



Healthy People in a Healthy Environment: Integrating Population, Health and Environment

1992's Rio Declaration on Environment and Development identified the nexus between population and environment as a crucial element for achieving sustainable development—a linkage that was reinforced at the International Conference on Population and Development in Cairo in 1994. Both Rio and Cairo also unequivocally voiced the need for integrated environment and development programs that take into account demographic trends. And they were equally persistent in calling for both strengthened research and the development of information about population, environment, and sustainable-development interactions.

But success in implementing these goals on international, national, and local levels has been modest. While nations at the 2002 World Summit on Sustainable Development in Johannesburg reaffirmed their commitment to the Rio Declaration and the global program entitled Agenda 21, the Summit's agenda and discussions remained all but silent about the role of population and reproductive health in addressing unsustainable patterns of consumption and conserving the environment. Over a decade after Rio, organizations are still struggling to make truly integrated population, health and environment (PHE) programs effective. In a world where population growth in many developing countries is still unsustainable, poverty is on the rise, and ecosystems are under constant threat, it has become more important

than ever to demonstrate the enhanced value of integrated PHE programs, especially given that several foundations have had to cut back funding for this type of program.¹

However, linking sustainable development with environmental conservation has always been controversial. A recent article summed up the issue by stating that “Sustainable development has become an environmental mantra across the Third World. But critics increasingly ask if people and wildlife belong together at all” (Steinglass, “No Man’s Lands,” *Boston Globe*, March 28, 2004). One important argument for linking sustainable development with environmental conservation is that poorer countries cannot simply declare natural resources off limits to people. The sustainable use of natural resources through improved agricultural practices and the protection of wildlife through ecotourism has been promoted by development agencies like USAID and the World Bank as well as organizations in the countries concerned including indigenous peoples’ movements.

1/ Introduction adapted from: Eckhard Kleinau and Jennifer Talbot, 2003. *When the Whole is Greater than the Sum of its Parts: Integrated Indicators for Population-Environment Programs*. PECS NEWS-A Population, Environmental Change, and Security Newsletter, Environmental Change and Security Project, The Woodrow Wilson Center, Spring 2003.



Over the past four years, EHP has provided assistance to USAID in Madagascar integration PHE. The community-centered and integrated PHE program in Madagascar is predicated on the assumption that competing interests of sustainable development and the conservation of biodiversity can be met:

- Indigenous peoples asserting their cultural heritage and rights to livelihood
- Development agencies trying to alleviate poverty
- Developing country governments seeking to grow their economies
- Environmental conservationists pursuing the protection of biodiversity

USAID supported the Voahary Salama Association (VS), an NGO umbrella organization, that implements the integrated PHE program along three major forest corridors and other threatened ecosystems in Madagascar. The goal was to demonstrate that linking natural resource management with health and population will increase the effectiveness and sustainability of these activities compared to their implementation through separate sector programs. Although activities covered a broad range of PHE interventions, the focus was on the following eight:

- Family planning
- Immunization
- Maternal and child nutrition
- Diarrheal disease prevention through improved water supply, sanitation and hygiene (all three combined, a.k.a., hygiene improvement)
- Malaria and other infectious diseases prevention and treatment
- Reduction of slash and burn practices and improved agriculture
- Reforestation
- Income generation

Three social marketing and social mobilization approaches played a central role in each of these eight technical areas:

- Champion community (community target setting, monitoring and celebration)
- Child-to-community (increasing life-skills, school enrolment and attendance through PHE themes)
- Farmer-to-farmer (model farmers teaching others improved agricultural techniques)

These three approaches are based on an early adopter or innovator model that has proven its value for changing people's attitudes and practices related to many behaviors in the PHE context.

Over a four-year period, EHP, in collaboration with other partners (see list), played a major role in developing institutional and technical capacity of local NGOs to implement integrated activities in 160 Malagasy communities covering a population of 125,000 (out of 500,000) along three major environmental corridors in Madagascar between 2000 and 2004. Funding came from the USAID Bureau of Global Health's Office of Population and Reproductive Health, Office of Health, Infectious Diseases and Nutrition, and the USAID Mission in Madagascar. Systematic monitoring and rigorous evaluation under EHP's direction showed that integrated programs can be very effective at relatively low costs. Substantial improvements of key PHE indicators overall or in specific intervention areas were measured such as contraceptive prevalence rates, immunization coverage, access to safe water and basic sanitation, and the practice of less destructive natural resource management methods. However, health indicators such as malnutrition and diarrhea prevalence remained high. This can be attributed in part to high levels of poverty, a serious political crisis in 2002 and natural disasters from cyclones in early 2004.

