TOWARDS ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT IN SUB-SAHARAN AFRICA

Building Blocks for AFRICA 2025

Environmental Education in Sub-Saharan Africa

Past Lessons and Future Directions

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Environment Group • Africa Region (AFTE1)
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Published by the Environment Group (AFTE1), Africa Region of the World Bank, the "Building Blocks" series is part of the continuing discussion inaugurated at the UNCED Conference in Rio on building environmentally sustainable development in Sub-Saharan Africa. The conclusions of these papers do not necessarily reflect the views and opinions of the World Bank or any of its affiliated organizations.
Wich environmental issues make development unsustainable in Sub-Saharan Africa, and how do African societies perceive and address these issues? How has the World Bank helped its African borrowers integrate environment into their development strategies, policies, and programs? And what must the Bank do to help African countries achieve environmentally sustainable development (ESD)?

Inspired by the 1992 Earth Summit in Rio, the Bank began a reflection process to answer these questions. This reflection has been guided by the message of Rio: without improved environmental management, development will be undermined, and without accelerated development in poor countries, which describes most of Sub-Saharan Africa, the environment will continue to degrade.

This process has helped define the Bank’s medium-term agenda for helping its Sub-Saharan African borrowers attain ESD. It has enriched the Bank’s dialogue with African counterparts about improving the conception and implementation of Bank ESD programs. The process has also sparked interest among a much wider audience, including many prominent institutions, both African and non-African, as well as public and private, universities, NGOs, and bilateral and multilateral agencies. It has encouraged a debate on environmental issues which has stimulated increased support for new African initiatives towards ESD.

Space and time determine the process. Environmental issues are location specific and therefore require integrating the geographic dimension. The time process has focused on both past and future historical perspectives. The future time horizon is 2025 — i.e., 30 years, roughly a generation. Backward, the process focuses on the past decade, and the Bank’s association with Africa, in order to measure the full magnitude of environmental issues.

Within this process, about 13 thematic “building blocks” have been compiled, each addressing a specific ESD issue. These “blocks,” prepared by specialists from inside and outside the Bank, fall into five categories: population, environmental knowledge, urban environment, natural resources management, and strategic instruments. The building block series was the basis for the preparation of a World Bank discussion paper: Toward Environmentally Sustainable Development in Sub-Saharan Africa: A World Bank Perspective, which was later published in the “Development in Practice” series.

This paper on Environmental Education is one of the key strategic building blocks. It corresponds to the Bank’s environment and education sector strategies. Because human decisions are at the core of most actions affecting the environment, environmental education is critical in the effort to increase environmental sustainability of development activities. People must learn that they have the creativity and commitment to stabilize, sustain, and improve their environment. The success of any environmental policy depends on the individual and/or community’s ability to solve present and future environmental problems through the acquisition of knowledge, values, skills, and experiences. This requires broad partnerships to help engage African countries in promoting environmental education, public awareness, and training — all of which are essential for policies and actions that support sustainable development.

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Executive Summary

Participants at the 1992 United Nations Conference on Environment and Development (UNCED) — known as the Rio Earth Summit — unanimously agreed that "education is critical for promoting sustainable development and increasing the capacity for people to address environment and development issues." However, most Bank-supported educational projects have missed the opportunity to introduce environmental issues into school curricula, and have missed opportunities for environmental education in the building of schools (where the community becomes involved in a simple environmental assessment exercise) and in the development of educational textbooks (where environmental dimensions can be integrated).

The Bank is in a position to promote and foster environmental education and communication. It is the largest single source of external financing for education in developing countries and can recommend funding to achieve national plans through NEAPs, ESPs, and lending to education. Yet, despite the Bank's strong and public commitment to environmental education, educational programs pay little attention to environmental issues.

The Africa Region has defined a strategy for improving its assistance to SSA countries on their road toward ESD. This strategy is named "Toward Environmentally Sustainable Development in Sub-Saharan Africa: A World Bank Agenda." This paper is a contribution to the thematic "building blocks" series prepared specifically to support the implementation of this strategy. As part of the strategy, this paper argues that environmental education (EE) is imperative for countries to integrate environment in their development process.

The study embraces a broad definition of environmental education as it appears in many different forms, including public awareness raising, training and extension, and curriculum development. The paper takes stock of different environmental education activities undertaken by various aid agencies, professional and private associations, NGOs and local communities in SSA. The paper also reviews the Bank's work in environmental education in SSA through an analysis of project documents and other relevant reports. The findings show that Bank experience in environmental education is very limited. Drawing on external and internal experience, the paper identifies priority activities and proposes recommendations for practical actions.

Bank-supported projects are a great opportunity to build environmental capacity in the client countries and better manage natural resources. Environmental education issues should be integrated into the country operations portfolio instead of emphasizing stand-alone projects. There are several ways to achieve this objective:

* Create a network of environmental educators inside and outside the Bank.
* Disseminate "lessons learned" and develop a knowledge base.
* Use the Africa Region's environmental project review capacity to review projects for incorporation of environmental education components.

Many educators, environmentalists, and decision-makers mistakenly regard environmental education as a costly addition to an already heavy curriculum, project, or policy. Environmental education should not be an addition to, but an integral part of all curricula. Future sustainability of development initiatives in SSA depends on appropriate strategies to modify beliefs and bring about more positive attitudes and actions that benefit the environment. More strategic funding of existing and future environmental education efforts is imperative to produce both environmental and economic benefits.
Environmental education, defined by Vinke (1993) as "any transfer of knowledge on environmental issues," has always existed. A joint UNESCO and United Nations Environment Programme (UNEP) conference in 1987 defined environmental education as "a permanent process in which individuals and the community gain awareness of their environment and acquire knowledge, to be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment, and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and nonformal methods and effective means of communication.

