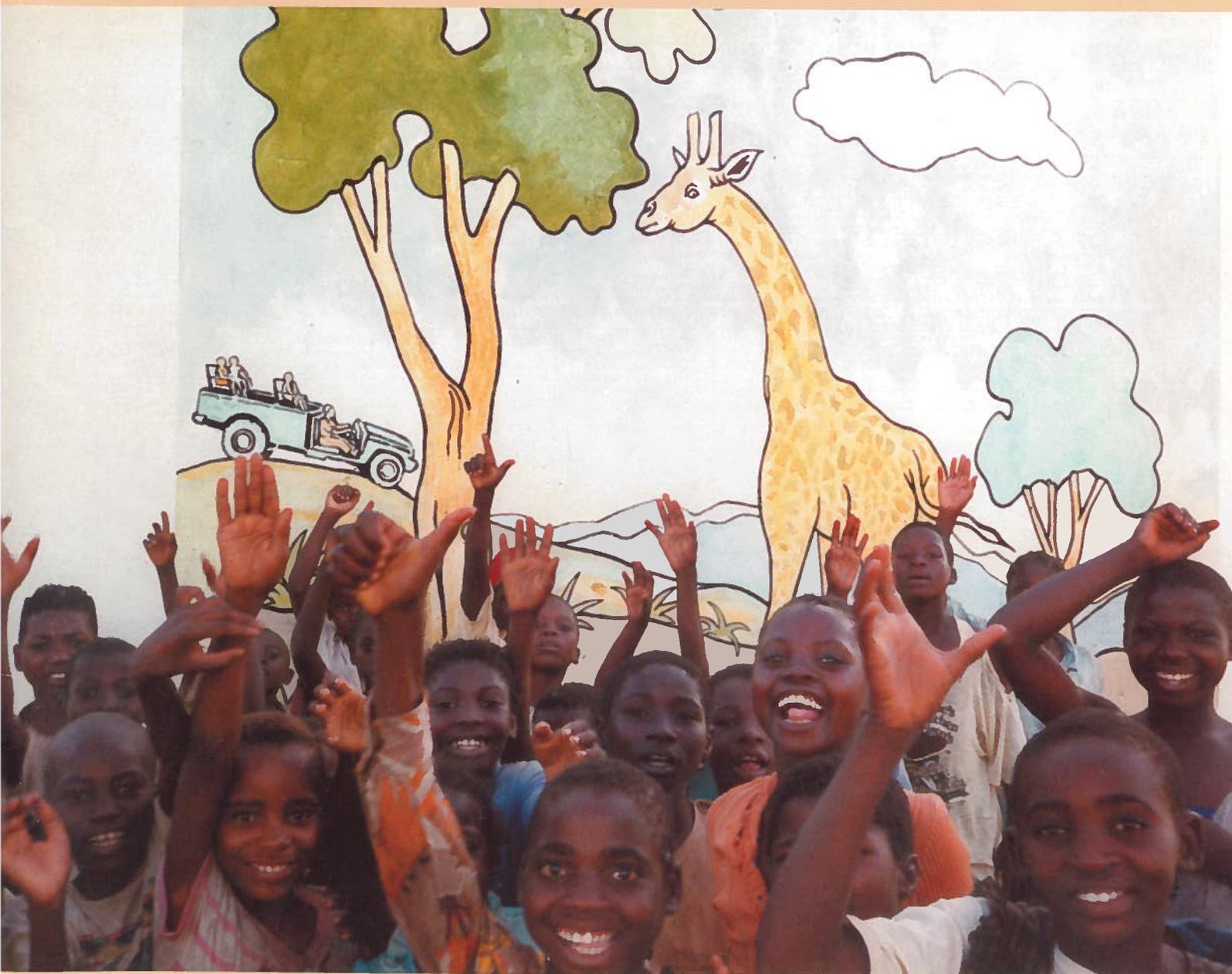


Lessons From School-Based Environmental Education Programs in Three African Countries

Office of Sustainable Development
Bureau for Africa

GreenCOM
Environmental Education and Communication Project



June 2000



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Cover: Chongololo Club members in front of their mural at Yosefi Primary School, Mfuwe, Zambia.
Photo by Brad Strickland.

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Acknowledgments

In development work, no sector is an island unto itself. Although any given sector must pay careful attention to internal needs such as funds for paying salaries and information systems for monitoring progress, sectors often can get more for their money by cooperating.

For the past decade, USAID's Africa Bureau has focussed most of its resources on directly strengthening ministries of education. Since the early nineties, however, it has invested in the exploration of ways to weave health, population, environment, democratization, and privatization into basic education programs in Africa. (For more information, please see AFR/SD Technical Series report No. 14 and No. 38).

This report continues this exploration, and provides many exciting examples of ways in which communities and schools are using scarce resources to address environmental as well as educational challenges.

The contributions of many people were instrumental in putting together this report. The Africa Bureau would particularly like to thank Renata Seidel for writing it, and Bruce K. Downie, Irma Allen, and Sékou Oumar Diarra for compiling the individual country reports upon which this document is based. The Africa Bureau is also very grateful to the school-based conservation organizations in Mali, Tanzania, and Zambia, specifically the Chongololo Clubs, Roots and Shoots, Wildlife Conservation Society of Tanzania, Malihai Clubs, and the Training and Information Programme on the Environment, and to the school administrators and teachers who support them. The Bureau would also like to thank the countless staff at numerous government agencies in these countries for their enthusiasm and assistance. Within the Africa Bureau, Brad Strickland and Julie Owen-Rea were instrumental in ensuring that this report was completed and produced. And finally, the Africa Bureau Information Center of USAID's Research and Reference Services Project assisted with the editing and printing of this publication.

List of Acronyms

CC	Chongololo Clubs
CILSS	Inter-State Committee for the Fight Against the Drought in the Sahel
DRC	Democratic Republic of the Congo
EE	Environmental Education
GEF	Global Environment Fund
GMA	Game Management Area
GreenCOM	The Environmental Education and Communication Project
JGI	Jane Goodall Institute
NGO	Nongovernmental Organization
NORAD	Norwegian Agency for Development Cooperation
TIPE	Training and Information Programme on the Environment
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
USAID	United States Agency for International Development
VSO	Voluntary Service Organization
WCST	Wildlife Conservation Society of Tanzania
WECSZ	Wildlife and Environmental Conservation Society of Zambia

Executive Summary

BENEFITTING FROM THE LESSONS OF OTHERS

This document looks at successful environmental education programs for youth in three African countries: Mali, Tanzania, and Zambia. The programs emerged in quite different circumstances and have aimed at achieving different objectives. All have strived to improve knowledge and attitudes about specific environmental problems and to lay a foundation for wise behavior as children grow into adults. To a great extent these programs have also influenced the actual practices of children, and have achieved an impact upon parents and the local community.

The Africa Bureau's Office of Sustainable Development (AFR/SD) Education Team of the United States Agency for International Development (USAID) asked the GreenCOM project¹ to conduct qualitative assessments of these programs in order to identify key factors of their success. In particular, USAID was interested in analyzing the extent to which schools and communities collaborated, to their mutual benefit. These programs benefit not only community education about environment, but also invigorate the school-community relationship. Community interest and support for their schools is an essential ingredient to sustainable education reform. The purpose of this study is to provide useful ideas for others who are interested in designing or improving school-based programs—whether as implementors, funders, or local partners.

¹The Environmental Education and Communication (GreenCOM) Project is funded by USAID and managed by the Academy for Educational Development. The programs evaluated for this study are not managed by GreenCOM or by the Academy.

The first four sections of this document provide an introduction and overview of the programs in these countries. The last section attempts to draw out cross-cutting lessons for different audiences. Two annexes include a brief overview of other environmental education activities around the world and a bibliography.

MEETING DIFFERENT NEEDS IN DIFFERENT CONTEXTS

Although the programs described in the pages below are all associated with schools, are all situated in Africa, and are all recognized as successful environmental education (EE) efforts, they might have been chosen for their differences.

In Mali, 320 grade schools have adopted a formal environmental education curriculum designed as part of a regional program to combat desertification in nine Sahelian countries. The European Union has funded the Training and Information Programme on the Environment (TIPE) since the early 1990s. Given the stark conditions of the Malian school system, the program provides striking insights into aspects of a successful school-community strategy.

In Tanzania, conservation clubs for youth sprang from several larger environmental movements. This study looked at three of these, all formed within the last 10 to 15 years.

Roots and Shoots clubs are part of the global activities of the Jane Goodall Institute. Various ongoing conservation projects support clubs associated with the *Wildlife Conservation Society of Tanzania (WCST)*. The Tanzania Wildlife Protection Fund supports the *Malihai Clubs of*

Tanzania. These clubs link variously with elementary, secondary, and, in some cases, teacher training institutes in different parts of the country.

Although their stated goals and structures are quite different, these clubs illustrate how nonformal activities can integrate with great benefit into school systems, and contribute to the varied missions of their parent organizations.

Zambia is home to one of the world's oldest environmental education programs for young children—the *Chongololo Clubs*. The National Parks Department first launched these clubs in the early 1970s as part of a public education effort to counter local resistance to the creation of protected areas. Since early on, the Chongololo Clubs have benefitted from a partnership between the nonprofit Wildlife and Environmental Conservation Society of Zambia (WECSZ), the Ministry of Education, and grassroots volunteer efforts.

The class initially targeted children in the upper elementary grades, and then expanded to secondary schools in the 1980s. The Chongololo Clubs are a unique example of an EE program that has developed a national profile and has stood the test of time.

VARYING PROGRAMS, COMMON CHALLENGES

This synthesis document selected several factors critical to the success of all these programs. Overall, *clarity of objectives*, per the Tanzania programs, is fundamental. At the implementation level, the most important principle is to understand the local school system, the community, and the socio-economic pressures in which a program functions. Adjusting wisely to these realities, more than to any fixed rules, will help bring about results.

Benefitting from the School as a Base

In all of these countries, although elementary schools provide the largest available base of operations, enrollment is low and there is a considerable drop off at the secondary level. Limitations are even greater for girls and exponentially so for programs that target older children.

Despite the limitations of a school base, the evaluators of these programs saw the connection as a virtual necessity. In most developing countries there simply *is* no other group that government or nonprofit organizations can use as a bridge to large numbers of children. The lower grades may provide the only way of reaching girls. A school supplies essential infrastructure, as well as connections to the local government and outreach to community members through standard school channels.

A few of the programs studied extend their reach beyond the school. For instance, the Chongololo Clubs make a concerted effort to broaden reach through radio programs. One TIPE school in Mali opened its drama activities to out-of-school youth.

Ownership and support from the school's administration are significant factors in the success of all these programs. The TIPE strategy is effective because it assures the program belongs to the school. It is an institution in itself, not just a particular curriculum.

Administrators were particularly helpful in establishing linkages with other community institutions. Officials connected with the Tanzania and Zambia clubs often saw youth programs as a positive reflection on their schools, and as a way of encouraging support from parents. Mutuality of benefits between school and youth club was a key factor in the success of all these programs.

Crossing Educational Levels

Continuity of contact with students from grade to grade increases the impact of a program many fold. Both children and their families reinforce conservation messages over time. Linkages across different educational levels—primary, secondary, and teacher training institutes—also greatly increase a program’s public profile and improve its chances of sustainability.

At the same time, there are tradeoffs to this diffusion of resources and each program needs to find its own proper growth curve.

Utilizing Complementary Channels

A number of factors constrain the reach of any program. However, adding channels that offer different strengths can extend impact. Complementary channels require additional investments, so each program needs to weigh what kinds of impacts are expected for what kinds of costs. Is the purpose of a new channel strictly to reach more of the target audience? To reinforce knowledge and attitudes among the regular members? Or to have some spillover into out-of-school youth and the wider community? Radio can do all of these, as the Chongololo Clubs in Zambia demonstrated.

Negotiating Partnerships

A common element in the success of these youth programs was collaboration with other organizations. This study also found that strong leaders tend to be the ones most likely to seek out such partnerships to help achieve goals. At the local level, linkages are themselves one measure of a program’s effectiveness in stimulating environmental awareness.

Almost all of these programs were fortunate to have emerged from a marriage of groups with common objectives. This gave them an expanded base for funding, for expertise, and for meaningful

community activities. Programs that had a mandate to work in partnership with national and local groups benefitted enormously from this requirement. Mutual benefit was the key to all of the effective partnerships described in these studies.

Advocacy and Activism

Children are natural activists. The programs that channeled their enthusiasm in tangible ways benefitted youth the most and also benefitted their communities and the cause of conservation.

Educational theory tells us that personal experience is the most powerful aspect of learning for people of all ages. Besides aiming to improve the knowledge of children, these programs all aimed to achieve some level of community outreach.

Art provided the most basic outlet for outreach. A few schools organized true campaigns to raise awareness about local issues. Children in all of these programs had an impact on their school environments. Activities that led to significant conservation benefits generally relied on cooperation with other organizations.

Activism thrives on the conviction that a cause is important to others and also relevant to one’s own life. One factor of success in this study was a program’s ability to achieve the right balance between a national and local focus.

Recognizing Women’s Roles

Many of the behaviors these programs focused on—from the cutting of trees for fuel, to the choice of cooking stove used, to various agricultural practices—are part of women’s daily work. Women’s groups, therefore, often serve useful advocacy roles in communities. At the same time, young girls are hardest to reach through environmental education programs, because of their low school enrollment.

These studies offered many reminders that an environmental education program cannot be successful if it overlooks the importance of gender in questions of access, pertinence, or advocacy.

Supporting the Grassroots Base

The evaluations found that a sense of isolation can undermine a program more seriously than anything else. Conversely, the opportunity to share ideas and experiences—for both children and leaders alike—is a powerful motivator.

The value of print materials was a constant refrain. Any good material has a life far beyond its planned use in these countries. Three elements were crucial to the effectiveness of a very wide variety of newsletters, posters, magazines, pamphlets, club manuals, and teachers' guides. These were: 1) audience targeting, 2) effective distribution, and 3) continuity throughout a program.

Since materials produced by these programs are often funded by outside donors, publication can be intermittent. Joint funding of publication is one alternative. Distribution to remote areas was also a serious problem and creative strategies are needed.

Effective training and a system for rewarding commitment are essential. Good training is expensive and requires professional input. EE leaders need preparation in content areas and also in group organization and participatory learning skills. Most of this is alien to the traditional classroom techniques familiar to them.

In these studies, training linked directly to availability of substantial funding. Creativity in deploying resources was also a factor. However, for the most part these programs succeeded despite, rather than because of, the level of training provided to the local leaders.

Strategies are also needed to reward volunteers and teachers. Programs elsewhere have found the most powerful motivators are simply peer and community recognition. Activities that can supply this serve simultaneously to promote the organization as a whole and its goals of environmental responsibility.

