte

15:30-15:45 Coffee break

15:45-16:30 Reporting to plenary

16:30-17:00 STATEMENT

Kerstin Trone, Deputy Executive Director (Programme), UNFPA

(Afternoon Chair: Alex de Sherbinin, IUCN)

17:00-18:00 Welcome reception

Day 2 (Thursday, 24 September)

9:00-9:15 Summary of previous day's discussions

Dr. Harry Chabwela, Environment and Population Centre, Zambia

III. TOOLS AND PRACTICES FOR UNDERSTANDING AND ADDRESSING PPE LINKAGES

9:15-11:00 **Common Country Assessments (CCAs) and the United Nations Development Assistance Framework (UNDAF): Presentation of integrated multisectoral planning models**
Prof. Gayl Ness, PEDP - Overview of national-level planning tools
Dr. Wolfgang Lutz, IIASA - Population-Development-Environment model (examples: Mauritius and Southern Africa)
Dr. Gerald Barney, Millennium Institute - Threshold 21 (example: Malawi)

11:00-11:15 **Coffee break**

11:15-12:00 **Discussion**
Plenary on experiences and problems/constraints

(Morning Chair: Ms. Vivien Ponniah, UNFPA)

12:00-13:30 **Lunch**

III. TOOLS AND PRACTICES FOR UNDERSTANDING AND ADDRESSING PPE LINKAGES (CONTINUED)

13:30-15:00 **Working groups to assess PPE hotspots: Participatory mapping of areas experiencing environmental stress, population pressures, and poverty**
Africa: Chair: Mr. Sagar Dramé
 Rapporteur: Dr. A.M. Abane, Emmanuel Guveya
Lat. America: Chair: Dr. César Barrientos
 Rapporteur: Mr Roger-Mark DeSouza
Asia: Chair: Mr. Alain Marcoux
 Rapporteur: Mr. Ghaith Fariz, Dr. Taghi Farvar

15:00-15:15 **Coffee break**

15:15-16:00 **Presentation of maps, and report back to plenary**

III. TOOLS AND PRACTICES FOR UNDERSTANDING AND ADDRESSING PPE LINKAGES (CONTINUED)

16:00-17:30 Presentation of participatory assessment and planning techniques at the local level, and linking to the national level

Mr. Alex de Sherbinin, IUCN – Tools from *Our People, Our Resources*

Mr. Ashok Kumar, Development Alternatives – Systems assessment tools

Dr. César Barrientos, ARMSA - Methods used by ARMSA

Mr. Aijaz Nizamani, IUCN-Pakistan - Methods used in Pakistan

(Afternoon Chair: Licenciada Zury Rios Montt, Member of Congress, Guatemala)

18:30-20:00 Dinner

Day 3 (Friday, 25 September)

IV. FUTURE ACTIONS

9:00-11:30 Facilitated working groups:

- A. Harmonizing implementation of ICPD Programme of Action, Agenda 21, and environmental conventions (CBD, FCCC, CCD, Ramsar, and CITES) and other global consensuses
Facilitator: Mr. Edwin P.D. Barnes
Rapporteur: Mr. Sagar Dramé
- B. Gender aspects of integrated action to address PPE linkages
Facilitator: Ms. Rachel Kyte
Rapporteurs: Ms. Lorena Aguilar and Dr. Taghi Farvar
- C. Agenda for future applied and operational research on PPE linkages
Facilitator: Mr. Ghaith Fariz
Rapporteur: Dr. A.M. Abane

11:30-12:30 Reporting back to plenary

(Morning Chair: Arnfinn Jorgensen-Dahl, United Nations Staff College)

12:30-14:00 Lunch

14:00-14:30 Report of working group on major conclusions/recommendations and discussion

V. WRAP UP AND CLOSING

14:30-15:00 **Concluding statements by:**
Ms. Vivien Ponniah, UNFPA
Mr. Uttam Dabholkar, UNEP
Mr. George Greene, IUCN
Mr. Abdelhadi Bennis, ASMAPE

(Afternoon Chair: Mr. Uttam Dabholkar, UNEP)

Annex 2. Participants

International Workshop on Population, Poverty, and Environment Linkages Gland, Switzerland, 23-25 September 1998

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Annex 3. Statement by Kerstin Trone Deputy Executive Director (Programme), UNFPA

UNFPA is pleased to be a partner with United Nations Environment Programme (UNEP) and The World Conservation Union (IUCN) in organizing this workshop, and we extend a warm welcome to all of the participants. We are confident that this will lead to strengthened collaboration to ensure that population, environmental and poverty eradication factors are integrated into sustainable development policies and programmes.