Chapter 36.3, Agenda 21 (UNCED, Rio de Janeiro)

values, skills, experiences, and also the determination which will enable them to act — individually and collectively — to solve present and future environmental problems. "Human decisions are at the core of most actions affecting the environment, and environmental education is critical in the effort to increase the environmental sustainability of human activities. It should motivate changes in the behavior of individuals that have a direct impact on the use of natural resources. It should increase public pressure on governments to manage natural resources wisely and with greater accountability. Environmental education targets individuals of all ages and walks of life, and focuses on practical approaches to immediate problems of environmental management.

Environmental education (EE) is not taught. It is a process in which people are made aware — through their own observations, discussions and discovery — of their activities' effects on the environment. It helps people find services and resources as well as practical alternatives. Most of the effective EE strategies require other skills, such as communication, consultation, conflict resolution, and management. If while developing these skills and learning more about their environment, people become concerned enough to take action, then and only then will EE be successful and sustainable.

Awareness of the environment, its strength and fragility, has added a new and essential dimension to development. Already in much of the developed world, pollution, and resource depletion, have forced environmental awareness. We are realizing the global consequences of irreversible damage to the biosphere, the depleting ozone layer, the increasing carbon dioxide emissions and their potential to increase global warming. In SSA, rapidly expanding populations, with their increasing demands on natural resources, cause widespread and growing environmental damage, while unmanaged accelerated urbanization is quickly degrading the urban environment. The region suffers from extreme climatic conditions, eroding top soil, diminishing tree cover, and changing patterns of wildlife movement. As in Asia and Latin America, these conditions exacerbate severe and immediate problems of survival for the population.

The global change in attitudes towards the environment, highlighted at various conferences and initiatives, such as the United Nations Conference on Environment and Development (UNCED) 1992 in Rio de Janeiro, requires new perceptions and actions in the area of EE. There was unanimous agreement at Rio that information, awareness-raising and social mobilization related to conservation, restoration, and management of the natural resources should be integrated into the broad process of EE. However, the lack of Bank involvement in environmental education shows that education has become the forgotten priority of Rio.
Most in the environmental community agree that environmental education provides critical support to the long-term success of environmental initiatives. Environmental education is often described in three categories:

1) **Formal EE**, which refers to school curricula through the formal education system --- i.e., schools, training institutions, universities, and other educational institutions;

2) **Nonformal EE**, which refers to training provided through extension services, NGO field officers, community development, church organizations, etc.

3) **Informal EE**, which refers to environmental education which is acquired "in passing," through conversations, news, and/or personal experience. In the broadest sense, all forms of EE raise awareness of environmental issues.

This paper reviews the Bank's work in environmental education in SSA through a literature review and analysis of project documents, Staff Appraisal Reports (SARs) and other reports. The documents reviewed have been divided into five categories. The study examines EE components in a) environmental assessments (EAs); b) National Environmental Action Plans (NEAPs); c) Environmental Support Programs (ESPs); d) education projects; and e) environmental projects (including those in "other" sectors). The annexes give a complete list of reviewed documents. This literature review shows that Bank experience in environmental education is very limited, and there are no stand-alone environmental education projects in the African lending portfolio.

The Annual Operational Review for Education and Training (FY92) review concluded that a knowledge base for environmental education should be developed. Dissemination, follow-up, and developing relationships with organizations more experienced in environmental education were suggested. None of this has yet occurred.

This paper also takes stock of different EE activities undertaken by various aid agencies, professional and private associations, NGOs and communities in SSA. A short summary of the historical background of environmental education provides the context within the development process. In reviewing these projects and activities, the paper examines the need for more systematic Bank involvement in environmental education and asks what is the Bank's comparative advantage.

Drawing on external and internal experience, the paper also identifies priority activities and proposes recommendations for practical actions, including guidelines for considering an EE component and its application. The findings conclude that certain minimal conditions must be met for EE components to be included in Bank supported projects — namely, a request from government, a provision of incentives, a demonstrated capacity (at least some nucleus), and the support of an environmental policy or framework.

Environmental messages are often conveyed in sector work, such as, agricultural extension projects. These "add-on" EE components are included because there is the realization that EE is important. Unfortunately, the EE component is not implemented by environmental education specialists, but usually by an agriculturist, or health worker or other project staff members, taking the form of messages such as "don't cut trees," "boil the water," or "plant like this."

The Bank's education lending portfolio contains few environmental education components. Integration of EE into the formal school curricula has been limited, and most countries have their established systems for curriculum development. In SSA, it is usually done through subject panels made up of representatives from different branches of education (e.g., inspectorate, teacher training colleges, teachers, curriculum designers). Again, unfortunately, these educators themselves lack EE training, and usually fall back on integrating topics such as trees, soil, water as facts to be learned. Integrating EE into the formal school curriculum requires input from others — especially, technical experts, government officials, and people from the commu-
nity — in order to base it on real situations, not on theory or hypothesis.

As follow-up to National Environmental Action Plans, six out of eight Environmental Support Programs in SSA include an environmental education component (formal, informal, and nonformal). Examples of environmental education exist in a few sector projects, i.e., mining projects in Burkina Faso and Ghana; but most EE components have been financed under "environmental" projects. The Bank's involvement in environmental education within on-going ESPS could provide the basis for future work in this area.

Environmental strategy

The Bank strategy for the environment in SSA is to assist African countries in their transition to environmentally sustainable development, emphasizing environmental training, public information, and communication. The Bank's educational strategy for reducing poverty focuses on increasing the productivity of the poor by reducing fertility rates, improving health, and equipping people with the skills to participate fully in society and in the economy. There is no explicit Bank strategy for environmental education.

The environmental strategy paper, "Towards Environmentally Sustainable Development in Sub-Saharan Africa: A World Bank Agenda," states that environmental education is imperative in helping countries integrate environment into their development processes. The Bank will pursue assistance that helps complete and implement the first generation of environmental action plans. Other activities include the incorporation of environmental concerns in sectoral projects, the promotion of policies and market instruments that reflect the environmental cost of resource use, the strengthening of tenure security, the improvement of environmental assessment, and the examination of environmental risk. These objectives begin with enhancing the development of knowledge, communication and information.

