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INTEGRATING POPULATION, HEALTH, and ENVIRONMENT (PHE) PROJECTS:

A PROGRAMMING MANUAL

OCTOBER 2007

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Primary Authors: Leona D'Agnes and Cheryl Margoluis

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— Leona D'Agnes and Cheryl Margoluis

ACRONYMS

ACM	Appreciative Community Mobilization (social mobilization model)
ADRA	Adventist Development and Relief Agency (international NGO)
ARI	Acute respiratory infection
CBCRM	Community-based coastal resource management
CBNRM	Community-based natural resource management
CBO	Community-based organization (may or may not be a legal entity)
CCEF	Coastal Conservation and Education Foundation Inc. (Filipino NGO)
CHOW	Community health outreach worker
CI	Conservation International (international NGO)
CIRAD	French Agricultural Research Centre for International Development
COBA	Community-based organization empowered to manage forest assets in Madagascar through a transfer agreement with the government
CRM	Coastal resources management
EHP	Environmental Health Project (a USAID-funded IQC Task Order that supported PHE evaluation activities in Madagascar)
ERI	Eco Regional Alliance Initiative (USAID's bilateral environment and rural development program in Madagascar)
ICDP	Integrated Conservation and Development Project
IEC	Information, education and communication
IFAD	International Fund for Agricultural Development
FP	Family planning
FPAN	Family Planning Association of Nepal (national NGO)
GHP	Global Health Program of USAID's Office of Population and Reproductive Health
HPE	Health-Population-Environment (interlinkage approach same as PHE)
ICM	Integrated coastal management
IPOPCORM	Integrated Population and Coastal Resource Management
KM	Kaominina Mendrika (commune-level social mobilization used in Madagascar)
KMS	Kaominina Mendrika Sante (commune-level social mobilization for health)

LFA	Logical framework approach
M&E	Monitoring & evaluation
MGHC	Madagascar Green Healthy Community Project
NGO	Non-governmental organization (legally registered, private non-profit sector)
NRM	Natural resource management
PDA	Population & Community Development Association (Thai national NGO)
PE	Population-Environment (interlinkage approach among two sectors)
PESCODEV	Population and Environment Co-Existence Development Project
PF	David and Lucile Packard Foundation
PFPI	PATH Foundation Philippines Inc. (Filipino NGO with 501(c) status in USA)
PHE	Population-Health-Environment (interlinkage approach among three sectors)
PO	Peoples Organization (grassroots civil society organization in Philippines)
RH	Reproductive health
RH/NRM	Reproductive Health linked to Natural Resource Management
RIMS	Resource Identification and Management Society (Nepalese NGO)
SanteNet	USAID's bilateral health program in Madagascar
SAVE	Save the Children (an international NGO)
SUMMIT	The Summit Foundation (based in USA)
NHWP	Nature, Health, Wealth and Power (a framework used in Madagascar to promote linkages between environment, health, livelihood and governance)
USAID	United States Agency for International Development
WCS	Wildlife Conservation Society (international NGO)
WWF	World Wildlife Fund (international NGO)
YPE	Youth peer educator (youth trained in peer-mediated behavior change)

EXECUTIVE SUMMARY

Achieving environmentally-sustainable development in situations of surging population growth, declining biodiversity, and chronic poverty requires strategic planning, multi-disciplinary interventions and cross-sector linked approaches that mirror the livelihood strategies of poor households and communities. This manual was designed with such a need in mind using evidence from programs in Madagascar, the Philippines, and other countries where integrated approaches to development have been explored and brought to scale over the past decade.

