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Addressing Population, Environmental, and Agricultural Linkages

The World Commission on Environment and Development defines sustainable development as the ability to meet the needs of the present generation without compromising the needs of future generations, which depends on proper management of the linked population, environmental, and developmental factors. In the African context, the interrelationships among population growth rates, the state of the environment, and agricultural productivity are at the root of the sustainability issue.

Overview

Because of inadequate application of science and technology to lowering population growth rates, increasing and diversifying the balance among population growth, environmental and natural resources, and food security is delicate. In the long run, greater application of science and technology is critical to enhancing and diversifying the production of goods and services, overcoming environmental constraints, enhancing the sustainability of development, and improving the quality of life in Africa.

In the past three decades, the majority of African countries have had high population growth rates that have not been matched by adequate food availability in per capita terms. Africa's population is currently growing at an average annual rate of 2.8 per cent. More than 50 per cent of the

total population is under 15 years old. The problem of a rapidly growing, young population has been compounded by swift depletion of forests, fuel supplies, and soil quality. The negative correlation that exists between high population growth rates on the one hand, and productive land and food per capita on the other, is vividly demonstrated by African data. The population growth rate, which far exceeds that of per capita food production in most countries, has led to rapid deterioration of the environment and undermined productivity. More than three-quarters of sub-Saharan African countries produce less food per capita than they did in the 1980s.

These issues were highlighted at a number of international forums: the UN Conference on the Environment and Development (UNCED), 1992; the Third African Population Conference (Dakar/Ngor), 1992; the International Conference on Popu-

lation and Development (ICPD), 1994; the World Food Summit, 1995; and Habitat II, 1996. The central message from these forums is that public policy should come to grips with the mutually reinforcing forces of high population growth, environmental degradation, low agricultural productivity, poor economic growth, and poverty—the key elements in defining a sustainable development strategy. In the Dakar/Ngor Declaration (DND), African governments set quantitative demographic targets to be reached by the year 2000 and by the end of the first decade of the new millennium, including goals for reducing annual population growth and mortality rates and increasing life expectancy. These goals, which were reaffirmed by the ICPD in its programme of action (ICPD-PA), are monitored by ECA in partnership with the United Nations Population Fund (UNFPA).

The Challenge

Between 1986 and 1997, while Africa's population grew by more than 35 per cent, food production per capita declined by about 8 per cent, and agricultural land per capita decreased by about 25 per cent. Reversal of these trends constitutes a survival challenge. Sustaining development in Africa requires (i) harmonization of population growth with the level of food production; (ii) enduring increases in agricultural productivity; (iii) better stewardship of the environment; (iv) better and more equitable use of water; and (v) utilization of science and technology as the foundation for productivity increases diversification of employment and income opportunities; and (vi) enhancement of the competitiveness of the economy.

Attaining slower and stable rates of population growth largely depends on policy actions and programmes based on proper understanding of the factors underlying the transition from high to low population growth rates, from low productivity to high productivity agriculture, and from environmental degradation to better stewardship of the environment. African States need to understand better the elements of these transitions in order to mainstream and integrate population, environmental, and agricultural concerns into national development plans and poverty-alleviation



Curt Carnemark/World Bank

Sustainable development requires that population, environment, and food security concerns are seen as interdependent.

frameworks. Because of the complexity of the social, cultural, economic, technological, and political factors involved in the design and successful implementation of a sustainable development strategy, Africa's development partners have a key role in assisting countries to meet this challenge.

The ECA Response

The population, environment, agriculture, and food security nexus is a new dimension of ECA programmes, which was born from the restructuring of the Commission and the refocusing of its programmes in 1996. Through intensive consultations with development partners and eminent African policy makers and technical specialists, a programme was identified based on the Commission's regional comparative advantage, including its convening power, which is enshrined in the intergovernmental machinery of the Commission. The Intergovernmental Committee on Sustainable Development is part of that machinery. It serves as a forum of experts that provides advice to ECA and ensures the focus and relevance of the Commission's programme to Member States' needs in the interlinked areas of food security, population, and environment. The programme's

focus was recently fine-tuned and endorsed by a high-level expert advisory group meeting on agriculture and environment (see box 6). Broadly, ECA helps Member States to promote food security and sustainable development by a set of activities centred on three related sub-thematic tasks:

- Planning and implementing activities to raise policy makers' awareness of the urgency of food, population, and environmental concerns (the nexus issues) in development planning, while offering Member States feasible solutions drawn from best practices within Africa and around the world;
- Encouraging member countries to develop and take full advantage of their abilities to foster and utilize science and technology in addressing the nexus issues; and
- Providing policy analysis support and dissemination services through workshops, training seminars, information exchange, and technical advisory services to enhance understanding and management of the complex interactions between agricultural productivity, population, environment, technology, and food security.

ECA delivers its services through studies, advocacy, and advisory services. ECA has conducted a number of studies on food security and sustainable development issues, including the recently published *Report on the Coordination and Harmonization of Food and Agriculture Policies, Strategies and Production in North Africa*, presented at a meeting of the intergovernmental committee of experts of the North African Subregional Development Centre (SRDC) in April 1997. Other studies and activities are ongoing or are planned in five areas. Completed pieces and outlines of ongoing or planned activities will be presented to the session of the Intergovernmental Committee on Sustainable Development, which will take place in the first quarter of 1999. The five areas are as follows.

Promoting the Transition to Slower Population Growth. Understanding the factors that underlie transitions from high population growth to low growth rates, which may differ from society to society, and which may differ at different points in the transition process, enables governments to better target policies and programmes to reduce and stabilize population growth and to monitor progress towards that goal—in line with the

Box 6. High-Level Expert Advisory Group Meeting on Agriculture and Environment

An Expert Group Meeting attended by senior policy makers and experts in the fields of population, agriculture, and the environment was held November 30–December 2, 1998, to further assist ECA in defining priorities and modalities for addressing issues of poor agricultural performance, environmental degradation, and Africa's slow development. The meeting reviewed ECA's issues paper on the subject, the current work programme, and its plans for 2000–2001. It also discussed how the integration of the nexus issues in development planning can be made more politically attractive, and how ECA and its partners can better facilitate government work on these issues.

Among its recommendations, the meeting called on ECA to focus on two areas: policy analysis support, and dissemination of relevant information on nexus issues. With respect to policy analysis support, it was recommended that ECA focus on translating generic policies into Africa-specific and country-customized

policies so that ECA becomes the focal point on the key policy issues in the region. In this regard, ECA needs to undertake a critical analysis of the key interlinkages, and collect and collate Africa-specific information and data. To effectively play its analytical role, ECA needs to build capacity, partnerships, and networks, and develop appropriate tools for making policy choices.

The division's Population, Environment, Development, and Agriculture (PEDA) Model was accepted by the meeting as a good starting tool for better understanding the interrelationships between population, agriculture, and the environment. It is capable of adequately demonstrating the impact of different policy options in relation to the goal of ensuring food security through alleviating poverty in the region.

An Advisory Board to ECA on population, agriculture, and environment issues and programme activities was created from among the experts who attended the meeting.

stipulations of the DND and ICPD. ECA activities, in partnership with UNFPA, are particularly designed to monitor, evaluate, and report on the implementation of DND and ICPD-PA targets; to strengthen information, education, communication (IEC); and to support policy analysis and advocacy for more effective interventions (see box 7).

Previous birth-control interventions in Africa did not prove very effective in reducing population growth rates in many countries. This was largely because reproductive choices are made in a complex framework that involves other key factors. The new orientation of ECA's analytical work

in the arena of population is to focus on the relationships among women's responsibilities for producing wage goods or earning income for the household, women's reproductive health, and their exercise of reproductive rights and choices. Understanding these relationships is essential to moving from traditional population-focused family planning interventions to more comprehensive sets of instruments, in line with the broader range of factors that influence women's reproductive choices. The more holistic treatment of women's productive and reproductive choices is key to advancing the DND and ICPD objectives. ECA, in

Box 7. Partnership with UNFPA in the Follow-up to ICPD-PA and DND

ECA has an active partnership with UNFPA through which activities of common interest developed by ECA in project form are financed by UNFPA and executed by ECA. The partnership activities are particularly designed to monitor, evaluate, and report on the implementation of the DND and ICPD-PA; to strengthen information, education, communication (IEC); and to support policy analysis and advocacy.