Review methodology

Staff Appraisal Reports (SAR), sector strategy papers, and other material from Bank and external sources were the primary sources of information on project objectives, strategies, and outcomes. Additional information on field implementation was sought in interviews with Task Managers, but no independent field data were collected. A complete list of the sources is found in the annexes.

Approximately 90 documents were reviewed for environmental education content and comment. The documents were divided into five categories: education projects, sector projects, environmental assessments (EAs), national environmental action plans (NEAPs), and environmental support programs (ESPs). Project selection for the education (33) and sector projects (22) was based on a key word search of project summaries available through the Lending Operations Database for FY1990–1996. Projects identified through the keyword search were all later reviewed to establish the context in which the keywords appeared. All available EA reports (12), NEAPs (12) and ESPS (11) were reviewed for the same time period (FY1990–1996).

Project objectives and components were reviewed for environmental concerns. More information was obtained from the description of the components and from the annexes. In education projects, most environmental concerns dealt with school construction. When environmental education was included, the components were small with minimal provision for learning materials with environmental content. All EAs, NEAPs, and ESPS systematically included some form of environmental education. However, given the relative newness of these environmental instruments, most EE components are still at the design stage.

Generally, this review revealed that, for all documents, environmental education received passing reference but no detailed scrutiny, especially in the follow-up. One of the major constraints was that there was limited information on small and relatively new EE components or initiatives, and follow-up was difficult. Project files, project completion reports, project completion notes, and other formal documents provided little information.
Environmental education has been closely linked with the concept and perception of the environment itself. The old view that equated the environment merely with its biological and physical aspects has given way to a wider conception which includes its economic and socio-cultural aspects. Environmental education is therefore seen not simply as a separate discipline or specific subject to be added to a curriculum, but as an integral dimension of all curricula. Environmental education should be interdisciplinary, action-oriented, and problem-solving at the interface between environmental constraints and economic needs.

EE initially focused on saving individual species in the natural environment, and its goal was preservation. Later, in the seventies, it became more "ecological," placing great importance on ecosystems; its goal was conservation. In the eighties, humanity's interrelationships with nature came to the forefront, and EE became global with the intent of solving and preventing environmental problems. In the nineties, EE has expanded from a focus on the natural environment to encompass the socio-cultural and economic dimensions of the environment. Its goal now is sustainable development.

Apart from the implied inclusion of environmental education elements in a few development projects, there is little evidence of free-standing EE activities before the 1970s. By 1948, the Constitutive Act of the World Conservation Union (IUCN) had stated that the Union should promote national and international activities relating to an extensive program of environmental education, the spread of public knowledge, the collection, analysis, interpretation, and dissemination of information. Yet, only recently has there been concrete actions in environmental education.

The United Nations Conference on Human Environment in 1972 in Stockholm recognized the close interrelationship between environment and society. That conference established the International Environmental Education Program (EEP), which targeted the general public as the audience. A few months later, under the recommendations of the Stockholm conference, the United Nations Environmental Program (UNEP) was born. In 1975 the UNESCO/UNEP International Environmental Workshop held in Belgrade, Yugoslavia, produced the Belgrade Charter, which defined goals, objectives, principles, and target audiences for effective EE programs. In 1977 the Intergovernmental Conference on Environmental Education, held in Tbilisi in the former USSR, defined environmental education, formulated goals and objectives, and developed strategies for its development. It recommended environmental education for the general public at every age, for all levels of formal education, and for specific occupational or social groups (administrators and planners, industrialists, and agriculturists) through formal and informal channels.

The United Nations World Commission on Environment and Development (WCED, 1987) report, "Our Common Future," or Brundtland Report, captured the debate on the management of natural resources. The report identified both formal and informal environmental education as tools for achieving sustainable development. Formal education curriculum had not been including environmental education as such, but rather topics with an environmental dimension — i.e., plant and animal life, climate and water. These courses were dealing exclusively with the bio-physical environment. In light of the role of EE for sustainable development, this is no longer enough.

Since Rio, when environment and development were accepted as "two sides of the same coin," EE has been in a transitional phase. Future EE must take development into consideration. This presents a great challenge and calls for new, creative strategies for EE. It also explains why EE means different
things to different people and why a common vision in collaborative endeavors is essential.

**Lessons from experience**

These international conferences have raised worldwide awareness of the importance and need for environmental education. Curriculum reforms have led to the coverage of environmental topics in several subjects. Unfortunately, disseminating information in a vacuum, without a holistic integrated EE plan specifying the kind of educational outcomes (concepts, skills and attitudes) that change behavior, does not produce the desired results. More efforts and resources need to be directed to the integration of EE into curricula. In cases where the integration has been systematic and consistent, the results have been positive. And in-service teacher training must be given in conjunction with curriculum development in order to obtain the desired results. (Allen, 1997)

Governments in developing countries are recognizing the importance of both formal and informal environmental education. Environmental education is usually included in National Environmental Action Plans (NEAPs) and may be included in Bank-supported Environmental Support Programs (ESPs). The Bank's new Environmental Education Program could be an opportunity to create a critical mass of environmental educators and knowledge base through the environment/education interface.

Because there is very little assessment of EE activities, impact assessments must be done to select the best strategies. Future EE programs should include a monitoring and evaluation component, and EE teaching/learning materials need pilot testing on a small scale before implementation.

Integrating environmental dimensions into education programs focuses education on real-life issues of environment and development. It makes education more relevant, more interesting to the participants, easier for teachers to teach — because they can use the surrounding environment as a medium for instruction and a source of resources — and of greater value to the community, because they see students and teachers applying education directly to improve the environment and conserve natural resources.