Key Lesson

- √ The integration of health, population and natural resource management programs can achieve good results in each sector at relatively low costs compared to programs implemented separately because of complementarities of interventions and programmatic synergies that occur when local NGOs work in partnership.

Specific Lessons

- √ **Lesson 1:** Successful integration at scale is dependent on the establishment of effective mechanisms for a range of partners to collaborate.

The very nature of the integration of health, population, and environment programs requires a partnership among a range of organizations. Funds for integrated activities may come from those organizations interested only in protecting the environment or from those whose primary concern is protecting human health. Implementing organizations might specialize in either environment or health and population. In addition, many of the activities in communities are small scale in nature, and in some countries, only small NGOs work in those communities. Bringing together all these partners in a collaborative effort is the only way that an impact at scale is possible.

In Madagascar, EHP helped form a partnership consisting of three kinds of organizations: those that provide either financial or technical assistance and NGOs that implement activities in the field. Voahary Salama Association, which began as a partnership and became a legally registered Malagasy association, consists of 29 partner organizations, nine of which are local NGOs implementing field activities. VS acts as an umbrella organization that provides training and technical and financial assistance to member NGOs, coordinates efforts among its members, plays a monitoring and evaluation role, and disseminates information and lessons learned. VS is expected to be completely independent and capable of receiving and managing its own funds by the end of 2004. Before the creation of the VS, there were individual organizations in Madagascar implementing PHE projects but independently and on a small scale with ad hoc and limited coordination. The establishment of a visible partnership has resulted in significantly improved coordination and enhanced technical capacity among the local NGOs. In addition, VS now has the potential to attract funds more easily than individual and small NGOs would be able to do.

- √ **Lesson 2:** The most cost-effective way to reach target populations in ecologically sensitive areas is through local NGOs that have the interest in and capacity to reach these communities.

Most ecologically sensitive areas are in remote locations and often NGOs are the only actors willing and interested in working in these areas. Few governments have the capacity and resources to work in remote communities. In Madagascar, this certainly proved to be the case. Fortunately, Madagascar has a number of NGOs with the capacity and interest in working in these areas. The total population living along three major environmental corridors is estimated to be 500,000 people, mostly in small communities under 1,000 inhabitants. To date, approximately 25% of this population has been reached through integrated PHE activities that are implemented by nine NGOs.

Over the past five years, EHP provided funds to a total of six NGOs to implement integrated activities in communities and to VS to provide technical assistance and training to these NGOs (The remaining NGOs are funded by other organizations). VS assistance included training in work plan development, setting up monitoring and evaluation systems, increasing technical skills in the PHE technical focus areas, and developing their social marketing and communications capacity. As a result of being part of VS, these NGOs have increased their capacity to implement integrated activities and now see themselves as part of a larger effort.

- √ **Lesson 3:** Different mechanisms can successfully implement Integrated PHE.

From the outset, the evaluation of the integrated PHE program in Madagascar had been designed as a natural experiment by comparing three different implementation modes:

- Multidisciplinary teams within one organization (the gold standard)
- Different health and environment teams within the same organization

- Field agents from different sector specific organizations—health, agriculture, environment

The three intervention types were compared to a control group that had either health or natural resource management activities or no program support at all. Good performance was observed for the multidisciplinary team approach as well as for the collaboration between two or more organizations. The NGO with two teams was not able to achieve as much as the others. While the two surveys showed clear differences between the three intervention modes, this does not seem to indicate that one approach is better than others. The observed differences can easily be explained by:

- Geographic differences between the northern and southern areas—culture, access to infrastructure and services, economic opportunities, etc.
- Organizational capacity and commitment to integrated PHE
- Available resources where one organization may have more than 10 times the resources than another, but not cover a population that is larger by the same factor

✓ **Lesson 4: PHE integration is effective.**

Results from an impact evaluation that the Voahary Salama Association conducted showed substantial improvements of key PHE indicators overall or in specific intervention areas. The evaluation design compares intervention areas before and after integrated activities were implemented and compares the intervention areas to a control group at baseline and follow up:

- Prevalence rates for modern contraceptives, a key family planning indicator, increased from 12% at baseline to 17% overall and by 10% to 26% in one area.
- A significant proportion (15-25%) of women indicated that they would procure contraceptives from Community Based Distributors (CBD), an option not available at baseline. Government health centers and private pharmacies remained the main sources of supplies, especially for injectable contraceptives.
- Immunization rates for fully immunized children increased from almost 20% to 68%

for children with and without a child health card. Immunization rate was 83% for children 12 to 23 months old where a health card was available.