The Plan of Action of the International Conference on Population and Development (ICPD-PA), which took place in 1994, and the work of UNFPA and its partners in this field marked a turning point in population policy development as an integral part of overall national development planning by African countries. In a significant number of cases, awareness of the importance of the population and development nexus, especially among central policy makers, and recognition of the complex interrelationships among them, gender, and environment has grown considerably. In each country implementing ICPD-PA recommendations, attempts have been made to forge a national consensus on the policy actions and on the legal and institutional requirements needed to realize set goals. Follow-up is critical.

The Third Follow-up Committee (FUC3) on the Implementation of the DND and the ICPD-PA was held at ECA headquarters, Addis Ababa, Ethiopia, 23–25 September 1998. Representatives of 21 African countries and several regional, subregional, and international organizations attended the meeting. Its objective was to review and assess progress made by ECA Member States towards achieving the goals and targets of the aforementioned population frameworks and to identify

key steps in the way forward.

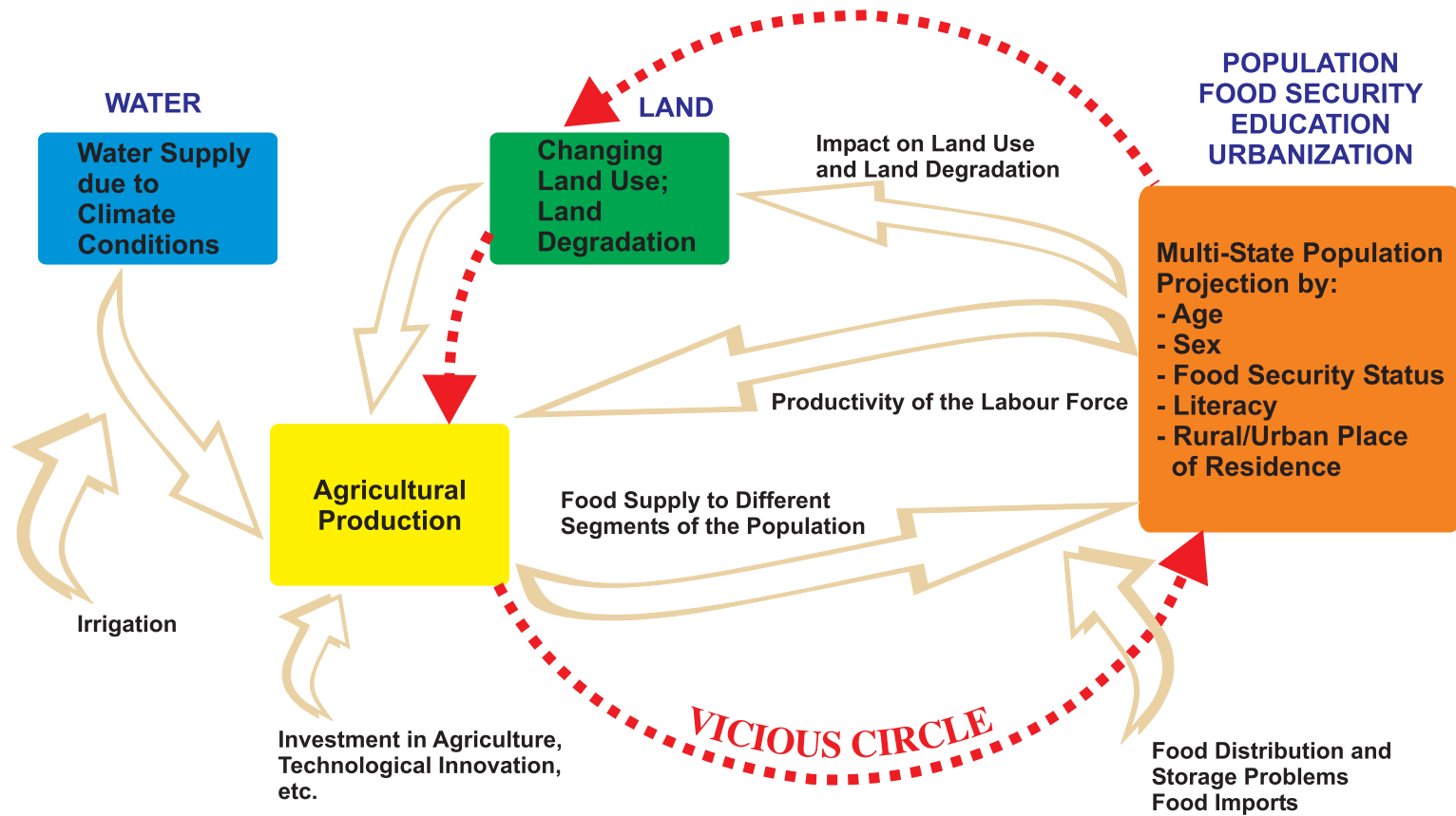
To this end, FUC3 considered the *Report on African Experience in the Implementation of the DND and the ICPD-PA* prepared by ECA in the context of the five-yearly review and assessment of the implementation of the two frameworks. The report was based mainly on a DND and ICPD-PA-specific country questionnaire that was sent to all African countries, and on information gathered during two field missions in 12 African countries.