A good starting point for integrating environmental dimensions into education is science curricula: "Science education is important for economic development and is increasingly incorporated in the curriculum. Advanced science education requires expensive laboratories and equipment, and teacher training in these subjects is costly. Many countries view all science education at the lower- and upper-secondary levels as "advanced" and restrict access to science education." (World Bank, 1996f)

More focused Bank involvement in environmental education could strengthen current work and pilot new initiatives. The Bank could contribute to this process by systematically including EE components into the education and environmental lending portfolios. By doing so, the scope for providing coordination and influencing policy would promote environmental sustainability of development initiatives.
World Bank Instruments

The Bank has no explicit environmental education strategy. Most policy and strategy documents refer to environmental education, but, except for some limited ad hoc work in Bank-supported projects, few EE components have been designed and implemented. In addition, no Bank-wide definition of environmental education exists to provide the conceptual framework and measurable outcomes. Compared to the broad range of documentation of environmental management, staff receive little guidance in dealing with environmental education.

Environmental education component in Environmental Assessments (EA)

Twelve environmental assessments (EAs) effective after December 1994 were reviewed in this study. Field visits of six EAs in 1995 were conducted in conjunction with a parallel study on Good Practice EAs.

All twelve EA documents reviewed included a component on environmental assessment capacity building at different levels and/or environmental awareness and training for project staff. The six projects reviewed in the field consisted of two in livestock, one in road maintenance, one in sewage treatment and two in power (geothermal and hydro). In reviewing the implementation of the training components of these projects, most had put some measures into place for environmental training and monitoring. Most of the effort focused on sensitizing project staff to the project’s environmental concerns. For example, in one of the livestock projects, all project staff were given short training courses on safety precautions in the use of pesticides, pesticide and insecticide control, and treatment of toxic wastes.

The implementation of training and capacity building components in EAs are influenced by financial resources and human resource capacity. Most measures were implemented on an ad hoc basis, which also reflects the different ways that implementing agencies internalize the EA process and the mitigation plan. Most of the project staff in this review asked for more environmental awareness and training. Although training and capacity building components are usually routine components of EA preparation, their financing usually derives from the availability of donor contributions.

EA capacity building initiative in the Africa Region

With Norwegian funding, a program has been initiated in the Africa Region to build local capacity for EA preparation. This program intends to introduce environmental assessments as a sustainable development tool to African counterparts, helping to build local capacity in preparing, implementing, and evaluating environmental assessments of development projects, with particular attention to World Bank requirements. The project’s target groups have been local professional project staff, local consultants, and national and local authorities that have some responsibility for environmental assessments of development projects.
To date seven EA workshops were held in Nigeria, Kenya, Tanzania, Malawi, and Namibia (a regional workshop with ten countries participating). A practical handbook for project EAs in which much of the experience from these workshops eventually will be used, is in progress.

This training program introduced the concepts, principles, and technologies for environmental impact assessments of large-scale development projects to more than 200 African professionals, government staff and local consultants. The training has had a significant impact on local project planning, avoiding many development pitfalls and high environmental costs. An example of an EA case study was the issue of glass versus plastic packaging in local milk production and distribution. Since the selection of trainees was done carefully, the multiplier effect of training trainers, as well as government staff responsible for implementation, local consultants, supervisors and advisors, has been positive.

The World Bank African Environment Group will concentrate on strengthening regional training centers in Africa during the coming years. An extension of this program should therefore concentrate on supporting additional local initiatives. Provided funding is extended, future activities will include a) specialized and more advanced EA training workshops, b) workshops for project planners in the integration of EA requirements in project feasibility studies, c) curriculum development in African universities, and d) a public environmental education program focusing on EAs.

Environmental education components in NEAPs

The National Environmental Action Plan is a strategic framework within which environment and sustainable development issues are identified and prioritized. It is the basis for managing, monitoring, and evaluating a plan of action. The Bank has been one of the principal supporters of the NEAP process in SSA. From 1990–1994, the Bank has provided funding for eight projects in support of NEAP implementation for a total investment of approximately $242 million. Other multilateral agencies e.g., — UNDP, the US, French, German, and Nordic bilaterals — have been major supporters of environmental programs in Africa (Greve, 1995).

Capacity building for environmental scientists, engineers, planners, economists, and managers is an essential to environmental strategies. Twenty-four percent of NEAP financing goes to capacity building, institutional support, and education (Greve, 1995). One of the important lessons learned is the need for the Bank and other international agencies and donors to increase support for capacity building for management in Africa. As a result, within the NEAP context, environmental education focuses increasingly on capacity building, training, and developing human resources for environmental planning and management in Africa. Promoting an enabling environment in the public and private sector would allow trained managers to utilize their skills.

The implementation of NEAPs and Environmental Support Programs (ESPs) have created new environmental jobs and technical competencies. However, in most cases, there is no clear assessment of the demand for new jobs and how the needs will be met at the national level as well as the implications for formal training. Supporting environmental education at all levels of formal education would help fill the potential job market gaps.

Allocation of financing for NEAP projects (Total = $242 million)

- Research: 10%
- Information and monitoring: 23%
- Urban and natural resource management plans: 29%
- Biodiversity conservation and wildlife management: 14%
- Capacity building, institutional support, and education: 24%

Source: The World Bank, Staff Appraisal
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NEAPs are launching instruments for National Environmental Education and Communication Strategies (EE&C). They provide a framework for EE to address the prioritized environmental problems and issues. Where these national EE&C strategies have been developed, for instance in Malawi and The Gambia, they have also provided the coordinating mechanisms for cooperation across sectors. The development of EE&C strategies is a good investment because of the multiplier effect produced. The Bank and other local and international agencies can bring together the strategic objectives to some or all of the goals expressed in the NEAP. However, although the NEAPs generally express strong interest in environmental education and communication across sectors, countries have barely translated this language into programs or budget appropriations. (GreenCOM, 1996)

Box 1. Environmental Education in Madagascar

Madagascar’s new national strategy for Environmental Education and Communication (EE&C) activities under the national environment action plan have not yet reached the few “growing pains.” The assessment showed a weakness in education and communication as a result of poor implementation. The process has been top-down, and funding allocated for EE&C activities never reached the people it intended to serve. Madagascar receives a large amount of international aid but poor coordination among agencies and omission of political and income resources concerns hamper their efforts. However, other initiatives in nonformal EE have produced more positive results in raising environmental awareness. For example, the environment and National Park Resource Centre was developed in a cooperative fashion with local participation. The current January 1997 Madagascar Report describes the most recent activities, including “100 month,” addition of new English language learning rooms, and the initiation of two weekly radio broadcasts on environmental issues in collaboration with the local radio station.