SEARCHING FOR SUSTAINABILITY

In addition to the seven factors identified above, money and the ability to broker support really lie at the heart of this age old challenge. Environmental programs only survive when they appeal to those who can offer support; this requires careful marketing.

The other factor needed is time. Time is needed to establish linkages in the community, develop a network of committed volunteers who can share ideas, create awareness among a critical mass of people, and educate a generation of new leaders.

1. Introduction and Overview

LINKING PRESENT AND FUTURE

Every society allows itself to focus some hope for a better world on its children. By sheer necessity, even when current conditions seem least bearable, we believe life will be different for those we are raising. Children in turn make us believe their optimism and energy will allow them to accomplish what we might not. We rely on children to embrace a level of idealism and selflessness we may or may not have lost ourselves. As a result, we often find children speaking our conscience. And we are usually more tolerant of their voices than of others.

Perhaps these are all reasons many more environmental education programs focus on children rather than on adults, even though we know it is unfair to hold children responsible for changing attitudes and practices, and, given the speed of degradation, dangerous to wait for children to grow up into environmentally responsible adults. Nonetheless, many school-based programs have become bridges to change within communities.

As an institution sanctioned by the government—or at least the local community—a school is a repository of established values and is often expected to pass these on to its impressionable charges. However, the school is also looked to as a source of new information, skills, and solutions to problems. While every community has different expectations of its educational system, parents everywhere anticipate that their children will come home with facts and ideas they never encountered. Some schools take advantage of this link to the home and plan ways for children to be a channel of

information to their parents. Some schools, whether by design or through the influence of one or two individual teachers, inspire students to think critically about the problems around them, and perhaps to take action. Such schools may become powerful sources for social change.

We often find children speaking our conscience. And we are usually more tolerant of their voices than of others.

Like all school activities, environmental education (EE) programs must find a balance between a local system's commitment to both tradition and innovation. Even the oldest school-based EE efforts have been around barely a generation, so most are still struggling to establish their credibility. Those that are voluntary (youth clubs) need to create ways of training and motivating leaders, as well as ways of engaging—rather than simply educating—young members.

Programs that take on roles of advocacy or activism face even greater challenges as they seek productive links with the wider community. Environmental issues often strike at the heart of a community's economic base. Even apolitical issues are likely to be personally challenging. Each program must set its goals within the context of a given educational system, a given community, and a given vision of how it will contribute to a better tomorrow.

THE PURPOSE OF THIS STUDY

This document looks at successful EE programs in three African countries: Mali, Tanzania, and Zambia. The programs emerged in quite different circumstances and have aimed at achieving different objectives. We need to examine their effectiveness in light of their expressed goals. All have strived to improve knowledge and attitudes about specific environmental problems and to lay a foundation for wise behavior as children grow into adults. To a great extent, these programs have also influenced the actual practices of children, and, to varying degrees, achieved an impact upon parents and the local community.

Our purpose is to provide useful ideas for others who are interested in designing or improving school-based programs—whether as implementors, funders, or local partners. The next three sections of this document provide summaries of the individual country assessments. The last section attempts to draw out cross-cutting lessons for different audiences.

While environmental education (and child education *per se*) can be examined in terms of particular models or theories, we have not sought any formulaic answers. Rather, we hope that the diversity of these experiences will shed light on questions others may be facing.

The annexes include a brief overview of other environmental education activities around the world and a short bibliography. We particularly refer the reader to the three evaluation reports that informed this work. Lastly, those interested can consult the GreenCOM web site (<http://www.usaid.gov/environment/greecom>) for examples of some of the country materials referenced below, links to club web sites, and electronic text versions of this document and the three country evaluations.

EVALUATIONS IN THREE AFRICAN COUNTRIES

Although the programs described here are all associated with schools situated in Africa and are all recognized as successful EE efforts, there are striking contrasts. The three countries face differing economic, political, and social challenges. Their respective environmental problems result from unique combinations of factors. And the five EE programs reviewed are being conducted at multiple grade levels, with quite varying resources and scales of operation, and through a range of approaches. Not surprisingly, however, they have faced some similar challenges.

Widely Varying Programs

In Mali, which is two thirds covered by desert, efforts to introduce environmental education in the public schools are part of a 10-year program in nine Sahelian countries. In the early 1990s, the Inter-State Committee for the Fight Against Drought in the Sahel (CILSS)² launched the Training and Information Programme on the Environment (TIPE)³ with funding from the European Union.

TIPE provides a basic curriculum and training program for public elementary schools in the member countries. In Mali, about 320 schools are now involved. Emphasis is on awareness of the problems of desertification and critical drought-prevention behaviors. One of the program's stated goals is to improve practices within the community as well as within the school.

²Comité Inter-Etat pour la Lutte Contre la Sécheresse au Sahel

³Programme de Formation et d'Information Environnementales

The present study looked at TIPE programs in grades 3-5 in the formal Malian school system. The evaluators chose schools in three different kinds of communities: urban, rural, and bordering on protected forest areas. Given the stark conditions of the Malian school system, this program provides striking insights into elemental aspects of one successful school-community strategy.

Tanzania, in sharp contrast to Mali, is a country of enormous biodiversity. It is endowed with marine ecosystems, savannah, forests, lakes, and is home to some of the largest remaining herds of wildlife in the world. However, rapid population growth and other factors have spurred efforts to improve management of the country's valuable resources, as part of a sustainable development strategy.

Conservation clubs for youth sprang from several larger environmental movements in Tanzania. This study looked at three of these, all formed within the last 10 to 15 years.

Roots and Shoots clubs are part of the global activities of the Jane Goodall Institute. Clubs associated with the *Wildlife Conservation Society of Tanzania (WCST)* receive support from various ongoing conservation projects. The Tanzania Wildlife Protection Fund supports the *Malihai Clubs of Tanzania*. These clubs link variously with elementary, secondary, and in some cases teacher training institutes in different parts of the country.

Although their stated goals and structures are quite different, these clubs illustrate how nonformal activities can integrate with great benefit into school systems and contribute to the varied missions of their parent organizations.

Zambia is home to one of the world's oldest environmental education programs for young children, the *Chongololo Clubs*. These emerged in the early 1970s as part of a public education effort



This study focused on a formal elementary school program in Mali, three different school-based clubs in Tanzania, and Africa's oldest school-based Chongololo clubs in Zambia.

by the National Parks Department to counter local resistance to the creation of protected areas. Zambia consists mainly of a high plateau of bush and savannah that was once home to abundant wildlife. Approximately one-third of the country's 750,000 square kilometers has been designated as national parks or game management areas to protect this extraordinary resource.

Since early on, the Chongololo Clubs have enjoyed support from the nonprofit Wildlife and Environmental Conservation Society of Zambia (WECSZ) and grassroots volunteer efforts. They initially targeted children in the upper elementary grades. The clubs expanded to secondary schools in the 1980s and some clubs also target younger children. The Chongololo Clubs are a unique example of an EE program that has developed a national profile and has stood the test of time.

Practical Assessments

USAID's GreenCOM Project agreed to conduct small-scale assessments of these programs, primarily through on-site visits and interviews. Field work in each country took place over a period of about three to four weeks and involved one to two researchers working with local club leaders. USAID's Africa Bureau Office of Sustainable Development originally requested that each of the evaluations accomplish the following:

- determine how the program links community and schools;
- assess improvements in student learning;
- assess increased community knowledge and awareness; and
- assess activity impact on environmental conditions addressed.

The evaluations were qualitative in nature. Survey instruments were developed for students, teachers or club patrons, school principals, and parents or other members of the community. The investigations also included observations (of school facilities and of club meetings, for example) and a review of program materials. The evaluators spoke to some participants one-on-one, but in many cases discussions evolved naturally into group gatherings—particularly those with students and community members.

In each country, the evaluators selected sites they considered representative of the typical mix of areas in which a program operated. Recommendations by the sponsoring organizations helped to determine the selection of individual schools and clubs.

The short time period and small, purposeful samples precluded before-and-after measurements of changes in knowledge or behaviors as a result of these programs (whether among students or within the larger community). It is also important to note

that the goals of the programs in the three countries (and even from program to program in Tanzania) are distinct. Mindful of USAID's underlying purpose to identify practical lessons about what works, the evaluators probed the unique achievements of these varied school-based environmental education programs and identified factors that were crucial to their success.

2. MALI—The Basics of School-Community Linkages

Mali is one of the world's poorest countries. The average citizen survives on an annual income equivalent to just US \$200.⁴ Three-quarters of the land-locked country falls in the Saharan and Sahelian zones. Only about one quarter of the land is arable; only 5 percent is cultivated; and about one quarter is rangeland. Climate and environmental degradation are life-and-death matters for the population, 80 percent of whom depend on agriculture for their livelihood. Firewood supplies 90 percent of the country's energy. Although the south of the country still includes some dense forests, the current rate of deforestation will lead to their disappearance in 15 to 20 years.

Various social indicators mirror Mali's difficult economic state. Only 38 percent of young children (31 percent of girls) are enrolled in primary schools.⁵ The resources with which these institutions operate are predictably stark. This makes the launching of an official environmental education curriculum at this level all the more noteworthy. And in a context where communities have very limited sources of information and school teachers may be the most highly educated local spokespersons, the potential for wider impact of such a program is great.



The evaluator visited schools in Bamako, in the rural area near Sikasso, and in an area bordering the Dioforongo National Forest in Ségou.

REACHING CHILDREN, REACHING COMMUNITIES

The influence of school activities—and of very young children—on attitudes and behaviors in the family and the community are explicit objectives of the Training and Information Programme on the Environment (or TIPE). Mali is one of nine countries involved in this program through membership in the Inter-State Committee for the Fight Against Drought in the Sahel. TIPE is a 10-year effort that began in the early 1990s and is funded by the European Union.

In Mali, 320 public schools have adopted TIPE to date. This formal environmental education program is introduced in all elementary level grades. The fundamental goal of the approach is:

⁴UNDP. Human Development Report, 1999.

⁵UNDP. Human Development Report, 1999.

*...to instill in young people—and through them the entire population—attitudes, values, abilities, and skills, as well as an active and aware participatory behavior necessary for a rational management of the fragile resources of the Sahel, and in particular for finding solutions to the problems of drought and desertification.*⁶

Curriculum and training materials are produced by a cross-region pedagogical committee. A national pedagogical committee in each country makes appropriate adaptations. In Mali, a central level training task force includes experts from the National Pedagogical Institute and the National Directorate of Basic Education. During start-up training for area schools, the regional education director may also assist, along with basic education inspectors from the individual districts.

The framework for the program includes a range of print materials for both teachers and students and week-long orientation/training for all levels of the school system (supervisors, principals, teachers). Teachers learn how to use a class guide that includes technical content, how to translate this into learning objectives, and how to evaluate students. They are encouraged to adopt the TIPE materials (produced in French) to their own needs. Lesson plans focus on participatory approaches including problem solving, role playing, and various games and puzzles.

Because TIPE is introduced through the regular public school bureaucracy, follow up and in-service training is theoretically incorporated in the district's annual inspection visits. Every school is also expected to form its own pedagogical team to provide professional reinforcement and to train any new teachers.

This essentially top down program approach suits the Malian school system, which tends to be hierarchical. At the same time, a strong element of local and individual initiative livens the TIPE strategy. Children learn to analyze environmental problems in their neighborhoods, to create potential solutions, and to view themselves as messengers for responsible practices. A typical fifth grade lesson, for example, introduces facts about the role of trees in preventing desertification, and then has children working in groups to design messages on the subject. They illustrate their slogans with posters, which are evaluated by their peers, and finally displayed in the community.

Two key factors of the TIPE approach focus on community outreach *by the school institution*, however. Each school must devise an ecological project that students contribute to collectively under the leadership of the school administrator. The projects vary in scope and size, and range from the creation and care of orchards or tree nurseries, to the construction of erosion control measures on school grounds for demonstration purposes, to training in making fuel-efficient stoves.

The projects aim to take advantage of a TIPE site, or piece of land adjoining the school, which is shared in some fashion with the community. TIPE provides each school with basic materials to manage the site—such as fencing, shovels, buckets, and hoes. The school is also expected to invite the community to form a TIPE committee, so local delegates can participate in decisions and monitor site use. TIPE is thus not simply a curriculum, but a strategy for linking the school with its surrounding community.

⁶Inter-State Committee for the Fight Against Drought in the Sahel and The Institute of the Sahel, 1995.

SELECTION OF SITES, SCHOOLS, AND CONTROLS

In order to understand how TIPE is working in different contexts, the evaluators selected schools in three different parts of the country:

1) **Bamako**, the economic and political capital of Mali, is located in a valley along the banks of the Niger River. With a population of around 1.1 million, intense crowding and the concentration of numerous industrial complexes have led to serious environmental problems including pollution, a shortage of running water, and major sewage and garbage disposal problems.

2) **Ségou** is located 40 kilometers from the Dioforongo National Forest, a protected site known for its rare plant species. Unfortunately, a national highway passing through the forest has stimulated the sale of wood and charcoal for urban consumption.

3) **Sikasso** is a predominantly rural area in the south where livestock-raising and cotton production support the populace.

For purposes of comparison, the evaluators visited TIPE schools in these areas as well as non-TIPE



Pounding millet: The majority of Malians survive on subsistence agriculture.

public schools and community schools. Standard public schools, constituting 90 percent of Mali's elementary institutions, do not provide any materials or teacher training on environmental issues. Community schools (established by parent associations and NGOs in areas the Ministry of Education has not reached) can develop their own curricula and often do include a focus on the environment. For example, Save the Children has helped to establish over 400 community schools in Mali that integrate environmental subject matter into the elementary curriculum.

This assessment covered a total of 14 elementary schools in all three types of institutions. The schools visited served from 200-700 students. The evaluators interviewed students in grades three and five, as well as teachers, administrators, and parents. They made an effort to talk with equal numbers of boys and girls, and men and women in the community.

BAMAKO SCHOOLS

The apparent impact of TIPE in the Bamako area was evident from very basic questions about student knowledge and behaviors. The TIPE students interviewed understood the concepts of desertification—that cutting trees, for example, can lead to reduced rainfall and loss of livestock. They preferred propane gas to wood but knew how to build fuel-efficient stoves. Students in the non-TIPE schools said they prefer using wood in traditional kitchen stoves, and had the idea that deforested areas could be good for farming and construction.

TIPE students claimed that they knew how to maintain gardens, plant trees, construct various erosion-fighting barriers, and build fuel-efficient stoves. They had done some of these things with their parents, although class lessons did not explicitly suggest they do so.

The fact that a school was involved in the TIPE program, however, was usually evident from superficial observation. A TIPE school often had a nursery or an orchard, and was much more likely to be protected by shade. The TIPE schools kept trash cans in each classroom and students poured wastewater in gutters to avoid disease. Students in several of the non-TIPE schools dumped trash and waste indiscriminately.