The Report outlined the main achievements and constraints as well as the best practices derived from country experiences in the course of implementing the ICPD-PA. It also assessed the extent to which Member States have taken into account the ICPD-PA recommendations in the formulation and implementation of their National Population Programmes (NPPs). The Report's findings revealed, among other things, that lack of infrastructure, lack of trained personnel, and a serious resource shortfall remain serious problems in most Member States, even though several have tried to mobilize internal resources

Committee discussions focused on reproductive health and reproductive rights, family youths and adolescents, gender equality and equity, empowerment of women, male involvement, the role of NGOs and the private sector in programme implementation, population and development strategy, institutional mechanisms/subregional institutions, advocacy, and IEC strategy. For each area, achievements or best practices and constraints were presented and recommendations for the way forward were formulated.

Figure 7. The PEDAs Model

Linking Population, Food Security, and the Environment



VICIOUS CIRCLE

High population growth of the rural food-insecure population will contribute to degradation of marginal lands. This decreases agricultural production, which in turn increases the number of food-insecure persons.

partnership with UNFPA, monitors and reports on the implementation in Africa of the regional and global population conference recommendations.

Strengthening Analytical and Advocacy Tools for Action in Population, Environmental, and Agricultural Development.

Conceptually, while the population-environment-development linkages may be clear, what the policy outcomes of various interventions might be in a simultaneous framework is not so obvious. The objective of the ECA programme is to provide easy-to-understand, operationally useful analytical tools to accompany a proactive advocacy programme that helps policy makers better appreciate the kinds of development problems Africa faces today and is likely to face

“Devising an artful response to high population growth rates, extensive agricultural systems and a fragile environment—issues that should be treated as elements of an integrated nexus—might well constitute the most critical management challenge facing our continent. Managers of Africa’s development must act with a sense of urgency to address these interlinked issues.” K.Y. Amoako, from “Challenges for Managers of Africa’s Development—26th Tom Mboya Annual Lecture before the Kenya Institute of Management”, Nairobi, Kenya, 6 November 1996.

in future, depending on the population, environmental, and agricultural policies implemented. Developing, adapting, and applying the right analytical and policy advocacy tools in country-specific settings, and facilitating learning by policy makers from best-policy interventions and management practices elsewhere constitutes part of the assistance ECA is providing. Seminars, workshops, and demonstrations of the capability of selected analytical tools to answer policy questions are the main modalities for service delivery.