Box 2. The National Children and Youth Forum on the Environment

The NEAP process paid a great deal of attention to increasing the role of students and youth in determining the future of Ethiopia’s environment. The NEAP secretariat, working closely with the Ministry of Education and the Ministry of Information, created a number of educational and participatory opportunities for all Ethiopian students during “Green Week” February 1995. More than two hundred students from grades 6-11 nominated for their strong interest in environmental issues, attended the convention on the Ethiopian Environment in Addis Ababa. Four to five schools were selected from each province with forty-eight schools in total. Prior to the conventions, students were encouraged to discuss the agenda of the conferences and prepare position papers. The NEAP secretariat presented an action-packed program on Ethiopia’s environment and explained why the national management plan was essential. Students debated how they could actively help protect the environment by initiating their own programs. Students were then divided into eight working groups to discuss different issues. Selections from the reports and recommendations of each group were adopted by the National Youth Conference.

National Environmental Action Plan for Ethiopia (NEAP-E), 1995
Table 1. Environmental education components in ESPs in SSA (millions of US$)

<table>
<thead>
<tr>
<th>Country</th>
<th>Project</th>
<th>EE Component</th>
<th>Cost of EE Component</th>
<th>Total Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin(FY95)</td>
<td>Environmental Management</td>
<td>formal, nonformal &amp; informal</td>
<td>1.5</td>
<td>9.3</td>
</tr>
<tr>
<td>Gambia(FY92)</td>
<td>Capacity Bldg. for Environmental Mgt. and Tech. Asst.</td>
<td>formal, nonformal &amp; informal</td>
<td>0.4</td>
<td>5.0</td>
</tr>
<tr>
<td>Ghana(FY92)</td>
<td>Env. Resource Mgt.</td>
<td>nonformal &amp; informal</td>
<td>0.8</td>
<td>36</td>
</tr>
<tr>
<td>Madagascar(FY90)</td>
<td>Env. Program</td>
<td>nonformal &amp; informal</td>
<td>4.2</td>
<td>86</td>
</tr>
<tr>
<td>Malawi(FY96)</td>
<td>Env. Support Program</td>
<td>formal &amp; nonformal</td>
<td>2.0</td>
<td>38</td>
</tr>
<tr>
<td>Uganda(FY95)</td>
<td>Env. Mgt. Capacity Building</td>
<td>formal, nonformal &amp; informal</td>
<td>0.6</td>
<td>15</td>
</tr>
<tr>
<td>Zambia(FY97)</td>
<td>Env. Sector Investment Program</td>
<td>formal, nonformal &amp; informal</td>
<td>1.8</td>
<td>20</td>
</tr>
</tbody>
</table>

The NEAP process can build national consensus on environmental priorities—in a broad sense, the process itself raises environmental awareness. Participation not only includes decision-makers, environmental professionals, and policy makers, but also students and communities, which helps to raise local and national awareness. For example, the preparation of the National Environmental Management Plan of Eritrea included consultations with various decision-maker, as well as inputs from students and schools in a special youth conference on the environment.

**EE components in Environmental Support Programs**

As follow-up to NEAPs, seven out of eight ESPs reviewed included EE components at different levels targeted at various audiences. Environmental education activities varied from project to project — but all used the NEAP as the conceptual framework and all projects surveyed existing organizations working in environmental education on the ground for potential partnerships. Environmental education components in ESPs generally include formal, nonformal, and informal education. Ghana’s Environmental Resource Management Project’s (FY92) EE component developed a strategy for increasing public awareness of environmental issues and supporting electronic media and print campaigns, using available government and NGO skills. The component focused on building on the existing capabilities within the Ghana Environmental Protection Agency (GEPA) and NGOs such as the Green Forum for Development, the Wildlife Clubs of Ghana, and the Ghana Wild-
Building Blocks for Sustainable Development in SSA

Schools, women's groups, businesses, and others entered the first national environmental awards scheme in The Gambia. The competition was designed to raise environmental awareness and encourage public participation in environmental management. The National Environmental Agency (NEA) designed eight different awards categories to involve a range of target audiences: Enhanced School Surroundings; Enhanced Surroundings in a Community or Neighborhood; Women and Environment; Community Sustainable Development; Appropriate Technology; Clean and Safe Business/Industry; Clean and Safe Enterprise; and Individual Advocacy.

The competition provoked discussion and action on environmental issues among Gambians. The award organizers visited community leaders and officials in each of the country’s regional divisions, and each division formed a task force responsible for local competitions. Two weeks of sensitization through radio, films, meetings, poster displays, and newspaper articles followed. Each competing organization submitted an entry form that described the activity, its benefits to people, and its benefits to the environment. Activities ranged from a single street vendor setting up a rubbish bin next to his stall, to women’s groups planting community gardens with composting and soil erosion control measures. In addition to publicity at the local level, a national media campaign took place, featuring one of the country’s first radio-phone-in programs. A team from the NEA began with a discussion about the awards scheme, but people soon began calling to ask questions in five languages about general environmental concerns. District task forces determined local winners, and five Cabinet ministers attended the announcements of the national winners. Prizes included certificates, trophies, tools, and school equipment. This was a successful and wide-reaching activity which has become sustainable in The Gambia.