- Access to improved water supplies rose from 19% to 24% in intervention areas overall and more than doubled in some NGO supported areas.
- Access to improved sanitation facilities increased slightly, from 52% to 55% overall, but by almost 20% in one area.
- Only about a quarter of the households interviewed admitted to practice slash and burn compared to over half at baseline.
- The proportion of households citing traditional contracts to reduce slash and burn practices more than doubled to 22%.
- An increase from 10 to 40% was observed for the recognition of deforestation and slash and burn as major causes of soil erosion.
- About 10% more households (24%) felt that their food production was sufficient for the entire year compared to the baseline, which is still alarmingly low.
- Participation in village associations or committees by the head of household and by women remained stable at 44% and 31% respectively, compared to the baseline.
- Intervention areas performed generally much better than control areas for these indicators.

While the improvements may be comparable to those achieved by vertical sector specific programs, they are noteworthy for three reasons. First, results were achieved in multiple sectors, not just in a narrow subset of technical interventions. Second, without the integrated PHE program the underserved populations living around forest corridors would not have benefited from essential health and agricultural services. Third, these results were achieved at relatively low costs and at a scale that compares favorably to vertical programs. All this indicates that important synergies exist in an integrated approach that covers multiple sectors.

✓ **Lesson 5: At the community level, people's choices related to PHE must be seen in the context of their livelihood and food security.**

Basic economic needs have to be met to maximize the impact of the interventions in PHE. As the higher diarrheal disease prevalence and unchanged high levels of child malnutrition have shown, factors other than program interventions seem to play a major role in health outcomes. Based on the asset index included in the household surveys and field observations, the majority of households in the program area live well below the poverty line. Three in four households do not produce enough food to last an entire year, and cash income to supplement harvests is not readily available.

Voahary Salama NGOs and other partners (for example, the USAID funded eco-regional conservation and development project) have promoted cottage industry and income generation. Data from two surveys, however, indicated that these activities are still at small scale level, and few families benefited from credits or were provided equipment to improve productivity. Even if production increases in these remote rural communities, it will be difficult for villagers to sell their products unless the transportation infrastructure improves. The impact survey in 2004 shows that half of the villages are only connected by dirt track or foot path and about 40% of the villages are 5-15 kilometers away from the nearest market. Reduction in the high levels of poverty and food insecurity need to accompany improvements in family planning, maternal and child health, agriculture and natural resource management to result in health impact.

- √ **Lesson 6:** Communities must be active participants in integrated PHE programs and can self-determine sustainable development activities when appropriate and feasible social marketing and mobilization approaches based on an early adopters and innovators model are used.

Three social marketing and mobilization approaches—champion community, farmer to farmer, and child to community—have been implemented to a varying degree by the NGOs. Where they have been used, they seem to be associated with larger improvements of key indicators. Communities seem to be motivated by setting targets themselves, monitoring these targets, and

celebrating their successful achievement with the help of NGOs. Where communities have not set specific targets, progress seems slower. Long term effects of this intensive collaboration with primary schools are expected to result in significant behavior change as children grow up, learning about sanitation and hygiene, nutrition and non-destructive and improved agricultural practices.

Challenges of Integrated PHE

While the effective integration of PHE poses many challenges, the following two emerged as important for the future direction of PHE integration in Madagascar and beyond.

1. Does the integration of PHE improve health and livelihood?

Despite the improvements in intermediate program outcomes, the health status indicators did not improve. The diarrhea prevalence was 25%, which was almost twice as high in all intervention and control areas during the second survey, ranging from 15% in one region to almost 40% in another. Malnutrition remained very serious and affects one in two children under five. Several factors may explain why measurable changes in health outcomes were not observed: (1) three years of interventions was probably too short; (2) two major cyclones passed through Madagascar right before and during the impact survey in 2004 but did not occur during the baseline survey in 2001; (3) a political crisis in 2002 following elections led to major disruptions and food shortages; and (4) four in five households in rural areas of Madagascar still live well below poverty levels. Achieving health and socioeconomic impact through integrated PHE interventions and measuring the impact should be the long-term focus of program efforts.