Villagers referred to one principal as the “gardener principal” because of an area near the river he personally devoted to fruit trees. His school laid out two nurseries for vegetables and seedlings and got the village to establish a neighborhood follow up committee to help transplant them in public spaces. This created a demand in the community for both plants and advice. A neighborhood center asked the school to replant its courtyard. The director of a nearby health center also took plants from the nursery for his center.

Mutual benefit was the key to this school-community linkage. The school asked families to donate sheep and cow manure to fertilize its gardens. The principal also solicited help in digging trenches around the school to solve a wastewater problem.

All of these efforts additionally served as models for the community. A neighboring (non-TIPE) school gradually adopted many of these practices—planting trees, maintaining a garden, and basic sanitary measures. The gardener principal remarked that he lacked the skills for explaining his program, but felt that teaching by example was sufficient.

Personal leadership is obviously an important factor. This principal related his successes to three factors:

- setting up an example through concrete visible achievements in the school;

- soliciting the community to be involved; and
- disseminating information by keeping parents informed of their children’s activities and by speaking to groups.

He clearly had an approach to educating children that surpassed the results expected from any standardized training. Although students sometimes stole flowers planted in the TIPE beds, he viewed this as a sign the program was successful and pardoned the offenses.

SCHOOLS NEAR THE PROTECTED FOREST

An older TIPE school near the Dioforongo National Forest demonstrated this same power of example, although it had the barest resources. It had neither a wall and nor latrines. However, the school did have a garden enclosed by fencing supplied through TIPE, and each child had planted at least one tree on the grounds or in front of his or her own home. Over the course of almost 10 years, the grounds turned into a very wooded area, and the nursery moved to another site.

Influential community members worked with the project from its inception. Village delegates attended periodic meetings on the use of the TIPE site. As a result, the school developed an area to share with villagers—primarily women—interested in growing vegetables. The school well provided water for the plots. On its own share of the land, the school planted young trees, sold these to the villagers, and gave the proceeds to the gardeners.

The principal invited government water and forest officers to give talks on the care and pruning of trees. This partnership was very strategic because local people used the nearby national forest intensively. Rather than confronting some practices directly, the principal mentioned that he attempted

to “persuade through example.” A second TIPE school in the area adopted a more direct advocacy role about the environment. Indeed, a sign outside the institution a sign urged “School + People in the fight against desertification.” A garden encircling a fuel-efficient stove displayed the slogan, “Fuel-efficient stoves will bring an end to excessive cutting of trees. TIPE yearns for a green Sahel.”

The school conducted community outreach partly through demonstration and partly through awareness raising efforts. A theater group including both students and out-of-school youths presented sketches and songs about reforestation. Public campaigns focused on a drought in the north as an illustration of the dangers of deforestation. The school conducted training for the community in how to build fuel-efficient stoves, and several resource people now supply these to villagers.

The village TIPE committee met regularly. After each in-service training, the teachers also convened a meeting with the members to share information. An association of former women students also provided the village with regular updates about school activities.

For its part, the village provided the school with two hectares of land. Local women used half as a vegetable garden and the school used the rest as an experimental tree nursery. The village also worked with the school to convince a donor to fund installation of a solar pump, which now feeds six pools of water on the TIPE site, the school water tap, and other water spigots in the village, and is jointly managed by school and community.

RURAL SCHOOLS

Efforts to establish school-community linkages were not always smooth. A TIPE school visited near Sikasso found that



Children interviewed from the TIPE schools.

distrust lingered from a previous government rural development project carried out in the 1980s. This well-intended program to introduce children to practical skills (animal husbandry, agriculture, and small industry) backfired in some communities when officials pocketed the profits of students’ labor. Land contributed to the schools for these activities also found its way into the personal holdings of some school administrators.

The Sikasso school dealt with potential tension by associating itself with other trusted partners. It worked with a Catholic youth group and the agricultural services agent to replant trees at two village sites. The school also found a partner to install a solar pump, giving the community access to drinking water. Students worked with other villagers to keep the area surrounding the pump clean. Lastly, the school demonstrated how to construct fuel-efficient stoves.

In this southern part of Mali, the evaluators also visited three community schools established with Save the Children. Unlike the TIPE schools, these invite their community to participate in the process of curriculum design for pupils in the first three elementary grades. Students in one school learned about local plants and helped their parents keep records of the Village Association by taking notes on the different planting cycles. This school also developed a multi-purpose site for gardening that attracted the attention of the community.

Generally in these schools, the evaluators found that students had a good understanding of environmental issues, but that linking school projects to community activities was rare.

CONCLUSIONS

The TIPE program provides schools with an effective strategy for involving communities in environmental education and activities. Training, curriculum materials, and other resources are clearly important ingredients. In these schools, the provision of wire fencing, wheelbarrows, hoes, and shovels was as important as the provision of books. However, the leadership of a single dedicated administrator seemed to make the critical difference between a weak community link and a strong one.

The choice of a collective TIPE project, the negotiation of a joint piece of land, and formation of a community follow-up committee require effective communication with influential community members. In a country like Mali, a curriculum requiring this kind of interaction can succeed only if supported by the official educational hierarchy. A few teachers, no matter how passionate they might be, cannot spark such collaboration alone and are therefore less likely to try. For example, one school with experienced TIPE teachers but a skeptical director was without a TIPE project.

The principals interviewed saw themselves as teaching primarily by example. Their school projects were visible models to the community as well as to their students. Perhaps equally important, however, was the mutuality of these linkages. Schools had something to offer the villagers, but many schools also asked for help in return—whether manure for garden plots or money for books.

Some of these schools also engaged enthusiastically in public advocacy. Students participated in the ecological projects and also in various public campaigns through theater, poetry, and song. All of these activities, in combination with classroom study, contributed to experiential learning, another key factor in TIPE success.

One final age-old lesson from TIPE is that acceptance of any innovation takes time. Even the growth of a shady school yard or the benefits of a tree nursery become visible only with the passing of seasons. TIPE is a donor funded program whose initial 10 years is almost complete. Its next chapter will be an important one as well.

3. TANZANIA—Three Youth Clubs

People around the world are familiar with the beauty and biodiversity of Tanzania, whether they can name the country of these natural treasures or not. The highest point in Africa is located in Tanzania: Mt. Kilimanjaro at 19,340 feet. Tanzania encompasses parts of five different bio-geographical areas including savannah parks and eastern forests; extensive wetlands, coral reefs, and mangrove estuaries; the afro-montane habitats of Mts. Kilimanjaro and Meru; and both soda and freshwater lakes.

One of the world's largest remaining elephant populations finds its home on the Serengeti plain, along with numerous other endangered animals such as the black rhino, the African wild dog, the chimpanzee, and the cheetah. Tanzania's reserves cover 14 percent of the country.

At the same time, Tanzania is a place of severe deprivation. In 1993, the average per capita income was US \$580, with the poorest 20 percent of the population surviving on only US \$70.⁷ The country's natural resources are increasingly threatened by competing demands and economic pressures leading to poaching of both wood and wildlife. Agriculture provides the backbone of the economy, although tourism has gradually become a significant source of foreign exchange along with mining and the service industry. About 84 percent of workers are involved in farming, fishing, or forestry. Pressures of rapid population growth are compounded by a continuing stream of refugees—250,000 from Burundi in 1993; 500,000 from Rwanda the next year; and 70,000 from the

DRC (formerly Zaire) in 1996. Today, Tanzania is home to about 570,000 refugees.⁸

As in all poor countries, health and education services in Tanzania are dismal. Enrollment in primary schools dropped from 93 percent in 1980 to 74 percent in 1995. Only 15 percent of elementary students continue on to secondary school, with girls' participation even lower.

NATIONAL CALL FOR EDUCATION

The Government of Tanzania has recognized the need for improved management of natural resources as a precondition of sustainable development. The Tanzania National Environmental Action Plan (1994) called for a public awareness program as part of this effort. Studies conducted for the plan identified six major threats to Tanzania's natural resources:

- loss of wildlife habitats and thus biodiversity,
- deforestation,
- land degradation,
- deterioration of aquatic systems,
- lack of accessible, clean water, and
- pollution.

The need for individual and community participation in these issues was echoed in the National Environmental Policy (1997), which promotes both formal and nonformal education to reach a range of stakeholders.

Even before these official acts, however, government and nongovernmental organizations

⁷UNDP. Human Development Report, 1999.

⁸UNDP. Human Development Report, 1999.

were attempting to educate the public about these potentially disastrous environmental trends. Many international groups also took an interest in preserving Tanzania's environment. The missions of these groups have varied greatly. This study investigated efforts by three different groups that resulted in the formation of youth clubs. The *Malihai Clubs* of Tanzania first emerged in 1985. Clubs associated with the *Wildlife Conservation Society of Tanzania* have been active since the early 1990s. *Roots and Shoots* appeared in 1991.

All three clubs have won respect. However, their basic purposes and much about their structures and resources are quite different. Understanding the effectiveness of these programs requires examining the various sponsors, their aspirations for their members and surrounding communities, and the environments they all share.

MALIHAI CLUBS OF TANZANIA

The Public Relations Department of Tanzania National Parks founded the oldest environmental youth clubs in the country about 15 years ago. Since their beginning, the Malihai clubs have also received funding from the nonprofit Tanzania Wildlife Protection Fund and an array of international organizations, such as World Wildlife Federation, the African Wildlife Foundation, the Global Environmental Facility, and DANIDA.

This mix of government and nongovernmental support has served the clubs well over the years. Today about 270 Malihai clubs are active in secondary schools. In terms of sheer numbers, Malihai's reach is almost 10 times that of the other two youth clubs studied here, and is continuing to expand.

The headquarters of Malihai (which means living wealth) is located in Arusha, less than 100

kilometers from Mt. Kilimanjaro. Most of the clubs are in the northern zone from there to Tanga (on the coast), and in the lake zone (embracing Chinyanga, Kagera, and Mara). The traditional focus of Malihai has been on forestry and soil conservation, reflecting the clubs' origins. However, the educational mission is broad and humanistic. Malihai's objectives are to:

- *Inspire and educate* the people of Tanzania, especially the youth, about the environment in totality;
- *Increase awareness and understanding* of the economic, cultural, scientific, and aesthetic values of our living natural resources; and
- *Promote a spirit of conservation* and wise use of land, so that people can live in harmony and benefit from one another for centuries to come.

Local Initiative— Strong Central Support

The backbones of the Malihai clubs are its patrons—or volunteer club leaders. Not surprisingly, GreenCOM evaluators found that the character of a club and its outreach activities always reflected the experience and commitment of its leader. At the same time, leadership encourages you members to take an active part in deciding their clubs' plans. The head office provides an annual planning form so that members can work together to agree on their programs. The level of member enthusiasm and initiative is impressive.

This strong local initiative works partly because of committed central support. All of the clubs interviewed mentioned the significant help they receive from staff coordinators.

Malihai's head office is small but well supported and its budget has grown in recent years. The director, a publications unit, and an outreach program are housed in Arusha. A small secretariat operates in the Lake Zone. The government pays staff salaries through the Wildlife Department.

When a club is formed, staff coordinators frequently visit from headquarters to help launch activities. Later they visit off and on to share information, show videos, distribute booklets and posters, and help recruit members. Headquarters makes a major effort to support club leaders through training workshops. Periodic seminars encourage relationships between clubs by providing opportunities for students to share lessons learned and plans. Clubs can also submit applications for financial assistance—for field trips, for example. The head office often helps with fuel and accommodation costs.

One school was interested in starting a micro-forestry project. Although Malihai lacked the necessary funds, headquarters helped the club develop a proposal to win outside support.

The clubs also put great value on the print and video materials produced by Malihai. Funding from a major project has allowed the organization to professionalize its in-house production. All members receive the well-illustrated *Malihai News*. The Norwegian Agency for Development Cooperation (NORAD) funds the 16-page quarterly, produced in both English and Kiswahili. It features club, national, and international news, as well as a section on networking, ideas for projects and activities, and games and riddles.

For the last two years the Arusha office has also had its own video unit. Malihai has produced about 15 videos on different environmental subjects that are very popular with clubs and their local communities.

Contributions to School and Community

GreenCOM evaluators visited four Malihai clubs in existence from 2 to 15 years. Membership in these secondary school clubs ranged from 45 to 282 students. Many unofficial members also

participated, however. Club leaders, often with an assistant, held meetings anywhere from once a week to once a month.

Project activities selected by the club members and their leaders varied from visits to national parks or factories, to community clean-up activities, to gardening and tree planting. All of the clubs visited were involved in improving their immediate school surroundings. In some instances, students had cleared land around the school in order to plant trees and shrubs. Every administrator interviewed had high regard for the club in his school. One was keen for the group to sell garden produce and noted this could create revenue for the school.

Activities involving the wider community were less common, and mostly initiated by Malihai headquarters. For example, headquarters encouraged eight clubs around Arusha to participate in a project funded by the Global Environment Fund (GEF). The project selected 20 farmers to receive seedlings for their farms. The clubs prepared the seedlings in their nurseries and then helped plant them. One farmer helped by the students said the project created great interest among his neighbors, who are anxious for more seedlings, and glad to pay for them.

Malihai encourages youth to take advocacy roles in their communities. The students interviewed were well informed and often enthusiastic about different issues; clippings and posters covered their classrooms, and they aspired to write newspaper articles and start their own publications. One school in Arusha had applied for the right to convert a government-owned dump along the Themri River into a model of responsible land use by planting trees to curtail soil erosion.

Club leaders said their strategy is to affect the community at large by first developing informed individuals. Thus, they believe the clubs' greatest

impact will derive from a long term process of educating youth to become community leaders. In the shorter term, students reported changing their own families' behaviors in different ways. For instance, the farmer mentioned above who increased the amount of his property devoted to trees said his own children, who were Malihai members, persuaded him to take this initiative.

Expansion to Teacher Training Institutes

Malihai has a strong vision for its clubs in the future and is already training the next generation of club leaders. Teachers-in-training are an enthusiastic, key group that Malihai encourages to form new clubs when they begin to teach.

The Community Development Training Institute in Arusha has sponsored a Malihai club for 15 years. It now has 95 members who meet once a month. The students say they have very little time but seem to have accomplished a great deal. They give talks in nearby primary schools and perform dramas on environmental topics. The club has built a nursery with its own water storage facility, which serves both the school and adjacent areas. The club has also put together a resource center (of somewhat outdated materials) that is open to the teacher training college.

The evaluators also visited Monduli Teachers' Training College, which offers a two-year program leading to certification in the secondary school system. The Malihai club (with 61 members) grew out of the scouting movement and a campus reforestation project. Political leaders challenged the students to demonstrate the importance of trees in preventing soil erosion. The club built a nursery and provides seedlings to neighboring schools. They have a choir that performs in the area and carries environmental messages to the community. They also mobilized the institute for special events such as Women and Environment Day.