Defining PHE and Integrated Approaches

Population-health-environment (PHE) is a development approach that recognizes the interconnectedness between people and their environment, and supports multi-sector collaboration and coordination. The target audience for this manual includes individuals who are interested in designing field-based projects that apply integrated approaches to promote balanced and sustainable development. While the manual was developed primarily for program designers and planners, other audiences such as donor representatives and government decision makers may find its contents useful for understanding how PHE linkages work – both conceptually and operationally in the field, and how PHE might fit into a future where climate change, natural disasters, and ecosystem changes pose threats to human health and sustainable development. Appendix 1 provides a long list of suggested questions donors can use to determine if a proposed PHE project has considered the most important factors.

The first two chapters of the manual summarize the evolution of cross-sectoral approaches and discuss several reasons why governments, donor organizations and civil society groups support PHE initiatives – namely because they are cost efficient, generate added value and can create synergies not found in vertical programs and projects. This was demonstrated in a five-year study in the Philippines, which showed that integrated approaches to population and coastal resource management (CRM) generate significantly higher impacts on reproductive health *and* CRM outcomes – and cost *less* to field – compared to the cost of implementing independent reproductive health (RH) and independent CRM approaches. Four strategies for integrating PHE are also delineated in this section of the manual, and the general steps in creating a sustainable and scaleable PHE project are outlined in a visual chart that also serves as a prelude to succeeding chapters.

Designing an Integrated PHE Project

Although historically PHE focused on interlinkages between RH and biodiversity conservation, in this manual the scope has been expanded to include

projects working on other types of natural resource management (NRM), such as sustainable agriculture or fisheries management, as well as other relevant health issues such as HIV/AIDS or water and sanitation. Chapter Three examines the role of a PHE initiative with the larger policy landscape where the project is located. It illuminates the procedures for creating a well linked (integrated) approach to population, health, and environment that will yield improved outcomes for each sector while at the same time contributing to a common goal. This process hinges on the formulation of a logic model or conceptual framework that graphically depicts the causal linkages and assumptions between environmental factors and health factors at the project site. A well planned conceptual framework is essential for identifying the factors and opportunities underlying the situation or condition at the site which the project aims to remediate. It is also useful for formulating the project's objectives and selecting appropriate interventions, activities and monitoring and evaluation indicators for effective remediation and measurement of success.

Important criteria to take into consideration when assessing whether or not a site is appropriate for a PHE project are analyzed in the third chapter of the manual. Chapter Three also examines potential implementation models, delivery mechanisms, and field-level interventions that can be applied at the community level. These include high-impact evidence-based interventions, such as family planning and insecticide-impregnanted bednets, and systems-focused interventions that can enable communities to participate in PHE planning processes and access resources for project activities. The different reward systems that can help influence individual decisions that drive behavior are also deliberated in this section of the manual. Various types of institutional arrangements an organization can form in order to manage and implement the project are also highlighted, together with inputs that may be required to increase capacity and knowledge of local implementing partners and enhance the sustainability of project activities. Funding sources for PHE projects are not always evident and for this reason the manual examines a number of approaches to resource mobilization and lists several international, national and local sources of potential funding.

Creating Longer, Larger Impact

Sustainability and scalability are often overlooked in the planning phase of the project as there is a great focus on beginning implementation. But in order to achieve sustainability and bring interventions to scale, such mechanisms must be created during the design phase. Chapter Four focuses on selected PHE projects that were implemented on a larger scale in the Philippines and Madagascar. Common features of these PHE projects that facilitated rapid scale-up include decentralization, private-public partnerships, the presence of existing alliance

and the leadership role that local Mayors played in convergence of national or sub national policies and local PHE initiatives.

Both countries also have been able to sustain PHE approaches after the termination of external funding. Some of the elements that were built into project designs that contributed to sustainability include cost recovery mechanisms for family planning and other essential health products; alternative economic opportunities that enabled resource-dependent families to maintain and diversify their sources of household income; and strategic IEC campaigns that used overarching themes - such as food security - that improved peoples' understanding of PHE linkages and helped sustain institutional and community interest and involvement in integrated population-health-environment initiatives.