The ECA programme focuses on development and application of a Population, Environment, Development, and Agriculture (PEDA) simulation model, a user-friendly computer model for the analysis of the nexus interactions. It will demonstrate the impact of key emerging issues in specific countries, such as HIV/AIDS, gender mainstreaming, trade, and poverty. Applying interdisciplinary scientific analysis and projection, the model can shed light on key policy questions, such as what would happen to fertility rates if the education of 17-year-old girls was raised by, for instance, 80 per cent; what would be the impact of the rise in mortality rates due to HIV/AIDS;

what would be the impact of increased rural education on farming of marginal lands; and what impact would raising fertilizer use by, say 3 per cent, have on agricultural production and food security. Requests from Member States to make the PEDA tools available for application are very encouraging. Uganda’s request, which was one of the first, was answered with a demonstration in December 1998. The model prototype will be refined and customized first for three countries—Burkina Faso, Madagascar, and Zambia—followed by another 10 African countries. A user’s manual

will be prepared during this phase, including procedures for data collection and preparation of country-specific baseline data sets needed to run PEDA. Training of trainers (ECA staff—including

SRDCs and UNFPA Country Support Teams (CSTs), which provide on-demand technical expertise to Member States—and officials of ECA Member States) and the dissemination of the Model to other Member States will follow.

Promoting the Application of the System of Environmental Economic Accounting (SEEA) Tools in Africa.

Understanding the proper value of environmental and natural resources is critical to the sustainable utilization of non-renewable resources through proper management, since the value of such resources is not appropriately captured by market and price signals. Proper valuation of, and accounting for use of, environmental and natural resources are essential to establishing fiscal and regulatory modalities for their sustainable use. The ECA programme focuses on the promotion, popularization, and application of the System of Integrated Environmental and Economic Accounting (SEEA) in African countries through activities to:

- Increase professional understanding of SEEA techniques by African policy makers through training and other capacity-building instruments;

- Generate awareness and political support for SEEA as an environmental and natural resources management tool in Africa;
- Increase application of SEEA in drawing up national policy and management programmes; and
- Provide advisory services to Member States.

The first seminar towards these objectives was held at ECA in October 1998, with the assistance of several partners. More activities, including those focused at the country-level, are planned (see box 8).

Strengthening Africa's Capacity in Science and Technology (S&T) for Development.

Science and technology provide opportunities to address nexus and related development issues, such as raising agricultural productivity, improving competitiveness and opening up new opportunities for Africa in global markets, and combatting droughts, malnutrition, and controllable

diseases. ECA's programme has been developed in consultation with multilateral, bilateral and African institutions and experts (see box 9). Its activities, part of whose funding is provided principally by the Carnegie Corporation of New York, focus on:

- Building awareness of the critical role of S&T in development and helping Member States consider their S&T development options, to develop the policy and institutional capacities needed to strengthen and use S&T resources for socio-economic development—particularly in agriculture;
- Expanding existing networks and building databases to ease access by network members to S&T information and resources, and to enhance management and the impact of science and technology in Member States;
- Developing and disseminating best-practice and success cases from which lessons can be learned for faster socioeconomic development;

Box 8. Environmental and Natural Resources Accounting Seminar

The overall objective of the seminar, held 26–28 October 1998, was to support the efforts of African governments to identify, capture, and use resource rents for economic development effectively. It introduced the System of Integrated Environmental and Economic Accounting (SEEA) and its potential policy uses, and enabled the sharing of experiences of several countries that have experimented with natural resource accounting.

Thirty-four high-level participants representing 11 Member States, 4 UN organs (FAO, UNDP, UNEP, UNESCO and UNSD/DESA), 4 institutions (NESDA, OAU, SESRTC and WWF), and 4 ECA/SRDCs (Northern, Eastern, Central and Western Africa) attended the seminar.

The seminar gave an opportunity for new partnerships among ECA, WWF, ADANAC Pvt. Ltd. Zimbabwe, UNEP, and UNSD/DESA, which provided the seminar with speakers on the topics on the agenda. The Statistical, Economic, and Social Research and Training Centre for Islamic Countries funded participants from three African countries.

The seminar raised awareness among participants of the potential contributions that the SEEA as a planning tool can make to Africa's economic development, and called for support from African governments and the international community in promoting the application of the SEEA in Africa. It recommended the following activities as follow-up:

- Generate demand for and promote application of environmental and economic accounting;
- Build and strengthen capacity for implementing integrated environmental and economic accounting;
- Conduct focused, practical case studies based on the framework of the UN and SEEA;
- Develop and consolidate a database for implementing integrated environmental and economic accounting;
- Apply integrated environmental and economic accounting information to policy making; and
- Strengthen regional coordination.