Trainees at these institutes had a strong sense of responsibility to return to their communities and work for change. The interviewers met several teachers who were members of Malihai clubs while in training and are now club patrons. Malihai's effort to link different levels of the educational system through a simple extension of the club process evidently is working.

THE WILDLIFE CONSERVATION SOCIETY OF TANZANIA

The Wildlife Conservation Society of Tanzania (WCST) is a nonprofit membership organization that carries out numerous conservation projects with funding from different donors. WCST's goal is "the preservation of the natural flora, fauna, and environment of Tanzania for the benefit of mankind." Projects relate almost entirely to forest conservation and to changing public attitudes and practices in order to preserve these areas.

WCST started in 1988. Two years later the society established its first school clubs. At present, there are 31 WCST clubs in Tanzania, primarily in elementary schools, but a few at the secondary level.

Each youth club begins as an offshoot of a local WCST conservation project. This approach provides focus and some stability to nascent clubs.

Partnership with a project means a club benefits from projects that adults in the community are discussing and acting on. It also means regular support from a WCST field office and good communication with headquarters. It creates a channel for technical expertise to reach the schools (via the local forester, for example) and also provides motivation.

WCST also encourages the establishment of village environment committees in their project areas to assure good communication with the community. Conservation efforts can be a focal point for tension—particularly in poor areas where changes in forest utilization involve economic trade-offs. Youth clubs can help the work of these village committees.

Organizational Support

An ongoing conservation project initially funds a school club as part of the project's budget. For example, a forest project in Kisarawe District, first supported by the GEF, and now by the European Union, funds a number of clubs. When a project ends, however, clubs receive support from WCST operational funds. By this time, a club is presumed to be well established.

A full-time education officer at WCST's headquarters in Dar es Salaam has responsibility for the school program. In addition, two field officers are based at Kisarawe and on the coast, where there are concentrations of clubs. WCST supports the groups through regular site visits, training workshops for teachers, seminars and study tours, materials, and video shows for the schools and their communities. WCST also sponsors essay competitions (for secondary schools) and contests for primary school students on improving their school environment.

WCST's regular link to its clubs is the society's quarterly newsletter, *Miombo* (the local name for the *Brachystegia* tree). According to the evaluators, *Miombo* has something for everybody yet fully benefits the target age group. Articles are of very high quality, written by scientists, the WCST staff, and in some cases by the students themselves (especially the children's pages and a networking page). Since *Miombo* goes to all members, The Royal Netherlands Embassy funds a supplement in both English and Kiswahili. *Miombo* includes



Volunteer leaders in an elementary school discuss with children the traditional uses of local plants.

stories, poetry, reports of club activities, and information about conservation news around the world.

WCST also produces learning/teaching materials for teachers, and a variety of posters, pamphlets, and calendars, which all the visited schools prominently displayed. At one time, WCST also produced a radio program. However, all of these materials depend on external funding, so availability can be uncertain.

To provide support for its clubs, WCST looks for ways to collaborate with other organizations. This has led to joint sponsorship of publications and seminars. They recently conducted a study tour in collaboration with Malihai Clubs.

Study and Service

The evaluators visited three elementary schools in a poor, rural area outside of Dar es Salaam. These clubs were only a year or two old. Membership ranged from about 15 to 50 students. The fees were a problem for some families—in one school just a third of the children paid dues.

In keeping with WCST's purpose, all of the clubs focused on protection of the forest and were deeply involved in studying local plants. Students in one

club had gathered extensive information from discussions with village elders on the traditional uses of plants. Another club had experimented to find out which plants were suitable for improving the grounds of their schoolyard. Children planted species that helped to fight soil erosion and rehabilitate a gully. In this process, the club collected seeds, worked in a nursery, and learned to make compost.

For some students, club activities entailed a true study of ecology. Classrooms brimmed with data the children gathered. More than some other groups, WCST clubs tend to focus on subjects in depth and over time, due to their connections to ongoing conservation activities.

Although these children were quite young, their efforts were often visible to the community. One village environment committee working with WCST on a project to halt deforestation had observed the children's work and was interested in collaborating with these youths on tree planting, drama productions, and discussions.

Club leaders recognize it is difficult for these very young children to take some messages home because of the current economic realities faced by their parents. Many of the families, for example, depend upon charcoal production for their livelihood. Leaders saw the main benefits of their work coming from increased community understanding and advocacy, which over time would result in behavior protective of the environment.

ROOTS AND SHOOTS— BRAIN CHILD OF JANE GOODALL

The name Roots and Shoots not only reflects the environmental focus of this group of youth clubs, but also a commitment to youth themselves and the idea that

they too require nourishment and encouragement. The inspirational side of Roots and Shoots, and its inclusive approach as a movement for youth as well as on behalf of global causes, are key aspects of its mission.

Roots and Shoots sprang from a 1991 discussion between Jane Goodall and several youth on her back porch. They talked about the poor treatment of animals and the need for young people to be involved. The students went back to their schools and founded conservation clubs. From this simple beginning the idea spread and has been adopted as an integral part of the global activities of the Jane Goodall Institute (JGI).

The nonprofit JGI is active in 40 countries. To date 85 youth clubs have evolved—mostly in Tanzania and the United States. Tanzania is currently home to about 30 Roots and Shoots clubs, operating in both elementary and secondary schools. The clubs are located primarily in urban areas around Dar es Salaam, Kigoma, and Tabora.

The stated goals of Roots and Shoots go beyond the protection of wildlife, or even of conservation per se, and embrace humanistic ideals. The clubs' objectives are to:

- *foster respect and compassion* for all living things;
- *promote understanding* of all cultures and beliefs; and
- *inspire each individual to take action* to make the world a better place for animals, the environment, and the human community.

International and Local Support

A small administrative unit at JGI headquarters in Dar es Salaam houses two volunteer coordinators from the United States and two paid local coordinators—one for primary school clubs and one for secondary schools—both recent school alumni. In interviews with club leaders,

GreenCOM evaluators witnessed the contagious zeal these young coordinators bring to their liaison work as they organize events with individual clubs and encourage sponsorship by community groups.

However, maintaining strong links with local clubs without benefit of government networks (as with Malihai) or ongoing conservation projects (as with WCST) is challenging for this small staff. The JGI is a membership-based organization, drawing almost entirely on international funding, including a grant from Disney Corporation and assistance from USAID. Providing support to the clubs as the program expands is a constant challenge.

To help meet this challenge, a comprehensive manual is in process, entitled *Making Connections: A Roots and Shoots Guide to Empowering Students Through Environmental and Humanitarian Action Project*. The manual provides guidance on forming and operating clubs, as well as fund raising.

The Roots and Shoots club approach varies somewhat at the primary and secondary levels. In primary schools, the club patron is often an older student. He or she must serve as the contact point for both the parent organization and the school,



Caring for nurseries and sharing or selling the seedlings are common activities in Roots and Shoots clubs.

and also provides guidance in terms of program ideas and implementation. In secondary schools, the volunteer patron has only a supportive role. The students themselves form a 10-person managerial committee that determines club direction and activities.

Individual Growth and Community Outreach

The evaluators visited four secondary schools and two primary schools in the neighborhoods of Dar es Salaam. Club membership in the secondary schools ranged anywhere from 14 to 200. In the primary schools, clubs claimed 40 and 200 members, respectively. The absence of dues or strict membership regulations makes such a wide variation fairly typical. Sometimes entire schools consider themselves Roots and Shoots clubs.

A further aspect of the clubs' conscious effort to involve as many youth as possible is the broad mandate for activities. The organization emphasizes community service, understanding other cultures and groups, and developing self-respect and confidence. One way of attracting widespread participation and building group identity is through team sports, and this was a popular part of Roots and Shoots—reflecting the multiple roles a club plays in student life.

The stated goals of Roots and Shoots include bringing about concrete change through care of the environment. As with the Malihai and WCST clubs, students found this easiest to tackle closest to home. All the of clubs visited were active in litter clean-up and in planting trees on their school grounds and often in the local area. One club maintained a fish pond and another organized an anti-litter campaign at a local market. One principal was inspired to start a club in his school because he was so impressed by the clean-up effort at a local hospital organized by a club at a primary school where he once taught.

Though establishing school-community links is not an explicit part of the Roots and Shoots mandate, the evaluators ran into a few examples. One secondary school student saw how tree planting could provide both a community benefit and bring income to people in his area. He discussed the idea with his friends and they started a club. They began a nursery with 100 trees, and expanded to about 1,000 seedlings. Today the club provides trees to neighboring schools and clubs for free, and also supplies the community with trees for a small fee.

Some students interviewed were very interested in disseminating environmental messages through essays, drama, music, and artwork. Secondary schools organized debates and dramas as a form of community outreach. Both students and leaders were eager to play a stronger role in this kind of advocacy, and spoke of cooperating with other clubs to organize concerts and press releases.

Clubs were very aware of the environmental problems right around them. At one secondary school, members were concerned about water pollution in a nearby river. At another school, they had studied the pollution from an adjacent factory complex.

Both students and teachers were cautious about the level of clubs influence on public practices. Roots and Shoots clubs lack the local project connections and governmental mandates that other youth clubs enjoy, and thus it is more difficult for them to influence communities. However, Roots and Shoots clubs are still quite young and early impacts on youth and adults is encouraging.

CONCLUSIONS

GreenCOM's evaluators identified a number of common factors of success in reviewing these three youth programs.

The first of these was "clarity and focus of goals and objectives." All of the clubs emerged out of dedicated environmental movements or government mandates, and youth involvement was initiated with clear commitment to achieving critical ends. The divergent nature of these ends, however, also accounted for the differing club profiles and lessons learned.

All of the clubs espouse a strong participatory approach that provides opportunities for learning and initiative unavailable to students in the structured Tanzanian classroom. All organizations channel youth's energy and idealism into concern and initiative for the environment that promises to bear full fruit in adulthood. The potential of children as outreach agents is also clear.

Students in all three club organizations believed strongly that they were effective in raising community awareness and in changing the behaviors of those around them. They gave specific examples of how they had convinced family members to make changes (to plant trees, stop littering, recycle, save energy, and so forth). Group activities in which they modeled environmentally friendly behaviors and demonstrated their impact (creating nurseries and distributing seedlings, running clean-up campaigns) also drew in the broader community and raised public recognition of their objectives.

Given that these clubs work with volunteers and individual student groups—rather than school administrations as does the TIPE program in Mali—it is predictable that formalized school-community linkages emerged only rarely in this study. WCST's local projects and their connections to the village environment committees offered the strongest base for such partnerships. Central rather than local leadership usually initiated these connections, thus highlighting the value of headquarters support.

Roots and Shoots was something of an anomaly in this study, as an international movement committed to personal development and humanistic (as well as environmental) stewardship. Participants were free to pursue their own interests. Such decentralized objectives are more difficult to monitor than most. At the same time, practical learning and the sense of making a difference in the community were highly motivating to the students.

The evaluators did find that the more experienced club leaders were most effective in working with students and establishing links with local communities, including finding local sponsors for club activities.

Malihai's link to the government and its well-known, credible profile allows for helpful connections with other government departments. Their program's shared objectives with the national agenda, and their high profile board, also open the door to international funding. Malihai's expansion to teacher training institutes also helps to expand and sustain the clubs over time.

Attitudes toward growth and sustainability varied among these clubs, though funding is clearly a big concern for all three. Often the desire to expand outstrips an organization's managerial and financial capacity. The WCST, by trying to link clubs to established projects, best ensures sustainability.

4. ZAMBIA—Legacy of the Chongololo Clubs

Zambia is a land-locked country in South Central Africa consisting mainly of high plateau covered by bush and savannah. At one time this area was home to large herds of elephant and black rhinoceros, among other species. Although Zambia is a relatively large country with a small population (9.5 million people and 750,000 square kilometers), the nation is plagued by a fast growing population and high unemployment. Over half of Zambians live in cities—mostly in the industrialized Copperbelt Province bordering the Democratic Republic of Congo (previously Zaire). The economy has been sustained for years by copper exports, but falling prices have had catastrophic effects. Today, per capita income (about US \$290 per year) is lower than when the country became independent in 1964.⁹

Industrialization and poverty have led to over exploitation of resources and serious environmental degradation. Pollution, deforestation, destruction of wildlife habitats, and widespread commercial poaching are all concerns.

As far back as the 1970s, when vast herds of game still roamed these regions, the government attempted to protect its natural resources by establishing National Parks and Game Management Areas (GMAs) over about one third of the land. However, poaching and destruction of forests have continued even in these areas. In the mid-1980s an Anti-Corruption Commission formed to track down the middlemen involved in illegal wildlife traffic. These multiple sources reinforced conservation messages and helped to greatly reduce poaching in target areas.

⁹UNDP. Human Development Report, 1999.



Chongololo Clubs were visited in the areas around Mfuwe, Choma, Kitwe, and Lusaka.

The government has also recognized that it must gradually return custodianship of the preserves to communities. A recent program is helping establish local committees to manage the lands.

CHANGING COMMUNITY NORMS WITH HELP FROM CHILDREN

Years before some of these major efforts (and considerably before Zambia's adoption of National and Regional Environmental Action Plans in 1994), another national conservation program focused on changing community attitudes toward conservation. The program aimed originally to overcome local resistance to the development of national parks and reduce poaching in protected areas by working with very young children.

Zambia's Chongololo Clubs started in elementary schools in the early 1970s. The National Parks Department initially joined with the Wildlife and

Environmental Conservation Society of Zambia (WECSZ) to offer funding and expertise, but today the nonprofit WECSZ entirely manages the program, raising its own funds and working in partnership with other groups. After almost 30 years, the Chongololo Clubs have become one of the largest environmental youth programs in the world.

The long history of these clubs and their connection with a national conservation mandate have given them solid footing in both public and private schools. Their traditional focus on preserving forest areas and the study of local plants and animals projects a clear identity. However, as the clubs attempt to expand throughout Zambia—and to different grade levels—this distinct mission is at times a strength as well as a limitation. In fact, the clubs are beginning to address broader ecological issues.

From a Club to a Movement

The Chongololo Clubs (or CC) constitute a presence in nearly the entire country. GreenCOM's evaluators found it hard to determine exactly how many clubs exist. In 1998, the national office reported that 629 clubs had registered with them, but assumed many more were active. In the areas visited for this study, 7 out of 10 schools sponsored a club. Most schools without a club wanted the program's high profile. Only one school was unfamiliar with the Chongololo concept.

WECSZ originally designed the program for upper elementary students (grades 4-7). In Zambia 72 percent of children enroll in elementary schools (including 71 percent of girls). However, only 42 percent enter secondary schools (a mere 35 percent of girls).¹⁰ So the early years are particularly crucial. The program's primary goal is still to reach

a very large group of students at this critical stage in their development.