**Environmental education components in education projects**

Although the integration of environmental concerns has begun in Bank supported education projects, it has only been completed in about one-fourth of them. Some of the recent projects — for example, in Chad Basic Education V (FY93) and Mauritania General Education V (FY95) — incorporate environmental education into the school curriculum, develop new textbooks, involve practical environmental mini-projects, with participation from parents’ associations, and promote in-service and pre-service teacher training.

Of the thirty-three education project SAREs reviewed, fourteen mention the environmental considerations, and only nine mention environmental education. (An overview of the environmental considerations in project components are summarized in Table 2.) Most of the projects dealing with school construction cited positive impact to the environ-

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**Box 4. The Gambia: Environmental Awards Scheme**

<table>
<thead>
<tr>
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</tr>
</thead>
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**Environmental education components in education projects**

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Environmental Education in Sub-Saharan Africa

Table 2. Environmental Considerations in Education Projects

<table>
<thead>
<tr>
<th>Country</th>
<th>Project</th>
<th>Year</th>
<th>Construction of Facilities</th>
<th>Textbooks &amp; Materials</th>
<th>Teacher Training</th>
<th>Curriculum</th>
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<td>X</td>
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<td>Primary Education and Teacher Dev.</td>
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<td>Zaire</td>
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<td>1991</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
</tbody>
</table>

1 and related infrastructure
2 including partnerships with local organizations and NGOs

Environmental education components in sector projects

Of the twenty-two sector projects reviewed, seven included an EE component. Six of the seven projects included comprehensive programs directly related to the project. The most common objective was to strengthen capacity of project staff, local communities, NGOs and government to manage the natural resources in a sustainable manner. Some of these activities included technical training and assistance on specific project issues—i.e., mitigating oil spills, urban sanitation issues, as so forth.

Two projects in Ghana, the Coastal Wetlands Management Project (FY92) and Mining Sector Development and Environment Project (FY95), build capacity of the existing agency, EPA. These projects have financed community education facilities and trained personnel of the Department of Game and Wildlife (DGW) and the Wildlife Clubs of Ghana in environmental education. The first project will also provide financial support to a local NGO, Wildlife Clubs of Ghana to a) finance production and dissemination of educational materials, b) sponsor training workshops, and c) implement environmental and conservation projects.
Large components for environmental training for the mining sectors in Ghana (US$4.67 million out of 13.65 million) and Burkina Faso (US$3.1 million out of 20.7 million), have been designed. The components intend to build necessary manpower skills, know-how, and organizational capacity at public agencies in the mining sector in order to fulfill regulatory, monitoring, and promotional roles. A link has been planned with the University of Ouagadougou and the National School of Finance in Burkina Faso to build sustainable capacity in mining law and environmental management as well as applied mining taxation. These innovative components are new and have great potential in illustrating positive multidisciplinary work. A summary of the EE components is included in Annex 3.

## 4 Non-Bank Experience in Environmental Education

Environmental education should ideally be a participatory process. Actors and audiences involved in environmental education include policy makers, teachers, students in formal education, NGOs, journalists, and urban and rural communities. Some of the major issues that come out of environmental education activities are lack of coordination, financial constraints, link to incentives, and need for creativity.

Methods and activities used in environmental education vary in terms of their application in formal, nonformal, and informal education, and in the media. Historically, environmental activities have been small-scale — and small, isolated efforts are seldom productive (Allen, 1997). There are many environmental activities that could strengthen coordination of these activities, for example, better cooperation among the public, NGOs, and the media. Learning and development institutions and organizations could also help integrate environment into the mainstream, and training media specialists is a sound investment because of their cost-effectiveness and broad dissemination capacity. The West African Newsmedia Centre (see Box 5) has built local capacity and has integrated the environment into print and broadcast media.

Creativity of presentation is also important to the success of EE. Environmental education activities must be relevant to the target audience. For example, Mali’s WALLA magazine and Kenya’s Pied Crow magazine contain competitions and games that are well received by schoolchildren, leading to interest in environmental issues. Similarly, posters, puppet shows, audio-visual shows, stories, street theater, and technology have had a great impact on children. Messages are more lasting, however, if they instill pride in the local natural resources and show the benefits derived from environmental improvements (Vinke, 1993), for example, tourism. This activity has the potential to affect economic welfare, raise awareness, and evoke a sense of pride in people. World Wide Fund for Nature (WWF) is particularly active in building community support for nature reserves by involving local people in the management of these areas and demonstrating how people can benefit from their protection.

Groups working in environmental education usually operate under tight financial constraints. In alleviating cost constraints, several beneficial actions can be taken. For example, networking between the different actors would accommodate information
West African Newsmedia and Development Centre (WANAD) is trying to improve the competence of the media in West Africa through editorial, technical and management training, provision of equipment, and technical assistance. The editorial training program focuses on building the skills of reporters in development issues, with specialized modules on environment, health, population, agriculture and rural development, economy and finance, and women in development. Although treated as a special module, the environment is given primary attention in all WANAD seminars because of its interrelationship with other issues. WANAD provides continuous, specialized — not basic — training for professional journalists and editors. The duration of the seminars varies from one to six weeks, depending on sponsorship. The training is structured to include classroom lectures by experts, field trips to development projects and institutions (including travel to neighboring countries), and practical, editorial writing exercises followed by daily discussions. Since its inception in 1984, over 1,200 media personnel have participated in its over 50 regional and 30 national editorial, technical and management training programs. It organizes training seminars on behalf of national and international development agencies and institutions, including the World Bank's EX, WHO Regional Office for Africa, UNESCO, UNDP, the European Union, the Ministry of Culture and Communication, Benin, the News Agency of Nigeria, and the Vanguard, a private newspaper in Lagos, Nigeria.