Additional Resources and References

Each chapter of the manual concludes with additional references that the reader can explore for more detailed information about each topic. Several appendices follow with questions that donor agencies may find useful when reviewing PHE proposals. Other appendices offer additional tips on managing PHE. Finally, a list of key contributors is attached as a way of acknowledging their contributions to the evolving PHE field and to the information contained in this manual.

CHAPTER I. INTRODUCTION

This manual aims to guide international development project designers through the steps essential to an integrated project. These steps are not sequential, and there is no one recipe for a successful project. These steps are intended for project designers, at any stage of their current project, to review and help them determine if their project is on track. The level of technical detail in each chapter of this manual is augmented by an extensive list of references, from which the reader can access more explicit information if so desired. To illustrate how it all comes together, the manual features a visual flow chart that guides the user through the basic steps and options for planning a sustainable and participatory PHE approach based on "best practices" documented to date. Whenever possible, this manual refers to examples from past or ongoing rural and urban PHE projects although the latter are fewer in number and more recent in practice.

A. Defining PHE and Integrated Projects

Integrated projects that incorporate both reproductive health *and* environmental interventions have been given various names throughout the years – such as PHE (population, health and environment), RH/NRM (reproductive health and natural resource management) and CBPE (community based population and environment). Although these projects have different names and approaches, they are guided by the common belief that integrating population, health, and environment can potentially lead to synergistic successes and greater outcomes than if they are implemented in isolation. This concept is defined by Population Action International (PAI) as the "linkage, within a community or group of communities, of natural resource management or similar environmental activities and the improvement of reproductive health, always including but not limited to provision of family planning services" (Engelman, 2005, p14). The Population Reference Bureau (PRB) defines PHE as an "approach to development that recognizes the interconnectedness between people and their environment, and supports multisectoral collaboration and coordination." While its underlying philosophy is based on the interdependencies between the three sectors of population, health and environment, PHE also "can accommodate other sectors and be successfully applied to achieve a range of development goals, from poverty reduction to food security to gender equity" (PRB, 2007). As this document is intended to be a compact guide, the discussion on these definitions is limited. However, there are a number of documents that deal specifically with defining PHE – please see the resource section at then end of this section for additional references.

In this manual, the terms PHE as well as "integrated" are used when referring to projects that promote population, health and environment interventions that are

at least conceptually linked, if not operationally coordinated at the field level. Population interventions generally involve the delivery of family planning information and services and may include additional reproductive health inputs such as HIV/AIDS prevention education. Other health interventions are varied, and usually depend on the greatest health needs identified by the target community. Most projects, however, integrate water, sanitation, malaria prevention, or child health. Historically the environmental goals of these projects have focused solely on biodiversity conservation, but in this manual, the scope has been expanded to include those projects working on other types of natural resource management, such as sustainable agriculture or fisheries management.

The term "integrated" is used in contrast with the terms cross-sectoral, coordinated, and parallel, which are defined as:

- **Cross-sectoral.** Projects that involve several sectors, though they may not fully integrate their efforts. It aims to link the sectors at least conceptually, but may not link them operationally.
- **Coordinated.** Projects being conducted in the same area, where some level of coordination exists among the organizations. They are not necessarily formally working on a project together, but rather coordinating efforts on separate projects. This could be sharing costs on transportation to the field, or simply sharing information on project developments in order to avoid duplication.
- **Parallel.** Projects being conducted in a single area without coordination among organizations.

These categories are not necessarily discrete, but rather run along a continuum based on the level of integration of the project (See Figure 1). This publication is aimed towards those individuals designing integrated and cross sectoral projects.

Figure 1. The spectrum of integration of PHE projects
(adapted from Margoluis, 2001)

Parallel **Coordinated** **Cross-sectoral** **Integrated**

The terms project and program are often used interchangeably. But in this document, a project is defined as "a set of actions undertaken by a defined group of practitioners – including managers, researchers, community members, or other stakeholders – to achieve defined goals and objectives" (Conservation Measures Partnership, 2007, pg 36). In contrast, a program generally has a longer term commitment to specific goals and is made up of different projects.