Since the 1980s, the sponsors have also worked to encourage formation of clubs in secondary schools and teacher training institutes. More and more, CC alumni are turning into second generation leaders. The Chongololo Clubs therefore offer a very interesting study in the growth—and sustainability—of a conservation movement.

Supporting a Nationwide Network

The Chongololo network is coordinated from the WECSZ headquarters in Lusaka and several branch offices. Volunteers lead the individual clubs. Sometimes, depending upon the support of a particular school administration, a teacher may lead a club.

Organizational support for this grassroots operation has varied over the program's long history. However, it has basically consisted of three components.

Materials. One of the strengths of the program is its print materials. A monthly magazine in English serves as a conservation curriculum for the original target grades (4-7). Mr. Chongololo, a millipede who stars in the magazine, is a renowned environmentalist. His adventures are chronicled in a regular cartoon feature. Other sections offer information about Zambian plants, insects, birds, mammals, their habitats, and the functioning of ecosystems. Suggestions for club activities are also included.

Once a club registers its membership list with the head office (along with a nominal fee), it begins to receive magazines and a teacher's guide on a monthly basis. These mailings continue for a complete four-year cycle.

¹⁰UNDP. Human Development Report, 1999.

Since 1991, the World Wildlife Fund has helped extend this program to grades 8 and 9. Mr. Chimpembele, a rhinoceros, gears his stories to middle school students. This publication is also accompanied by a teacher's guide, with background information and ideas for activities.

Given the dearth of instructional materials available in the public education system, these magazines have found their way into standard classroom activities as well. The evaluators found that Chongololo materials are often used in science classes for their technical content and in English classes for reading comprehension. Chongololo Club staff have, in fact, worked with the Ministry of Education to explicitly tell teachers which magazines may serve to teach components of the national curriculum.

Previously the Ministry of Education paid for postage, but financial pressures have limited distribution of these materials. Direct mailing is often curtailed to save money, and batches of magazines are delivered to clubs when branch representatives can make personal visits. A lack of funds has also restricted publication of the organization's newsletter, which otherwise is a valuable networking channel for club leaders and branch offices.



School children in many parts of Zambia have the barest resources.

The Chongololo Clubs of the Air. Several years after the club's start-up, a series of radio programs evolved to extend the club's reach and reinforce its messages. A full slate of weekly programs builds on the same fundamental elements as the magazine: 1) membership in a club; 2) a focus on learning about the plants and animals of Zambia; and 3) the adventures of Mr. Chongololo. Listeners are invited to join the Chongololo Club of the Air by writing in to the WECSZ. CC of the Air also targets students in secondary schools, but appeals to an even wider audience. In 1998, WECSZ reported that 40,920 people, including adults, considered themselves members.

Training/Leadership Workshops. Leadership training for the local volunteers is crucial to building their knowledge of the environment and teaching skills. WECSZ established a network of teacher workshops and trainings in the clubs' early years. However, since the mid-1980s, lack of funds has severely curtailed these programs. In the regions visited by the evaluators, branch-level initiatives provided training opportunities in two of the four sites. In Kitwe, the WECSZ sponsors conservation education during regular teacher training programs. In Choma, some workshops occurred for area club leaders. The national office also identified a few key leaders and supported their training at environmental education centers outside the country.

VISITS TO FOUR SITES

The evaluators visited Chongololo Clubs in four representative areas of the country. These were Mfuwe (adjacent to South Luangwa National Park), Choma (a rural and largely agricultural area), Kitwe (a major city located in the northern Copperbelt), and Lusaka (the nation's capital and its largest urban center). Interviews were conducted with club leaders, students, and members of the community.

Mfuwe

The Lupande Game Management Area (GMA) near Mfuwe is one of Zambia's premier wildlife areas. This region is typical of the sites where the earliest Chongololo Clubs began. A number of tourist lodges have been established over the past 30 years, and hunting concessions operate within the GMA. The lodges are keen to encourage conservation education. Many are actively involved in local community development, particularly through sponsorship of school clubs.

The Luangwa Integrated Resource Development Project, a donor-sponsored program, has also operated in the valley for many years. It supports national park development and also has provided some help to the CCs.

The evaluators visited seven school clubs, three of which have long-standing links with lodge operations. All of the clubs focused on the upper elementary grades, but two had extended their membership to grades 1 and 2. Membership ranged from 12 to 35 youths. The students interviewed were knowledgeable and forthcoming. They particularly expressed strong personal connections to wildlife.

Many of the club leaders in this area had participated in CCs during elementary school and were all highly motivated. At the same time, these leaders were also sensitive to community concerns. Although the students indicated their parents were in agreement with their participation in the CCs, some club leaders mentioned tension within the community. When the evaluators interviewed parents and other local people, they also found some reluctance to embrace CC views and attitudes, especially when they were faced with economic trade-offs.

The Mfuwe clubs were very active. Whenever they had the opportunity, they participated in game drives sponsored by the local lodges. They also carried out field studies on local plant and animal species; planted trees in the schoolyard and nearby areas to protect the environment, and earn income for their clubs; and performed in drama programs about local issues.

Conservation advocacy is a common theme in club activities. The special role that even very young children can play was illustrated by a drama that one club performed: A young girl comes home from school and tells her parents she is learning from her club that animal poaching is harmful. Her parents are furious and are ready to go to the school and complain. A friend intervenes, however, and invites them to a meeting where a speaker explains that conservation can also bring benefits to the community. The father proclaims he will no longer kill animals in the park.

Exposure to CC of the Air was mixed in this area. Many of the club members, as well as the leaders, said they had picked up ideas from the radio for discussion. Others lacked access to radios or found the signal too weak. Some parents of club members mentioned they had also listened to the programs and considered them an important source of information.

Clubs in this area clearly operated in the way WECSZ originally envisioned. Proximity to the parks and partnerships with the lodges provided vital links for the students, and through them, their families.

Choma

The area surrounding Choma is largely agricultural. Chongololo Clubs here have no access to parks, tourist lodges, or even much wildlife, unless they can find funds for field trips. However, women's conservation groups abound in this

region and provide an opportunity for partnerships. The Choma Environmental Conservation Centre is conducting a major effort to support this cooperation.

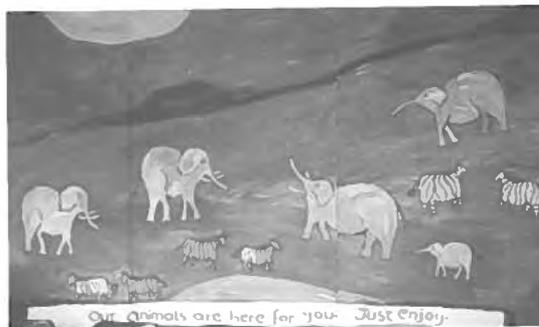
Such partnerships had an obvious influence upon the character of the clubs. The support available to clubs in the town—and relative deprivation experienced by clubs in the rural areas—greatly affected club accomplishments.

The evaluators visited seven schools that sponsor Chongololo Clubs. Membership ranged from about 20 to 50 students. Some clubs included even younger members, and one school sponsored a junior club. All but one of these groups was less than five years old.

Those clubs with experienced leaders tended to make more links with local organizations that could provide sponsorship or ideas for activities. In the remote rural areas, connections with women's associations and, in one case, the Forestry Department, supported agricultural projects. One club was able to build a nursery and greenhouse and planted 307 trees, which generated some income for club activities. Tree planting, vegetable gardening, and clean-up projects (such as digging rubbish pits) were common.

Groups in the town engaged in a much wider range of projects. They built fish ponds, visited wildlife areas in Livingstone, carried out field studies, and went on overnight camping trips. Students in town also had access to CC of the Air and said the programs gave them ideas for activities.

In general, the clubs in the remoter areas felt very constrained by a lack of money for transportation, by sporadic delivery of the CC magazines, and by isolation from other clubs. Leaders expressed a desperate need for both training and materials.



A Chongololo Club mural.

At the same time, students and school administrators remained enthusiastic about the basic mission of these clubs. For example, the evaluator observed that even in a remote area, a school canceled classes to enable a club to present a drama about conservation for community leaders.

Kitwe

Clubs in and around Kitwe illustrated even more strongly the need for clubs to engage in relevant activities to motivate their members. Kitwe itself is an urban center of about 472,000 people situated in the Copperbelt. Copperbelt communities have a very different economic base from those situated near game preserves and have very different environmental problems.

The evaluators were only able to visit two schools, but the clubs were quite large: 55 members in one school and 135 in the other. Students and leaders were well aware of environmental problems in their area—especially the link between air and water pollution, smog, litter, and disease. However, the issues they mentioned tended to be quite different from those covered in the CC materials, even though the clubs used the CC magazine in their classroom activities.

Nature study lessons and quizzes were interesting to the young students. They also were extremely keen to go on field trips to see wildlife, though cost was a constraint. Most of their activities focused on

the school environment with members involved in schoolyard improvement projects, tree nurseries, and fish farming to bring in funds for the club.

Leaders reported that their clubs initially got little support from the community. They started the tree planting project in order to develop the CC profile.

Lusaka

Lusaka, the capital of Zambia, has a population of around 900,000. The evaluators visited five schools with clubs claiming up to about 30 members. Several of the club leaders had been CC members in their youth, as had a number of the parents interviewed.

As in Kitwe, students and leaders alike expressed concerns about pollution and other drawbacks of industry and urban life. And like the Kitwe clubs, they felt a need for materials that addressed the issues faced by their communities. They also yearned for outings to see for themselves the flora and fauna described in the CC magazines.

Their community projects included picking up litter, planting trees, and gardening. Club leaders mentioned the lack of support from other environmental organizations as a difficulty. They were also anxious for more training.

Many parents said that CC activities gave rise to discussions at home about environmental issues. They were well informed about the environment, and knew that drought and the potential extinction of certain animals were major national problems. They too, however, identified local problems such as hazardous waste and illegal quarrying as their greatest concerns. The solutions they proposed centered on changes in government policies and enforcing regulations. Individual responsibility to the environment meant raising public awareness of these issues—rather than changing personal practices, such as killing protected animals.

CONCLUSIONS

Zambia's Chongololo Clubs have established a national profile over the course of their nearly 30-year history. Clubs have expanded across the country despite an original mandate—protection of national parks—that has more immediate relevance to some communities than to others. The natural appeal to small children of wild animals and forest life—even if they can only imagine this world—may be one of the simple reasons for this success. CC has also tried to broaden its ecological messages to encompass urban as well as rural communities.

The powerful basic ingredients of the Chongololo program explain much about why these clubs have thrived: a history of government and nongovernment backing; partnerships with major conservation partners; professional materials in an information-hungry context; the added reach of radio; past leadership training; and a growing contingent of alumni who are ready to pass on their enthusiasm to the next generation of members. The wide public recognition of the Chongololo Clubs assures their credibility with school systems and individual communities, and also with international donors.

The difficulties faced by the Chongololo program are also instructive. Maintaining a financial base for an expanding program is always problematic. Leaders interviewed throughout the country were desperate for more training. Yet funding for this critical element has been lacking despite the program's prominence.

Every educational medium presents challenges. Print materials reached areas near branch offices with regularity, but were scarce in more remote areas. The technical content of the magazines and the English language presented difficulties for the

younger students. A supplement for the junior clubs now being formed would be cost prohibitive, however. Lack of funds also limits the powerful potential of the CC of the Air. Additional funding would allow for new radio programs or perhaps taping of broadcasts for those too far from the signal.

Questions about growth and expansion may be the most interesting ones to ponder in connection with the Chongololo Clubs. A restructuring program is going on now to strengthen the national and branch offices and will then fund a full-time education officer. These changes are crucial given the national reach and impact of the program, which in many instances serves as the sole channel for a generation of Zambians to become advocates on behalf of their environment.

What is the proper balance between national and local emphasis in eco-clubs such as these? At what point do students in Kitwe and Lusaka, for example, require a different curriculum for their dedication to conservation to be well served, and their community projects pertinent? How can this network of clubs muster the resources necessary to respond effectively to such issues? Though these questions are thorny, CC has much to be proud of, and a promising future.

5. *Reflections on What Makes a Difference in Successful EE Programs*

BENEFITTING FROM THE SCHOOL AS A BASE

Although all of the environmental education programs described in this document are based in schools, this is not the only option for youth-centered efforts. Given the low primary enrollment in many countries, and the even more dismal situation in secondary schools, it is important to look at the pros and cons.

Questions of Reach

In Mali, only 23 percent of children and only 17 percent of girls are enrolled in primary schools. In Tanzania, about 74 percent enroll in primary schools but only 15 percent go on for secondary education. In Zambia, 83 percent of children enroll in elementary schools but only 25 percent in secondary schools.

School-based programs in these countries thus reach only a preselected segment of children. Limitations are even greater for girls, and exponentially so for programs that target older children. The Chongololo Clubs in Zambia found membership was limited even for those attending school: children living farther away could not participate during nonschool hours. Populations that are least accessible also tend to be those that are least advantaged.

When resources are already severely limited, it may seem a luxury to worry about whether enrolled students constitute sufficient beneficiaries. If reach or equity is a priority, though, programs can find ways of extending participation.

A few of the programs studied extended their reach beyond the school. The Chongololo Clubs make a concerted effort to broaden reach through radio programs. One TIPE school in Mali opened its drama activities to out-of-school youth.

Making the Most of Structure and Resources

Despite the limitations of a school base, the evaluators of these programs saw this connection as a necessity. In most developing countries there simply *is* no other group to act as a bridge to groups of children. The lower grades, in particular, may provide the only way of reaching girls.

Educational institutions are certainly the best way to reach teachers. Even the nonformal clubs relied consistently upon volunteer teachers as their grassroots leadership force. A school also supplies essential resources, as well as connections to the local government and outreach to community members through standard school channels.

Schools provide a base for program sponsors to bring several clubs or groups of leaders together (whether for workshops, debates, joint excursions, or just information sharing), and for clubs to link on their own. The Roots and Shoots program even allied their clubs with inter-school sports activities to take advantage of the team spirit and visibility that school-to-school competition provides.

Administrative Support and Outreach

Support from the school's administration was a factor in the success of all these programs. This was true for both the formal school programs and the separate youth clubs.

Engaging the Institution. The need for a school hierarchy to back the activities of its teachers is paramount but often overlooked. The TIPE strategy is effective because it assures the program belongs to the school as an institution, rather than to just a group of students or teachers, or a particular curriculum. TIPE provides training and orientation to administrative staff and teachers alike. The school as a whole has the task of setting up a site and deciding upon a collective project.

This approach has turned many principals into powerful advocates and models. Indeed, the evaluation found many instances of administrators leading school projects.