WANAD Centre in Cotonou, Benin
Changes of attitudes and practices of rural communities towards natural resources is essential to environmental education process. CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) in Zimbabwe is an innovative and adaptive rural development program which is changing the attitudes of local communities towards their natural resources. Consultative decision-making at the village, ward, and district levels through democratically-elected institutions is a basic principle. The program links environmental management with rural economic development. The selection of local cadres, the major inputs to their training, and the nature of their duties under the program are local responsibilities. CAMPFIRE started with wildlife resources and is now being diversified to include timber exploitation, fisheries and ecotourism.

Planning education to care for the earth, 1995

Environmental education in the Sahel and neighboring countries of western Africa must connect first with traditional knowledge and community needs and, from this, learn how to deal with problems. Educational activities should target school children as primary agents of change in communities. There are successes in changing attitudes and behavior where the quality of environment affects survival and health. Environmental information, however, is not always the motivation for change of behavior, and personal benefit is important. The value of environmental education is not to impose a way of thinking, but to deepen people's understanding of the environment and the problems faced in regard to the environment in order to create a climate for finding appropriate solutions through the application of simple techniques and practices.

Planning education to care for the earth, 1995
Next Steps

Proposed recommendations for Bank-supported environmental education activities

Bank strategy for the environment in SSA calls for strengthening institutions and initiatives that will conserve the environment. To achieve this, much work still needs to be done in raising awareness of environmental issues, implementing training and extension programs, and integrating environmental education into school curricula (formal) and through nonformal and informal channels. There are no exclusive or unique models for introducing and practicing environmental education in different countries because environmental education is location-specific and geographic-referenced. Environmental issues, actors, and audiences vary from place to place.

A feasible approach would be to combine different elements of environmental education. According to J. Vinke in *Environmental Education: An Approach to Sustainable Development*, the first element should include visibility and the need for environmental education. The second element should include consideration of the relevant forces motivating people to act (be it material, moral, or ethical incentives — material incentives are paramount where people are facing severe problems of survival), where credibility, confidence, and participation are also integrated into the process. The third element should include a degree of civil liberties and legal protection (human rights) for the actors because it may be difficult to initiate certain activities which may be controversial — i.e., population control, access to information and so forth (Vinke, 1993).

Environmental education should have national and local roots. Environmental education should be internalized as a learning process within its various spheres of operation — such as public administration, schools, industry and the rural and urban population. A sense of ownership must be real. Public involvement in data collection, monitoring, campaigning, and conservation activities should be integrated. This would lower costs and, at the same time, enhance commitment, credibility, and sustainability. Environmental education messages that are compatible with the economic conditions of their audience will be effective.

The use of information technology and the Internet as a tool should be explored. This could take the form of community information and learning centers, small libraries, village management, EIS (environment information systems) and GIS (geographic information systems), where the community’s information can be stored and updated. Information technology could help awareness raising activities, training, and curriculum building. Imparting, sharing and disseminating information is the preliminary stage in the environmental education process.

In helping people take responsibility for environment and sustainable development, education, communication, and information are essential components. The Bank places great emphasis on working with developing countries to help them invest better in human development. Environmental education at all levels of public awareness raising, training and extension and curriculum building, through participation and facilitating ownership, is critical to furthering the environmental agenda in a sustainable manner.

Action Plan

Bank-supported projects are a great opportunity to build environmental capacity and manage natural resources in the client countries. The approach to environmental education should be the integration of environmental issues into the country operations portfolio, rather than emphasizing the creation of stand-alone EE projects, which are unlikely to materialize given the current budget constraints. There are different ways to achieve this objective:
• Create a network of environmental educators inside and outside the Bank.
• Disseminate "lessons learned" and develop a knowledge base. Distilling lessons learned from current and other projects with environmental education components would enhance future component and project preparation, implementation, and monitoring.
• Use Africa Region's environmental assessment project review capacity to systematically review projects for incorporation of environmental education issues. Pilot environmental education components could be integrated into several suitable education projects, environmental support programs, and sector projects.

The network of practitioners must help task teams with environmental education issues and strategies. This could be pursued through: brown bag lunches, workshops, and seminars. The discussions would target the environmental issues and how they could be integrated into the projects. A presentation of the principles of an environmental education strategy would provide the framework for project collaboration from integrating activities related to appropriate training or awareness to curriculum building to textbook acquisition.

**Conclusion**

Currently, environmental education in the Africa Region is at best an add-on activity in Bank projects focused on reinforcing specific components of a larger project where public awareness or participation is important. Because of the lack of documented follow-up, it is difficult to draw lessons from these environmental activities in Bank projects. The effects of the environmental education process are generally long-term and difficult to measure. For that reason, specific process objectives and indicators should be developed to monitor progress in the short run. By doing so, environmental education components and programs increase their chances of success and cost-effectiveness, which would lead to greater credibility and greater continuity in inclusion into Bank supported projects.

The Annual Operational Review on Education and Training (FY92), as well as this review, concludes that one or more centrally placed, full-time environmental educators would be needed for the Bank to take full advantage of the opportunities for integrating environmental education issues into the country operations portfolio and, thereby, contributing to ESD.
Annexes

Annex 1: Environmental Assessments Reviewed

1. Ghana Urban II Project.
2. Ghana National Feeder Roads Rehabilitation and Maintenance project.
4. Ghana Transport Rehabilitation II.
5. Ghana Community Water and Sanitation Project.
10. Kenya The Arid Lands (ASAL) project.
11. Uganda Livestock Services Project.
12. Malawi Power V project.