Box 9. ECA Science and Technology Network (ESTNET)

At the first meeting of the ad hoc group of experts on science and technology for food security and sustainable development held in Addis Ababa, Ethiopia, 9–12 February 1998, a network on science and technology (ESTNET) was launched with participants in the meeting as initial members. The objective of the network is to foster communication and information exchange related to science and technology policies and management in Africa. A steering committee was constituted with representatives from five African subregions and two major subregional organizations.

The network will be accessible from the ECA Web

site and will host databases of best research results, examples of success and best practices in science and technology, useful science and technology documents, reports of conferences and other meetings, bibliographies, policy briefs, and relevant resolutions and protocols. The S&T Web pages will also list potential consultants and potential donors, and current and upcoming events in science and technology in Africa.

The network will eventually be used for interactive meetings on topics of interest in science and technology, for providing information and answers on request on science and technology policies, and for providing advice and assistance to Member States.

- Strengthening human resources skills for science and technology in areas necessary for effective and urgent impact on socioeconomic development through training and knowledge sharing;
- Carrying out studies and other preparatory activities aimed at identifying niches of competitive advantage;
- Facilitating the extension of the science and technology function within ECA and increasing ECA's capacity to serve Member States in the areas described above; and
- Refocusing science and technology advisory services to African States to emphasize the cross-cutting nature of S&T and to mainstream the S&T function in all country policies and programmes.

Improving the Quality and Availability of Information on Population, Environmental, and Agricultural Programmes. The ECA programme, which is a collaborative effort of the Commission's Food Security and Sustainable Development Division (FSSDD) and the Development Information Services Division (DISD), focuses on supporting data and information needed for the integrated approach to policy analysis of nexus issues. This includes the promotion of innovative population and environmental data assembly and dissemination systems and the strengthening of

information infrastructures. Designing systems and technical assistance to generate environmental data and other information for implementing the tasks described in this chapter are part of the core programmes of DISD—in collaboration with the relevant divisions.

In support of the ICPD and DND tasks, the African Network of Population Information Processing and Disseminating Centers will be created. National, subregional, and regional centres of population information and services will be strengthened to discharge the additional functions necessitated by the ICPD/DND activities. The centres would ensure timely dissemination of population information and best practices throughout the region. The network will periodically produce and disseminate two main publications. The *Population and Development in Africa: DND/ICPD Follow-up News* will be the main vehicle through which ECA will monitor trends and policies in population and development issues in Africa—as required by DND and ICPD-PA. The *Network News* will serve as the main link between the national, subregional, and regional institutions participating in the African Network of Population Information Processing and Disseminating Centres.

A regional freestanding institutional centre and electronic database with full virtual capabilities will be developed with support from partners as a source of data and information on food security

and sustainable development activities and programmes in Africa. The ongoing Greater Horn of Africa Initiative (GHAI) Inventory of Food Se-

curity Activities, which was started by USAID and transferred to ECA, will serve the nucleus and springboard for this longer-term task (see box 10).

Box 10. Inventory of Food Security Activities in the Greater Horn of Africa Region (GHAI)

The United States Department of Agriculture (USDA) is supporting an activity in FSSDD designed to provide development institutions and interested individuals with access to information on existing projects, activities, and analyses related to food security in the countries of the Greater Horn of Africa.

The activity maintains an interactive electronic tool comprising:

- A database on food security projects and activities in the Greater Horn countries
- Published analyses on food security
- Country-specific indicators on food security
- Maps of each of the 10 GHA countries
- Help on how to use the tool

The inventory will serve as a useful tool for African institutions and development administrators, NGOs, and multilateral institutions for enhancing their awareness of food security activities in the GHA. This will help minimize wasteful duplication of work and encourage cooperation and collaboration.

The Division will update the information in the inventory by gathering and entering available new information on activities, indicators, and analyses pertaining to food security in the GHA and other African countries. The information will then be disseminated to interested individuals and institutions in the GHA and elsewhere either directly, on demand, or through the Internet. Support for this phase of the activity is also expected from USDA.