The “gardener principal” in one elementary school who planted an orchard was a powerful model for children as well as the community.

In contrast, schools that inherited trained TIPE teachers from other institutions reaped little benefit from their past training. The transferees would take no initiative unless the administration became involved. This is especially true in Mali because of the local hierarchical system that requires that innovation work from the top down.

Advocates for Partnerships and Resources. The TIPE program illustrates the importance of designing a program with the hierarchy of the entire local school system in mind. In contrast to Mali, other programs studied here benefitted profoundly from the movement of teachers or club leaders from one school to another. Zambia’s Chongololo Clubs, in particular, found that over their long history, experienced teachers were an important channel of club expansion as they shifted to new posts.

However, administrative support was crucial even in clubs where the school hierarchy was not strategically placed at the center of the program,

Ideas for Strengthening the School Base

Involve the School Hierarchy

☛ Program Designers

Make a place for administrators. Give them a defined role. Provide training or regular outreach.

☛ Implementors

Make the program belong to the school rather than to a few members. Keep administrators informed of accomplishments. Seek their support in small material ways and in establishing community linkages.

Examine the Limits of Participation

☛ Program Designers

Define the target ages. Know area enrollment percentages. Discuss what factors might limit participation and for whom. Consider strategies to include those previously left out.

☛ Implementors

Use imagination to reach out. Consider: can a drama performance include out-of-school youth? Are youth associated with some other group outside of school? Is collaboration an option?

☛ Funders

Ask about equity and participation of those least advantaged. Consider special funding for activities to involve those just out of reach.

Operate for Mutual Benefit

☛ Implementors

Think of the school as a partner. Help promote its profile in the community.

where clubs were highly independent and even run by students.

In these cases, administrators were particularly helpful in establishing linkages with other community institutions. In the Malihai clubs, principals interviewed were all willing to offer transport and other kinds of assistance to assure children could have an occasional field trip or attend some special events.

The School as Beneficiary. Every club studied here benefitted the school. School beautification and plantings were almost universal. Some club projects also brought in income, and club print materials and video showings were important supplements to the regular class offerings. Also, officials connected with the Tanzania and Zambia clubs often saw youth programs as a positive reflection on their schools. This mutuality of benefits between school and youth club is a key factor in the success of all these programs.

CROSSING EDUCATIONAL LEVELS

Continuity of contact with students from grade to grade increases the impact of a program many fold. Conservation messages are reinforced over time among both children and their families. Linkages across different educational levels—primary, secondary, and teacher training institutes—also greatly increase a program’s public profile and improve its chances of sustainability.

At the same time, there are tradeoffs to this diffusion of resources, and each program needs to find its own proper growth curve.

From Grade to Grade

Most of the programs studied here began with a clear rationale for focusing on a limited age range. As clubs became successful, students or sponsors sometimes began to push these boundaries.

The Chongololo Clubs in Zambia, for example, have long focused on grades 4-7. However, individual schools often extend participation to grades 8 and 9 and sometimes to younger children who are anxious to participate. Some schools even have junior clubs for grades 1-3.

In addition, a program review by the Wildlife and Environmental Conservation Society of Zambia in the 1980s highlighted the gap *after* elementary school. Given the program’s impact as a national movement, the Society saw secondary schools as a natural target for expansion, leading to a concerted effort to start clubs among older students and supply members with a new set of print materials.

GreenCOM’s evaluator identified the high profile of the WECSZ program and the fact that it reaches a very broad group of students at a critical stage in their education as key factors in its success.

On a more modest scale, the Roots and Shoots program benefits from the links between its elementary and secondary clubs. Older students serve as volunteer leaders for the younger clubs. This also contributes to the program’s goal of building youth self-esteem and leadership qualities.

From Generation to Generation

The Malihai program in Tanzania has established effective programs in teacher training institutes. The clubs provide support to local elementary schools—organizing discussions and supplying seedlings from their nurseries. The club prepares eager young teachers to return to their communities and launch clubs.

Alumni of youth programs are usually its most effective advocates. The evaluators encountered numerous examples of leaders, and even headmasters, motivated by personal experiences to support clubs in their own schools.

Constraints to Expansion

Students at different ages have different needs—in terms of activities they can engage in and materials they can appreciate. A formal school curriculum is always designed with specific ages in mind. But nonformal programs find they are playing catch-up with their own successes.

Expanding a program without consideration for the particular needs of a target audience can backfire. With environmental education programs, this may be true for different geographic regions as well as different age groups. A new target audience may require new materials and approaches to training leaders. It may require re-thinking the range of recommended club activities, or the way clubs are managed. All of this demands resources.

The clubs studied here were creative in adjusting to the special strengths and needs of different age groups, but it is clear no program can be everything to everyone. Sometimes club leaders remarked that materials were too complex for their younger students, or that they couldn't follow the English. Monitoring the acceptability of materials and other support mechanisms is always critical as a target group expands.

Geographical Considerations

One of the realities faced by the Chongololo Clubs as they reach further out is that a program with a specific environmental focus has varying immediacy in different parts of the country. The fundamental conservation message of the clubs—to protect wildlife and forest areas—was highly relevant in the original target region, but as the program moved into new areas it also recruited young people concerned about serious urban environmental issues.

A more mundane, but nonetheless serious, geographic dilemma is posed by expansion into remote areas beyond a program's usual distribution

Ideas for Maintaining Continuity Across Educational Levels

Assess Your Capacity for Expansion

Program Designers

Manage growth instead of letting it manage you. Define your primary target audience and geographic area. What resources and support systems are essential for a healthy program? How can growth be planned within those contexts?

Make Growth Logical

Sponsors and Implementors

- Assess where strong participants and leaders may be. Try a pilot linking with a training institute where your program has been for some years.
- Ask for small favors from neighboring institutions. Teacher trainers, university professors, or high school students can be guest lecturers or field trip supervisors. Build on these links to establish institutional bonds.
- Appeal to your alumni. Encourage them to be leaders, and/or to assist with planning, outreach, and developing resources.

Monitor, Monitor, Monitor

Sponsors and Implementors

Monitor the strengths and gaps in your program. Are materials reaching remote areas? Are they comprehensible to young audiences? Are leaders adequately trained?

Funders

Use evaluations to support strengthening from within before funding a weak system to expand. Fund pilot expansions to test strategies.

mechanisms. Sponsors need to consider whether they have adequate dissemination systems in place before they create new demand.

UTILIZING COMPLEMENTARY APPROACHES

A number of factors will always constrain the reach of any program. However, adding approaches that offer different strengths can extend impact.

Complementary approaches require additional investments, so each program needs to evaluate what kinds of impact are expected for what kinds of costs. Is the purpose of a new channel strictly to reach more of the target audience? To reinforce knowledge and attitudes among the regular members? Or to have some spillover into the wider community affecting out-of-school youth, parents, younger children, and various influential community members?

Membership of the Air

Radio broadcasting can do all of these, as the Chongololo Clubs in Zambia demonstrated. This is the only program studied that put sustained effort into a complementary channel. Poor reception, lack of access to radios, and overload of the medium variously restricted the impact of the Chongololo Clubs of the Air. However, the anecdotal evidence here was that several audiences appreciated any given program wherever reception was possible.

Thus, although these programs targeted grades 4-7, very young children also enjoyed the broadcasts. A number of children and leaders mentioned that the club programs gave them ideas for enhancing school discussions and other activities. Parents also reported finding the programs interesting.

The WECSZ states that over 40,000 people have written in to become members of the radio clubs. Membership has been a way to offer a minimal

element of interaction for listeners, and it has also provided a crude way of monitoring listenership. Assessments indicate that for every member, there are an additional five listeners for each broadcast.

CC of the Air has a broader reach and a more diverse target audience than the club's print materials. Radio has certainly raised the profile of the clubs and the sponsoring organization and may to some extent be influencing community attitudes towards environmental issues.

Short- and Long-Term Investments

With additional funds, this radio club could have broader impact. The programs, like the CC print materials, were originally designed to run on a cycle that is repeated over time. New programs would not be less costly to update and distribute than the volumes of print materials. Taping of broadcasts would also make them available to members with weak reception.

Lastly, translation of the programs would multiply their impact. The programs are now broadcast in English and one local language. However, lack of funds has prevented additional translations.

NEGOTIATING PARTNERSHIPS

A common element in the success of these youth programs is collaboration with other organizations. This study also found that strong leaders tend to be the ones most likely to seek out such partnerships to help achieve goals. At the local level, linkages are themselves one measure of a program's effectiveness in stimulating environmental awareness.

Taking Advantage of Complex Roots

Almost all of these programs were fortunate to have emerged from a marriage of groups with common objectives. This gave them an expanded

base for funding, expertise, and meaningful community activities.

In Tanzania, the Malihai clubs benefit from a mix of government and nongovernment support. Their roots in the national parks program provide connections to other government departments and donor-supported activities in communities. Support from the nonprofit Tanzania Wildlife Protection Fund links them to major international environmental organizations.

Some clubs took advantage of these connections by seeking help from forestry experts or others. One school applied for use of government-owned land along a river in order to prevent soil erosion and turned the badly littered area into a park.

The Wildlife Conservation Society of Tanzania launches clubs as part of local environmental projects funded by a variety of donors. The Society assures initial financial stability and partnership with local conservation work. The projects in turn ensure liaison with the community by facilitating creation of village environment committees.

Roots and Shoots provides clubs with the stability of an international funding base. The standard approach capitalizes on school-to-school linkages and the excitement of learning about issues and friends in other parts of the world.

The Chongololo Clubs in Zambia primarily focus on conservation of wildlife. Schools in proximity to parks establish links with tourist lodges and the Department of Forestry for contributions of seedlings.

Partnership as Mandate

Programs that had a mandate to work in partnership with local groups benefitted enormously from this requirement. The TIPE strategy in Mali—which requires each school to set

Ideas for Sensible Complementary Approaches

Assess the Strengths of Local Media

Program Sponsors

Determine which media can provide the reach, frequency, and credibility that will serve your program.

Weigh this Against Needs and Resources

Program Sponsors

Which program gaps do you need to fill? Is it reach? Enhanced program profile? What will the costs and tradeoffs be to fill this gap?

- Determine how long this funding could be sustained. Plan for the long term.
- Search for partners—such as radio broadcasting students—who can volunteer writing and production skills.
- Do not go it alone. Search for sponsors. Search for joint program partners.

Use Radio as a Linking Medium

Program Designers

- Define your target audience. Radio is more flexible than print media. Design segments for different groups.
- Broadcast in language(s) suitable for your target audiences. Include segments in multiple languages if necessary.
- Motivate local groups. Publicize successes and good ideas. Interview leaders.
- Plan interactive programs. Ask your listeners to respond, to send questions, to join. Monitor your listenership.

Sponsors

Tape programs for remote groups. Loan them out or provide at low cost.

up a joint project with the local community and establish school-community liaison through a village follow-up committee—offers its students a real-life experience in conservation activism.

The headmaster at one school contacted forest officers to organize a course for villagers on the proper care and pruning of trees. Another school requested outreach help from its association of women alumni. After one school sensed community distrust of projects lest they incur graft and exploitation of young students, the headmaster asked for cooperation from partners the community trusted, namely a Catholic youth group and the agricultural services agent.

Club to Club Opportunities

The evaluators found a few instances of youth clubs producing joint publications and collaborating in other ways. Malihai and the WEST clubs recently sponsored a study tour together. Roots and Shoots is exploring additional users for their new club manual, and the Peace Corps and the Voluntary Service Organization have already expressed interest.

In general, however, clubs could pursue opportunities to combine strengths and conserve resources more aggressively.

Mutual Benefit—The Key

Mutual benefit was the key to all of the effective partnerships uncovered in these studies.

Relationships between the TIPE schools and their respective village committees were designed to be reciprocal. Sometimes the school could offer garden plots and a well; the villagers could offer manure for fertilizer. Many club partnerships in Tanzania and Zambia were obviously beneficial to all parties. Clubs that sold seedlings helped their communities and earned money for field trips.

Ideas for Bringing About Helpful Partnerships

Take Advantage of Your Roots

Program Sponsors

Keep your board informed of youth activities and needs. Strategize ways national partners can provide links at the local level. Bring leaders and youth to board meetings. Highlight youth in your organization's overall profile.

Headquarters Staff

Connections with major projects are made more easily by headquarters representatives. Discuss local possibilities during on-site visits.

Design Partnership into the Program

Program Designers

Make community linkages an explicit part of program goals.

- Include a component on partnerships in teacher/leader training.
- Highlight successful linkages and good ideas in publications.

Funders

Model a collaborative approach in funding activities. Help make links at the top.

Partnerships as Everyday Process

Implementors

Partnerships can make leadership easier. Discuss possibilities with the school administration to assure their backing.

- Invite local experts to discuss their work.
- Meet with local conservation groups to see if you can work together.
- Discuss ideas and possible joint activities with other local schools.
- Solicit support from local businesses for projects and outings.

Even connections with tourist lodges benefitted the operators as much as the schools. Students were able to participate in game drives and their schools often received funds for basic improvements; lodges could rely upon students to raise awareness about the value of the game parks.

Sometimes clubs simply need money, and the search for mutuality might seem irrelevant. However, cooperation with a conservation club can raise the profile of private groups who seek association with worthy causes and general income for clubs. For instance, one club sought sponsorship from a local supermarket to provide money for an anti-litter campaign.

ADVOCACY AND ACTIVISM

Children are natural activists. The programs that channeled their enthusiasm in tangible ways benefitted youth the most as well as their communities and the cause of conservation.

Educational theory tells us that personal experience (or practice) is the most powerful aspect of learning for people of all ages. Besides aiming to improve the knowledge of children, these programs all seek to achieve some level of community outreach.

Art As Advocacy

Art provided the most basic outlet for outreach in these studies. Classroom-based programs can involve children in the development of conservation messages and in conveying these through different media. Indeed, posters, songs, and drama were popular activities everywhere.

Moving from entertainment to advocacy is a critical step. Strong programs strategized about reaching audiences—from the school in Mali that put a fuel-efficient stove in the center of its public flower beds, to the touring choir of Monduli

Teacher's Training College, to the children's theater group that performed for village leaders in rural Zambia.

A few schools organized true campaigns to raise awareness about local issues. One school in Mali based its public campaign on songs and sketches about reforestation, and a drama about a devastating drought in the north.

Older students are very receptive to environmental advocacy. Many were eager to write articles for the local press, start their own newspapers, and engage in debates with other clubs. Capitalizing on this enthusiasm, the Conservation Society of Tanzania sponsored essay competitions for its secondary school clubs.

The evaluators found that students were always ready with creative ideas for outreach but often lacked resources, including organizational skills. Many potential partners (such as village environmental committees) also recognized that youth could make energetic and entertaining messengers for their local causes. However, few club leaders initiated such collaboration.