This workshop will contribute to achieving the goals of the United Nations Conference on Environment and Development (UNCED) and to those of the Programme of Action of the International Conference on Population and Development (ICPD).

The unprecedented consensus at the ICPD in 1994 squarely underscored the complex interrelationships between population, sustained economic growth, poverty and the environment. The Programme of Action stressed the need for integrating population and environment issues in planning and decision-making and for modifying unsustainable consumption and production patterns in order to foster sustainable resource use and prevent environmental degradation. It also called for the implementation of policies to address the ecological implications of population dynamics.

The Programme of Action also specified urgent measures to address human rights issues and enhance the full participation of all relevant groups, especially women, in population and environmental decision-making. Investments to provide choices and create opportunities for change for the most vulnerable groups, including women – the key health, education, economic and resource managers – will bring about a more sustainable environment.

Both Agenda 21 and the ICPD Programme of Action underscore the important role of women as custodians of the environment. Thus, we must ask ourselves why there are still barriers preventing women's effective participation in environmental management.

I hope this Workshop will address this question and identify practical steps for remedying this situation. The ICPD Programme of Action emphasized the integration of population concerns into all policies and programmes for sustainable development. It urged that "... at the international, regional, national and local levels, population issues should be integrated into the formulation, implementation, monitoring and evaluation of all policies and programmes relating to sustainable development" (Paragraph 3.5).

The Programme of Action also called on Governments to "...establish the requisite internal institutional mechanisms and enabling environment, at all levels of society, to ensure that population factors are appropriately addressed within the decision-making and administrative processes of all relevant government agencies responsible for economic, environmental and social policies and programmes" (Paragraph 3.7).

Key to implementing the goals of ICPD, Agenda 21 and the United Nations Decade for the Eradication of Poverty at the country level will be greater coordination and collaboration in providing development assistance. This assistance should take into account the complex relationships within and across sectors, and the varying social, economic, environmental and cultural, political and legal dimensions. Additionally the policy planner should be provided with the costed options to assist decision-making.

Some practical tools and techniques already exist for operationalizing programmes addressing population and environmental concerns. This workshop could perhaps sharpen and refine these tools and suggest new, practical techniques that would promote integrated programmes dealing with population, environment and poverty eradication.

Tools and frameworks are important, but the institutional bridges to be built between specializations, specialized branches of government or non-governmental and international, national and other organizations, networks, and individual experts are equally important.

We know that if we work together in cost-effective ways, development assistance can make a difference. What is needed are resources reflecting the commitment of Governments, partners and private sectors. We must intensify our efforts to mobilize the needed resources, from both public and private sectors.

I would like now to take this opportunity to share with you UNFPA's *1998 State of World Population* report on the theme: The New Generations. The Report focused on the special needs of the age group 15-24 years, underscoring that the world is now witnessing the largest number of young people ever. The Report also pointed out the significant increase in the number of persons above age 65, both in absolute terms as well as a proportion of the population. Particularly notable is the increase in the number of persons age 80 and above.

By mid-1999, world population will pass the 6 billion mark, twice that of 1960. It is incumbent on all of us to see that the world of 6 billion will offer each and every woman and man choices and opportunities to realize one's full potential. It should be a world where the human rights of every one, including reproductive rights, the right to a world without poverty, the right to development and to a healthy environment, are respected and realized.

Due to a number of factors, including in large part successful population policies and programmes, global population growth is slowing down. However, because of past high fertility, world population will continue to grow by over 80 million each year for at least another decade. World population estimates point to a level of over 9 billion, by the medium forecast, by 2050. Exactly how much population will grow depends greatly on the actions taken now and in the next decades to enable couples and individuals to exercise their right to reproductive choice. We have critical work ahead of us.

Before closing, I would like to point out that next year will be the fifth anniversary of ICPD. To mark this event UNFPA is hosting an International Forum at The Hague in February and

there will be a Special Session of the General Assembly, 30 June to 2 July. Discussions at the Forum and at the Special Session will draw on the experiences to date, on the recommendations of various expert group meetings and discussions, to provide operational guidance to successfully achieve the goals of the ICPD, including universal access to reproductive health services; education for all, particularly, closing the gender gap in education; and reducing infant, child and maternal mortality.

In concluding my remarks today, I would like to thank IUCN for its significant efforts in organizing and hosting this Workshop. I would also like to thank UNEP for its role in this important activity and we trust that this joint endeavour sets the tone for enhanced collaboration among our three organizations. Finally, I would like to express special thanks to the Government of Norway for its support which has made this meeting possible.

I wish you a most successful meeting. I look forward to receiving your report. The recommendations of this Workshop will be most useful to UNFPA in its operational work and will be an important input into the ICPD +5 process.

Thank you.

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