2. Can development activities conserve ecosystems and biodiversity?

The program in Madagascar was not designed to answer this question in the short run, but the foundation for answering this question has been laid. This will require that data from

these household surveys and other qualitative assessments are linked with data on forest coverage, illegal hunting activities and slash and burn practices. The environmental data are available from conservation organizations such as Conservation International and the World Wildlife Fund. A close collaboration between Voahary Salama and these organizations is planned over the coming five years to carry out time series and special analyses to answer this important question.

Conclusions

The experience from the integrated PHE program in Madagascar has shown that NGOs can play a significant role in improving family planning and maternal and child health services and making improvements in agriculture and natural resource management for populations that are inaccessible. Their support by other donors and projects in the form of direct funding and technical capacity building has been critical to their success. Future programs in the health and environment sector should consider expanding the roles of NGOs as a cost-effective way to rapidly cover difficult to reach populations in vast geographic areas with interventions that promise to have a health impact and protect natural resources and remaining ecosystems in the longer run.

Voahary Salama Partners and Supporting Organizations

Malagasy NGOs Implementing PHE

Action Santé Organisation Secours (ASOS)
Adventist Development and Relief Agency International (ADRA International)
Fanentanana Fambolena Fiompiana (FAFAFI)
Madagascar Institut pour la Conservation des Environnements Tropicaux (MICET)
Malagasy Teknisiana Mivondrona ho aro sy Tezan'ny Zahamena ary ny Ala atsinanana (MATEZA)
Medical Care Development International (MCDI)
Ny Ainga
Ny Tanintsika
SAF/FJKM Development Office of the Church of Jesus Christ in Madagascar (Sampan'Asa momba ny Fampandrosoana/Fiangonan'i Jesoa Kristy eto Madagasikara)

Other Members of Voahary Salama

Association Nationale d'Actions Environnementales (ANAE)

Association Nationale pour la Gestion des Aires Protégées (ANGAP)
Conservation International
Direction Nationale de la Fédération Kolo Harena
Environmental Health Project (EHP)
Landscape Development Interventions (LDI)/Chemonics International Inc.
LINKAGES Project
Madagascar Green Healthy Communities Project (MGHC)/John Snow, Inc. (JSI)/ Packard Foundation
Ministère de l'Environnement et des Eaux et Forêts
Ministère de la Population
Ministère de la Santé
Office Nationale pour l'Environnement (ONE)
Office Nationale pour la Population (ONP)
PACT, Inc.
Population reference Bureau (PRB)
Service d'Appui à la Gestion de l'Environnement (SAGE Fampandrosoana Maharitra)
TANY MEVA Foundation/Summit Foundation
University of Michigan Population and Environment Fellows Program
United States Agency for International Development (USAID)
World Wildlife Fund (WWF)

References

- De Souza, Roger-Mark, John S. Williams, and Frederick A.B. Meyerson. 2003. Critical Links: Population, Health, and the Environment. Population BULLETIN, Vol. 58 No.3, September 2003. Population Reference Bureau (PRB).
- Harrison, Paul and Pearce, Fred. 2001. 'AAAS Atlas of Population and Environment' Victoria Dompka Markham, editor. 215 pages. American Association for the Advancement of Science and the University of California Press.
- Kleinau, Eckhard, Jennifer Talbot. 2003. When the Whole is Greater than the Sum of its Parts: Integrated Indicators for Population-Environment Programs. PECS NEWS-A Population, Environmental Change, and Security Newsletter.
- McKee, Jeffrey. 2004. Sparing Nature: The Conflict Between Human Population Growth and Earth's Biodiversity. Rutgers University Press.
- Melnik, Mary. 2001. An Ounce of Prevention. Biodiversity Support Program (BSP).
- Vogel, Carolyn Gibb, Engelman, Robert. 1999. Forging the Link: Emerging Accounts of Population and Environment Work in Communities. Population Action International (PAI)

Key Document

Integration of Health, Population and Environmental Programs in Madagascar. Midterm Progress Report. Activity Report 115