Advocacy Begins in the Home

Children need little prompting to take information home. Programs that encouraged even simple contacts required little of teachers and raised awareness in families. One WEST club in Tanzania based a successful project on children interviewing their elders about the traditional uses of plant species.

More often children reported they had independently tried to convince families to adopt behaviors such as boiling water, disposing of trash properly, and planting trees rather than cutting them down. Unmediated communication can cause tension if traditional practices are closely tied to a

family's ability to support itself, however. The TIPE program in Mali recognized that conservation issues merit direct discussion with influential village members so headmasters meet regularly with parents and school committees.

Activism Beyond the Schoolyard

Children in all of these programs had an impact on their school environments. They learned to dig garbage pits and to dump wastewater in gutters; they planted shrubs and carried out anti-litter campaigns; and they tended gardens and orchards. Such work also provides a model for positive practices in the community.

Stronger programs reached out farther. One Roots and Shoots club organized a city-wide beautification campaign. Another club mobilized a major clean-up of the local market. Sustained projects tended to focus on tree planting and nurseries. A Malihai club built a nursery with its own water storage facility to serve both the school and adjacent areas.

These projects often had income-generating aspects. Many clubs grew seedlings or tended fish ponds. They found community demand high for such projects, and profits valuable for the school or club. A school in Mali shared its land with local women, and returned the income from plant sales to the gardeners.

Activities that led to significant conservation benefits generally relied on cooperation with other organizations. In addition, a sponsoring agency rather than a school usually initiated them. This was true, for example, of the Global Environment Fund-funded project that invited eight Malihai clubs to help farmers convert a part of their land to trees.

Youth always can provide energy and ideas. However, strong leadership in developing both

Ideas for Advocacy and Activism with Children

Focus on Experiential Learning

Program Designers

Experiential learning is the best way to achieve any EE program goals. This approach is alien to most traditional classrooms. Training should capitalize on it.

Extend the Classroom to the Home

Implementors

Find simple ways to involve families. Ask children to do research with elders or try new behaviors at home and in the community. Send something home as often as possible—a drawing or a new song to sing.

Use Art for Outreach

Implementors

Encourage children's natural love to entertain. Skits and songs require no resources. Find prominent audiences and display areas.

Sponsors

Sponsor competitions for art as advocacy. Highlight the winners to promote the program.

Work with and for the Community

Implementors

- Start a school-based project that requires community involvement. (Sell seedlings. Use the money for club activities.)
- Plan a campaign with a partner school and a local sponsor. (Clean up the market. Write to the newspaper about it.)

Funders

Provide special funds for regional art competitions or best community projects.

strategies and community alliances is also necessary for environmental education programs to achieve results.

Local Relevance, Local Initiative

Activism thrives on the conviction that a cause is important to others and also relevant to one's own life. One factor of success in this study was a program's ability to achieve the right balance between a national and local focus.

The TIPE program in Mali evolved to address critical deforestation behaviors that were part of the everyday lives of children and their families. Practical project sites emerged in every school. National and local issues were synonymous.

Clubs sponsored by the WCST in Tanzania are only established in locations where the Society has ongoing conservation projects. These might link to game parks or to soil conservation programs, depending on local concerns.

Roots and Shoots clubs have an environmental and humanitarian mandate, which makes their cause universal and very open, but leaves some members with too little direction for their energy. Most clubs engaged in anti-litter or tree planting projects as a general expression of civic-mindedness.

The Chongololo Clubs in Zambia are successful because of their national objectives, but limited because these objectives are too alien to some members. Indeed, the clubs formed to promote the protection of wildlife found only in certain parts of the country. So, the evaluators met urban children who had never seen wild animals, but were nevertheless enthusiastic about saving them. In such cases, additional resources or different strategies are necessary.

For instance, such children could benefit from field trips and even videos of game drives. These

children also lacked an avenue for expressing their clear concern about many serious urban environmental problems. The experience of stewarding one's own immediate environment is key to any work with young people.

RECOGNIZING WOMEN'S ROLES

Gender was a quiet but powerful theme in this study. Many of the behaviors these programs focused on—from the cutting of trees for fuel, to the type of cooking stove used, to various agricultural practices—are part of women's daily work. Women's groups often served useful advocacy roles in communities. At the same time, young girls are hardest to reach through environmental education programs, because of their low school enrollment.

These studies offered many reminders that to be successful, an environmental education program needs to address the importance of gender in questions of access, pertinence, or advocacy.

The GreenCOM evaluators made an effort to interview equal numbers of boys and girls in the country assessments, and to talk with both men and women in communities they visited. Generally they found that girls were well represented in the eco-clubs—about 35-40 percent of members—and that strong leaders included both women and men.

The school program in Mali relied heavily on women's involvement for its success. Community participation in the project sites was mainly via women. They shared responsibility for the multi-purpose gardens and took home income from the sales of produce. Women helped to get communities to use fuel-efficient stoves. More women than men tended to come to the community meetings, and associations of female alumni helped greatly with conservation outreach.

Ideas for Benefitting from Gender Awareness

Start With a Simple Gender Assessment

Program Designers

- Evaluate opportunities to reach girls as part of initial target audience planning. Understand school enrollment patterns. Strategize ways to reach out-of-school girls.
- Assess gender prevalence for practices targeted by the EE program. Understand the determinants of these behaviors and local alternatives.
- Identify women's groups in the area that are involved in conservation activities and could be supportive of or affected by your program.

Sponsors

State a commitment to include gender in program considerations.

Make Gender a Factor in Planning

Program Designers

Include gender awareness in training. Remind editors to discuss women's conservation roles in print materials. Disaggregate important data by gender (e.g., number of members, leaders, award winners).

Implementors

Provide both boys and girls with experiences and models of environment-friendly practices.

- Focus on fuel-efficient stoves one month and erosion-fighting techniques the next. Discuss male/female work burdens.
- Establish linkages with women's as well as men's groups involved in conservation.

Funders

State an interest in gender implications of programs. Ask for gender-disaggregated data.

Although the evaluation results are only anecdotal, the author reported that among students quizzed about local environmental problems, girls were more likely to describe crucial practices. Girls also spoke more often of discussing ideas from the program with their families. This may have been because the behaviors were more relevant to them, because they observed women participating in the project, or for some other reasons.

Multi and bilateral donors and local NGOs increasingly appreciate the importance of addressing women's roles in environmental programs. This awareness is also having a positive effect on some school activities. In Choma, Zambia, for example, the Chongololo Clubs developed links with women's conservation groups supported by UNDP and a local NGO.

SUPPORTING THE GRASSROOTS BASE

Volunteerism is at the heart of most conservation programs. Even in the formal Mali program, teachers and communities give of their time and talent. A successful grassroots program requires strategic planning, materials, training, and motivation to capture all the support it needs to flourish.

Connections

The evaluations found that a sense of isolation can undermine a program more seriously than anything else. Conversely, the opportunity to share ideas and experiences is a powerful motivator for children and leaders alike.

The value of feeling part of a group or a movement is hard to measure. But time and again the evaluators found club members and leaders saying they wanted to meet more peers to understand the problems others face, and to learn about possible solutions.

Groups in remote areas were especially desperate for news of other clubs. When resources are stretched, arranging contact among counterparts can be the simplest and least expensive way of providing feedback and fresh ideas.

Where resources are available, formal networking (through publications or workshops) is invaluable. In addition, the Malihai club field trip program, the essay competitions, and the Roots and Shoots sports clubs all serve valuable educational as well as social functions.

Coordinators, Advocates, and Experts

Personal contact between sponsors and their clubs was a sign of organizational health. Every leader interviewed asked for more visits, in part because they usually signaled the arrival of resources, such as publications or videos. However, it was clear that what these volunteers valued most was reconnecting with the larger club identity. Visits by external advocates and environmental experts also revitalize members and leaders. Many programs invited local forestry officers, agricultural agents, and representatives from local environmental programs to share their knowledge.

Support Materials

The value of print materials was a constant refrain among students and leaders. Any good material also has a life far beyond its planned use in these countries. For example, schools without libraries, and classes with the barest resources, put Chongololo Club publications in the hands of science teachers and English teachers.

Three elements were crucial to the effectiveness of a very wide variety of newsletters, posters, magazines, pamphlets, club manuals, and teachers' guides produced in these countries: audience targeting, effective distribution, and continuity.

Audience Targeting. The age, reading level, technical grasp, socioeconomic background, and home town of an audience all have a bearing on whether materials will be understood and used.

Programs in this study did their best to segment audiences within the limits of their resources. The TIPE materials are geared to specific ages and include detailed teacher's guides. *Miombo*, put out by the WCST, includes a supplement for elementary students and learning materials for teachers. *The Malihai News* has information for both leaders and club members. The WECSZ magazines (*Chongololo* and *Chimpembele*) target upper elementary and middle school students, respectively. Roots and Shoots is preparing a comprehensive club manual.

Every club leader and student interviewed wanted additional and more specific materials, however. In information-starved areas, clubs rely almost entirely on such sponsor support. As programs expand, materials often lag behind the needs of more diverse groups. The Chongololo Clubs have funds to target a new wave of older members, but very young members, and those living in urban areas are relatively neglected.

Effective Distribution. Each program struggled with the problem of getting materials to remote areas. Simple monitoring systems can help sponsors know when areas fail to receive materials. Because of costs, some programs were only able to deliver materials to those clubs they visited. This is another limitation organizations need to take into account when considering the tradeoffs of growth.

Continuity. Materials reproduction and distribution costs easily stretch the resources of a nonprofit organization. Outside donors often funded materials produced by these programs, so publication could be intermittent. Joint funding of publications is an alternative worth exploring.

Ideas for Strengthening Support Mechanisms

Provide Connections and Motivation

☛ Program Designers

Assure that every club experiences connection with others through visits from headquarters, workshops, mailings, or collaboration with a neighbor.

- Promote a program identity and sense of belonging. Consider regional and national events to bring groups together.
- Find ways to reward leaders. Highlight individuals in newsletters or on the radio. Sponsor competitions.

☛ Implementors

Reach out. Find out what other leaders are doing. Share problems. Let headquarters know what your needs are.

Provide Training— The Key to Vital Programs

☛ Sponsors

Plan ways to conserve funds and assure training reaches maximum teachers/leaders:

- Regional workshops save travel costs. These can be rotated in given years.
- Collaborate with teacher training programs or in-service trainings to make the most of school connections.
- Reserve funds for refresher training and networking seminars/tours.
- Overlap training for new and veteran teachers to encourage exchange of ideas.

☛ Training Designers

Design training to include content material, leadership and organizational skills (including how to form partnerships), and participatory learning approaches.

☛ Funders

Training is a major priority. Help assess strategies and professionalize approaches. Fund for the long term, e.g., a training position.

Make the Most of Print Budgets

☛ Sponsors

Plan for the long term. Monitor periodically.

- Plan joint publications to conserve budgets.
- Monitor distribution. Identify gaps. Consider alternate strategies for remote areas.
- Seek feedback from the field. Target real, expressed needs.

☛ Materials Designers

Define target audiences clearly: ages, languages, geographic locations, etc. Gather audience input in the design of materials. Pretest prototypes with audience.

☛ Funders

Help address known gaps for target audiences. Assure distribution is monitored.

Assure Basic Resources

☛ Program Designers

Determine the material requirements of clubs or classes. Do they need fences, rubbish bins, seedlings, or transportation? Have a plan for supplying the minimum essentials.

Training and Motivation

Recruiting leaders with a passion for their work is an elusive task. Effective training and a system for rewarding commitment are essential, however. Environmental education leaders need preparation in content areas and also in group organization and participatory learning skills.

In these studies, training linked directly to the availability of substantial funding. Creativity in deploying resources was also a factor. TIPE has the full backing of the European Union. Malihai headquarters has a healthy budget for training workshops and seminars for clubs. To conserve funds, they conduct training at the zonal level, alternating zones by year. WCST offers workshops and cooperates with other clubs to save funds and encourage exchange of ideas. Roots and Shoots has recently received funds from USAID to strengthen their training program for secondary level clubs. In earlier years, Zambia's WECSZ had strong Chongololo leadership training programs, but lack of funds now curtails them.

For the most part, these programs succeeded despite, rather than because of, the level of training provided to the local leaders. Club patrons in both Zambia and Tanzania typically felt isolated and were acutely aware that their knowledge and experience were limited.

For many leaders, the need is for follow up reinforcement. The TIPE program provides in-service training as part of the regular supervisory visits of school inspectors, thus obviating the need for extra travel funds.

Strategies are also needed to reward volunteers and teachers. Programs elsewhere have found the most powerful motivators are simply peer and community recognition. Activities that can supply this—competitions, newsletter features, or profiles

of individuals and their clubs on the radio, for example—serve simultaneously to promote the organization as a whole and its goals of environmental responsibility.

Providing Basic Resources

The TIPE program owed some of its success to the simple fact that it provided a few essential supplies to participating schools. These included wheelbarrows, fencing, shovels, and hoes. Clubs in Tanzania and Zambia provided funds for transportation and for students to stay in hostels.

In the usual scheme of donor funding, such contributions are minimal, yet can make an individual school activity flourish.

SEARCHING FOR SUSTAINABILITY

In addition to the seven factors described above, money and the ability to broker support really lie at the heart of this age-old challenge. Environmental programs only survive when they serve those who can offer support. This may be individual members scattered about a country or around the world, international donors, or a supermarket down the street.

The other factor needed is time. Most of these programs are only a few years old. Time is needed to establish linkages in the community, develop a network of committed volunteers who can share ideas, create awareness among a critical mass of people, and educate a generation of new leaders.

ANNEX I

Selected Youth Environmental Programs from Around the World

This annex describes a small selection of youth environmental education programs from around the world. Programs are included in three categories: classroom based, nonformal, and web-supported. These have been chosen because of their particular strengths in encouraging linkages between youth and the community. Nearly every description includes contact information for those wishing to know more.

Classroom-based Programs

1. GLOBAL RIVERS ENVIRONMENTAL EDUCATION NETWORK (GREEN)

- **Sponsor:** National Science Foundation
- **Countries:** United States, Canada, and 135 other countries
- **Focus:** Watershed studies
- **Target ages:** Grades K-12

GREEN is a comprehensive watershed studies program that helps residents link the health of local rivers, including their chemical, physical, and biological characteristics, to the history and lifestyles of the people in the area. Participants gather local data and share information using computer networks in over 135 nations to solve problems locally, regionally, and even globally. GREEN has emphasized creating a “learning community” that includes all sectors—students, families, community groups, citizens, governments, NGOs, and businesses, and anyone possessing the skills and knowledge to understand the issues, and motivated to change. Since 1989, GREEN is initiating cross-cultural links with partner watersheds in other parts of the world to provide regional and international relevance to each student’s experience.