Annex 2: National Environmental Action Plans (NEAPs) reviewed

2. Ghana Environmental Action Plan (Volume I)
3. Ethiopia National Conservation Strategy (Volumes 1-5)
7. Guinea-Bissau: Towards a Strategic Agenda for Environmental Management, April 7, 1993

Annex 3: Environmental Support Programs (ESPs) reviewed

Benin Natural Resources Management (1992)
Benin Environmental Management (1995)
Ghana Environmental Resource Management (1992)
Madagascar Environmental Program (1990)
Malawi Environmental Support Project (1996)
Mauritius Environmental Monitoring and Development (1991)
Nigeria Environmental Management (1992)
Seychelles Environment and Transport (1993)
Uganda Environmental Capacity Building Project (1995)
Zambia Environment Sector Investment Program (1997)
### Annex 4: Education Staff Appraisal Reports (SAR) reviewed

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<th>Report No.</th>
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<th>Country</th>
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*shaded projects include some form of environmental education*
### Annex 5: "Environmental" projects reviewed

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US$1.0 million has been allocated for a technical assistance, training and monitoring program. A comprehensive technical assistance and training program is required to plan and implement the project and address the identified institutional weaknesses, including environmental monitoring, land use issues, coordination of planning and investments, public information and education, and impact assessment of new investments. Technical assistance needs for urban management and local financial resource mobilization, as well as for urban environment management, will be covered under this component. Resources will be devoted to human resources, operating expenses, training materials, and supplies to strengthen the awareness of the urban environmental issues through communication and information flows.


One of the four objectives of the project is to strengthen the capacity of local communities, NGOs, and government to manage wild plant and animal resources in a sustainable manner. The project would finance awareness building and training for local communities on village organization, project management and planning, habitat and wildlife management, the use of secondary forest products, anti-poaching, and monitoring and evaluation. Training will also be provided to local government officials and project staff, and technical assistance will be provided to village groups and associations. This component amounts to 15 percent of total base costs in Burkina Faso and 16 percent of total costs in Côte d’Ivoire.

The training component will finance over 250 training sessions at each site.


The project intends to build capacity in both the public and private sector to administer the mining and environmental regulations and tax regime. At the same time, the project will establish needed capacity in government to operationalize the NEAP, particularly to establish a national environmental information system, an environmental information and communications program (EIC), develop monitorable standards and guidelines as tools for ensuring compliance of regulations, and build capacity and human skills in both the public and private sector for environmental management.

The components related to environmental education are (a) regulatory and fiscal framework training to build sustainable capacity in mining law and environmental management; and (b) applied mining taxation through special training modules at the University of Ouagadougou and the National School of Finance Management.

- *Institutional strengthening and resources management:* establish and sustain an environmental unit within the Ministry of Environment; create and support a sector environmental database;
- *Environmental management:* design and implement an environmental sensitization and awareness campaign and provide training in areas of environmental policy formulation, monitoring, and management;
- *Small-scale and artisanal mining:* in coordination with the Ministry of Environment and Water implement, an environmental sensitization and awareness campaign in the artisanal mining communities.
4. GHANA: COASTAL WETLANDS MANAGEMENT PROJECT (1992)

The coastal wetlands management program will bring the five key coastal wetlands identified in the EAP, and proposed for designation as "Ramsar" sites, under an effective management regime, to ensure ecological viability, promote economic development, and raise public awareness of environmental issues and conservation values.

The project would finance construction and staffing of community education facilities at each of the project sites and provide training in environmental education to personnel of the Department of Game and Wildlife (DGW) and the Wildlife Clubs of Ghana (WCG). A major facility for visitors would be constructed adjacent to the Sakumo Lagoon which would also provide headquarters and office space for the DGW management and educational staff. The Sakumo center located in the heart of the major metropolitan district of Accra-Tema would have exhibits and classroom and auditorium facilities that would cater to school field trips and provide regular programs on environmental themes for the general public. The center would be maintained by the DGW but would share programming with the environmental education unit of the EPC. WCG personnel would develop curricula and educational materials, organize special events, and promote environmental awareness in the general public.

The project would also provide financial support to the Wildlife Clubs of Ghana, an NGO focused on developing environmental awareness in schoolchildren. The project would finance production and dissemination of educational materials, sponsor training workshops for volunteer Wildlife Club leaders, and underwrite extension activities such as field trips, camps, and environmental and conservation projects. WCG would train and supervise community education officers to work with local communities and develop programs for the local education center at each of the wetland sites.

5. GHANA: URBAN ENVIRONMENTAL SANITATION PROJECT (1996)

This project includes an institutional strengthening component which comprises 13 percent of total project costs. The project includes training at local and central levels for technical and management capacity in urban environment sanitation. This component consists of five activities:

* support to the Ministry of Local Government and Rural Development by hiring national consultants to bolster its capacity — i.e., environmental sanitation specialists
* support to Technical Services Centre enabling provision of technical support and on-the-job training to the five Municipal Assemblies concerning the activities
* support to project-wide capacity building and training in environmental sanitation and municipal finances (designing public enlightenment campaigns and preparing health education materials
* support to contract staff metro and municipal assemblies for day-to-day management of the city's sub-projects
* support to individual cities' capacity building.


This project includes a large component on environmental training for mining sector agencies (US$5.0 million). The training and capacity building activities have two main objectives. They aim to build necessary manpower skills, know-how, and organizational capacity at public agencies in the mining sector. They will also improve the technology and operational practices of small-scale miners, through extension services to promote a self-sustainable evolution of efficient and environmentally responsive formal small-
scale mining activities. Emphasis has been placed on project design, the establishment of appropriate systems and procedures in key areas of sectoral management, and on the development of skilled professional manpower.

These objectives will be achieved principally through the execution of training programs at MC (Minerals Commission), GS (Geological Survey), and MD (Mines Department). The training will consist of staff improvement activities through implementation of workshops, on-the-job training, and short-term overseas training.

7. MADAGASCAR: ANTANANARIVO URBAN WORKS PROJECT (AUWP) [1994]

It was agreed that an assessment would be made of the environmental impact of sub-projects. To the extent possible the AUWP encourages the strengthening of local capacity to conduct environmental assessments. The National Environmental Office (one) indicated that they were in the process of designing an EA training package for local consulting firms. The syllabus under preparation would be primarily technical in content.
Bibliography


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Current publications:


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