In the classroom, study of watersheds is an excellent means of teaching students how to integrate and analyze information from a variety of sources and across disciplines (science, history, art, math, language). Students also learn about the watershed through water quality testing of several chemical, physical, and biological parameters. They share these data with others in their own watershed through computer network conferencing, then meet at a student congress to discuss their results, assess the state of the watershed, and develop concrete action plans to improve their local river’s water quality. Experts and others from the community become actively involved in the program to provide valuable advice to students.

The community can also provide financial resources and contribute time to the program. For example, organizations such as the Community Fishermen, Kiwanis, Wal-Mart, Ben & Jerry’s, and other businesses funded the watershed education program in Lee County, Florida. In other programs, private labs have provided testing expertise and advice. The role of the community is also key in the advisory committee that provides overall direction and support. Members come from groups such as Rotary, League of Women Voters, Chambers of Commerce, government agencies, universities, churches, and seniors’ groups.

For more information about GREEN contact:

green@green.org

<http://www.igc.org/green>

2. ACTION

- **Sponsor:** Communal Areas Management Programme for Indigenous Resources (CAMPFIRE)
- **Countries:** Botswana, Lesotho, Namibia, Swaziland, Zambia, Zimbabwe
- **Focus:** Environmental and health issues
- **Target ages:** Seventh-grade students (sometimes grades 1 - 6)
- **Outreach:** 1 million school children, 100,000 teachers
- **Funding organization:** Zimbabwe Trust

In rural Africa, conservation and the need to empower people to improve the quality of their lives go hand in hand. For people who live closest to the land, the issue is using resources wisely. Action responds to this need through the CAMPFIRE programme by publishing information in local languages, and involving schools and communities in projects as well as developing new curricula which build on local knowledge. Content of the Action magazines, written in local languages, covers both the environment and health.

In the past, Action magazines were a scarce and valued resource. Participating schools now receive them in sufficient numbers, so every grade 7 pupil can take one home. Recent evaluations have been very positive. One teacher's comment summarizes the importance of the school's role regarding the issue of AIDS awareness. "For as long as there is a need for children to understand, the school is an agent. So as long as the community does not understand the dangers of the disease, the school has got a part to play."

The magazine has reached a much wider audience because children share it at home. Giving each grade 7 pupil a copy has enabled messages to find their way into the conversations of the extended family and the community. Materials in local languages offer distinct advantages in the attempt to make critically important information particularly accessible to remote, disadvantaged, minority, and/or rural communities.

For more information about Action contact:

actionmg@cst.co.zw

3. EARTH FORCE

- **Sponsor and funding organization:** The Pew Charitable Trusts
- **Country:** United States
- **Focus:** Environmental responsibility, development of citizenship skills
- **Target ages:** 10-14

Earth Force is a national, nonprofit organization that is youth-driven and nonpartisan. The creation of Earth Force in 1994 recognized two emerging national trends: young people's overwhelming desire to act on behalf of the environment, and their desire to help their communities through voluntary service. Earth Force has a national Youth Advisory Board (YAB), whose 15 members range in age from 11-16. The YAB advises Earth

Force on the development and implementation of programmatic initiatives. Young people are important resources to their communities; with appropriate opportunities, they together can positively affect environmental issues. Earth Force stresses that young people need direct experience investigating the environment and solving environmental problems in order to develop full environmental understanding, appreciation, and stewardship. Partnerships with other civic and environmental groups, schools, and youth organizations help further common goals and ensure a more efficient use of resources.

Earth Force plans various campaigns such as the “Go Wild For Wildlife” national action campaign that debuted in September 1994. Kids pledged to volunteer time to help wildlife by building habitats, cleaning coastlines, and writing to government officials. Earth Force distributed Wildlife Action Guides to students and educators, providing them with information and ideas for projects. Environmental organizations like The Nature Company, National Parks and Conservation Association, and Nature Center Administrators also contributed their time and efforts. Another program, “Team Up for Trees,” allowed kids to gain a greater understanding of the importance of trees. During this campaign, kids voiced their ideas and concerns to community decision-makers, and raised funds to help protect trees around the world. Kids involved themselves in various activities, such as caring for, planting, and adopting trees, reducing the amount of paper they used, recycling newspaper, cardboard and other paper, and buying recycled paper and packaging. The results showed that kids did successfully “Help Trees For a Healthy Planet.”

For information contact:

Vince Meldrum, vmeldrum@earthforce.org

<http://www.earthforce.org>

Nonformal Programs

4. SOCIAL FORESTRY, EDUCATION, AND PARTICIPATION PROJECT

- **Sponsor:** Ministry of Education, Thailand
- **Country:** Thailand
- **Focus:** Community forestry
- **Target ages:** Fifth- and sixth-grade students
- **Funding organization:** Ministry of Education and the Ford Foundation

The Social Forestry, Education, and Participation Project aims to change teaching, learning, and school-community relations by involving students in studies of local village problems related to forest management. Students are taken out of school and into their communities to examine real world problems, and collect data by interviewing villagers. In this capacity, communities are laboratories for information gathering, and their human and physical resources serve to enhance students’ understanding of concepts taught in class. As students apply their learning to community problems, the school’s role transforms as well, fulfilling a second goal of the project, to have schools contribute to community capacity building.

To facilitate community change, the project helps open a two-way channel of communication between schools and communities. Students’ interviews draw upon indigenous knowledge of the origins and consequences of

a specific problem, while increasing awareness by community members about the need to address the problem. Students and teachers present findings to community members to generate interaction between schools and communities regarding strategies to address forest-related problems. The outcome is the fostering of school-community partnerships focused on jointly developed projects.

In Thailand, the three pillars of the local community are the temple, the village headman, and the school. In one village, existing cooperation between the school, village, and temple broadened as a result of the school's focus on involving students in the planting and care of trees in the school forest. In another village, both the village headman and temple abbot strongly supported activities to discourage forest ground burning.

For more information about the Social Forestry, Education, and Participation Project contact:

Dr. Christopher Wheeler, cwheeler@pilot.msu.edu
College of Education, Michigan State University

5. NATIONAL ENVIRONMENTAL AGENCY, THE GAMBIA

- **Sponsor and funding organization:** National Environmental Agency in The Gambia
- **Country:** The Gambia
- **Focus:** Environmental awareness and action
- **Target ages:** Children and adults
- **Funding organization:** United States Agency for International Development

In 1994 and early 1995, the National Environmental Agency in The Gambia designed and implemented an Environmental Award Scheme. In a short period of time, with limited financial resources and in a climate of political uncertainty, the competition captured the imagination of the country. Competitions took place on regional and national levels in eight different categories, including those relevant to schools, businesses, and voluntary organizations. The categories were established to encourage participation from every element of Gambian society—young and old; women and men; rural and urban; industry and micro-enterprises; government and NGOs; groups and individuals. The competition created an infrastructure throughout the country that today serves follow-up environmental planning and projects.

Competitions aimed to generate activities in three broad priority areas: clean and beautiful surroundings, appropriate technology and sustainable development, and clean and safe industry and enterprise. The types of activities that qualified included: school clean-ups, dramatists' performances, entrepreneurs' inventions, and neighborhoods' "clean" income-generating projects. Overall, there were 210 entries; 94 of these were prize-winners, who received certificates and useful prizes.

Students at national first prize winner Tahir Ahmaddiyya Muslim High School turned their school into a model of environmental management by planting drought-tolerant trees, plants, and an orchard. They collected rainwater for use during the dry season, used organic fertilizers for gardening and making compost, and established a waste disposal system with recycling measures. The students also established an Environment Club that produces dramas on environmental issues for neighboring schools and communities. Other schools in the area are copying these initiatives.

Another valuable example comes from the Touba Taffsir Village Community. This village has collectively managed its environment for 18 years, primarily by preventing bushfires. At the end of each rainy season, the village Imam and elders mobilize the community in bushfire control measures. If by accident there is a fire, the entire village is prepared to control it.

For more information about The Gambia Environmental Awards Scheme contact:

Dr. Irma Allen, szallen@iafrica.sz

6. MAGIC EYES

- **Sponsor:** Thai Environmental and Community Development Association (TECDA)
- **Countries:** Thailand
- **Focus:** Pollution, forest conservation
- **Target ages:** youth

Magic Eyes is a mass education campaign to increase youth's awareness of conservation issues in Thailand. It is hoped that awareness will lead to action and then participation in developing the community and the country as a whole. An initial campaign began with a series of cartoon anti-littering advertisements directed at children. The concept of Magic Eyes was to encourage children to police adults and shame them into doing the right thing with the words, "Ah-ah, Don't Litter, Magic Eyes See You." This campaign has been expanded to address water pollution and forest destruction.

Campaigns also have expanded to target entire communities. The purpose is to encourage public participation and raise awareness. Districts hold contests such as cleanest factory, cleanest market, cleanest police station, and best street sweeper. Campaigns are developed with the following sectors of the community: community leaders and members, responsible government officials, the private sector, and schools (when appropriate). It is important to assess the ability of the target group to develop its own programs, according to the community context. Magic Eyes encourages companies to not only fund but also participate in campaigns in order to better understand how to support TECDA in the future.

In 1990, the Bangkok Metropolitan Administration started a Magic Eyes contest. Other past campaigns include the introduction of short- and long-term measures to solve water pollution at the Bangkok Fish Market. TECDA instituted boat-operated garbage collection programs along the Chao Phya riverside.

No contact information is available for this program.

7. VOLUNTEER-LED INVESTIGATIONS OF NEIGHBORHOOD ECOLOGY (VINE)

- **Sponsor:** North American Association for Environmental Education (NAAEE)
- **Country:** United States
- **Focus:** Neighborhood ecology
- **Target ages:** 8- to 11
- **Funding organization:** Varies by city

VINE is an urban environmental education program led by volunteer parents, high school students, and other adults who receive training to take groups of city kids on field trips to learn about the basic ecology of their neighborhoods. VINE recruits and trains volunteers to run these programs. Programs take place in schools, community centers, libraries, and Boys and Girls Clubs. Personnel at host sites say it has enabled them to expand and enhance their program offerings. Teachers find the activities enrich their science curriculum with hands-on, outdoor laboratory experiences. As they increase youth's awareness of wild plants and animals in their neighborhood environment, volunteers also gain the opportunity to interact with a younger generation, gain first-hand experience in schools and agencies for youth, and serve their community.

Target audiences and sources of volunteers vary from city to city. For example, project leaders in Ft. Lauderdale, Florida, began by focusing on schools with disadvantaged youngsters. Volunteers for the project in Arlington, Virginia, were staffed from PTA and Boys Clubs. Other cities recruit volunteers from a variety of sources, ranging from teens to senior citizens. But the guiding principle for all the projects is to focus on local resources. Starting small is another key component. To get a project started, it is best to involve many decision-makers in initial planning meetings. Out of this group and with help from fund-raisers, donors, and supporters who hold key positions in related institutions, a board can form to nurture the planned project. While some funds are essential for starting this kind of project, volunteers reduce costs. Staff changes go most smoothly in cities where community interest is high and a broad base of support for the program exists among the board, volunteers, and staff members of the sponsoring institution(s).

For more info about VINE contact:

VINE Network Coordinator

202-884-8912 or 706-764-2926 phone

membership office e-mail: Beager410@aol.com

<http://www.naaee.org/html/vine.html>

Web-Supported Programs

8. GLOBAL LEARNING AND OBSERVATIONS TO BENEFIT THE ENVIRONMENT (GLOBE)

- **Sponsor:** Inter-governmental agreements with GLOBE
- **Countries:** 80 countries
- **Focus:** World ecology
- **Target ages:** 6-18

GLOBE is a long-term international educational ecology program intended to unite students, teachers, and scientists in global research and observation of the environment to improve the condition of the world's ecology. GLOBE students in over 7,000 schools make environmental observations at or near their schools, and report their data through the Internet. Scientists use GLOBE data in their research and provide feedback to the students to enrich their science education. Global images based on GLOBE student data are displayed on the World Wide Web (<http://www.globe.gov>), enabling the public to use the students' environmental observations. In the United States, different organizations undertake responsibility for recruiting schools, training teachers, and mentoring students throughout their area. Worldwide, other support comes in the form of staff development, establishment of classroom Internet connections, and technical troubleshooting.

The Internet expands the concept of community. In a program such as GLOBE, information and technology partnerships occur across schools. For example, students from Eno, Finland, recently donated a new computer modem to their partners in South Africa. The community also refers to the scientists who benefit from the students' data, and help them expand their scientific knowledge. Teachers benefit from GLOBE bulletin boards where they can share strategies with other teachers, as well as their experiences in implementing GLOBE in the classroom. GLOBE conducts teacher workshops multiple times throughout the year.

For more information about GLOBE contact:

The GLOBE Program
744 Jackson Place
Washington, DC 20503
800-858-9947
info@globe.gov
<http://www.globe.gov>

9. JOURNEY NORTH

- **Sponsor:** Annenberg/CPB Math and Science Project
- **Countries:** United States and Canada
- **Focus:** wildlife migration
- **Funding organization:** Annenberg Foundation, National Fish and Wildlife Foundation

Over 4,000 schools, representing approximately 200,000 students from all 50 of the United States and seven Canadian Provinces, take part in the Journey North Program. The purpose of this free on-line educational service, located at <http://www.learner.org/jnorth>, is to track wildlife migration. Each spring, Journey North

students can track a dozen migratory animals, including bald eagles, loons, hummingbirds, robins, and manatees. On-line learning is broadening the definition of community. Students in this program share their own field observations with classrooms across the hemisphere and link with scientists who provide expertise directly to the classroom. Several migrations are tracked by satellite telemetry, providing live coverage of individual animals as they migrate.

The migration of the monarch butterfly has become a favorite in the program. The entire eastern population of North American monarchs fly to nine small sanctuaries in central Mexico. This migration is considered by scientists to be an “endangered phenomenon” that may disappear in the next decade. In the spirit of international cooperation, habitat conservation, and animal stewardship, Journey South has evolved as a symbolic monarch butterfly migration to accompany the program’s Internet-based ritual. Students in Canada and the U.S. create butterflies out of paper, paint, paste, and other supplies. Each butterfly carries a letter to a Mexican child, and asks him or her to watch over it during the winter months. These butterflies then “migrate” to Mexico for the winter at the same time as the real monarchs’ journey south. Over 85,000 children take part in this symbolic migration. Now an annual tradition, the United Parcel Service gives the truckloads of paper butterflies a free ride south. The Children’s Museum of Mexico City provides winter homes each year for thousands of butterflies. By sheer participation, Canadian, U.S., and Mexican students are helping adults see they must protect the spectacular monarch migration for future generations. Another “symbolic migration” includes a songbird event that links students in the U.S. and Canada with students in the Yucatan Peninsula.

For more information about Journey North contact:

<http://www.learner.org/jnorth>

ANNEX II

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