B. Target Audience

This manual is aimed at those individuals who are interested in designing projects that use integrated PHE approaches to promote balanced and sustainable development. It provides an organized method of taking into consideration how you might enhance, expand, or spread the benefits of your particular project, gain resources not otherwise available, and better assure that your work is not at cross-purposes with other sector's projects.

This manual should also be useful for public and private donors who are thinking of supporting programs that make use of integrated and cross-sectoral approaches. And for those individuals working within the United States Agency for International Development (USAID), this manual should provide further information for those who have taken the Population-Health-Environment (PHE) online course and are interested in gathering more information on the topic (see resource section at the end of this section).

Generally organizations that are interested in these types of programs work in conservation, health, or family planning. But organizations working in other sectors may incorporate PHE goals into their projects as well. Projects addressing issues such as food security, gender, migration, climate change and disaster mitigation can have PHE components as well, and may therefore also find this manual useful.

While this manual outlines the essential steps in an integrated project, these steps need not be sequential. Therefore the manual should be useful for not only those at the beginning of project design, but also for those individuals working on existing projects as a means of reviewing their project components and strategies and adapting where necessary.

Further resources on introductory information on PHE projects

Mogelgaard, Katie & Heather D'Agnes. (2007). Global Health E-learning course on population, health, environment. Available online at: www.globalhealthlearning.org. This is the online course on PHE within USAID that is available for all audiences, not just USAID staff.

Woodrow Wilson Center for Scholars Environmental Change and Security Program. Available online at: www.wilsoncenter.org/ecsp. This webpage has information on current events and publications on integration of environment and security issues.

Interagency Gender Working Group. Available online at: www.igwg.org. The IGWG promotes gender equity within population, health, and nutrition programs with the goal of improving reproductive health/HIV/AIDS outcomes and fostering sustainable development.

Population Action International. (2005). Linking reproductive health and natural resource management: What you need to know to apply for U.S. Government funding for community-based projects. Washington, D.C. PAI. This "unofficial guide" explains USAID's interest in programs that link family planning with conservation to satisfy unmet demand from communities for reproductive health services, and offers advise to nongovernmental organizations (NGOs) interested in applying for project funding.

DeSouza, Roger-Mark, Williams, John S. and Frederick A.B. Meyerson. (2003). Critical Links: Population, Health, and the Environment. Washington, D.C. Population Reference Bureau. This bulletin highlights the results of research, community projects, and public policies to examine key questions about the nature of PHE relationships; how they affect human well-being and the environment; and what researchers, communities, & policymakers can do to address their impacts.

World Wildlife Fund Conservation (WWF) Strategies Unit. (2002). Conservation on a crowded planet: A Population sourcebook for conservation practitioners. Washington, DC: WWF. This is guidebook on population specifically geared towards conservation organizations.

C. How this Manual is Organized

This Manual is organized into the steps that would need to be taken in order to design an integrated project.

Chapter 2. Introduction to Integrated PHE Projects reviews the core elements of a project that uses integrated and cross-sector approaches and ways that these elements can be integrated.

Chapter 3. Designing an Integrated Project discusses the steps that are necessary in the design phase of a PHE project, such as selecting interventions and determining criteria for site selection.

Chapter 4. Creating Larger, Lasting Projects provides ideas on how to increase sustainability and the scale at which the project operates.

Chapter 5. References provides the authors sources as well suggestions for more detailed reading.

Appendix 1. Questions for Donors reviews the key questions that donors can ask themselves to determine if the critical issues are being addressed in proposals for integrated projects.

Appendix 2. Organizations and Contacts lists the contact information for organizations that are involved in integrated projects.

Appendix 3. Additional Information on Linking and Managing PHE further explores information pertinent to linking the sectors conceptually, such as an example of a conceptual model for a PHE project.

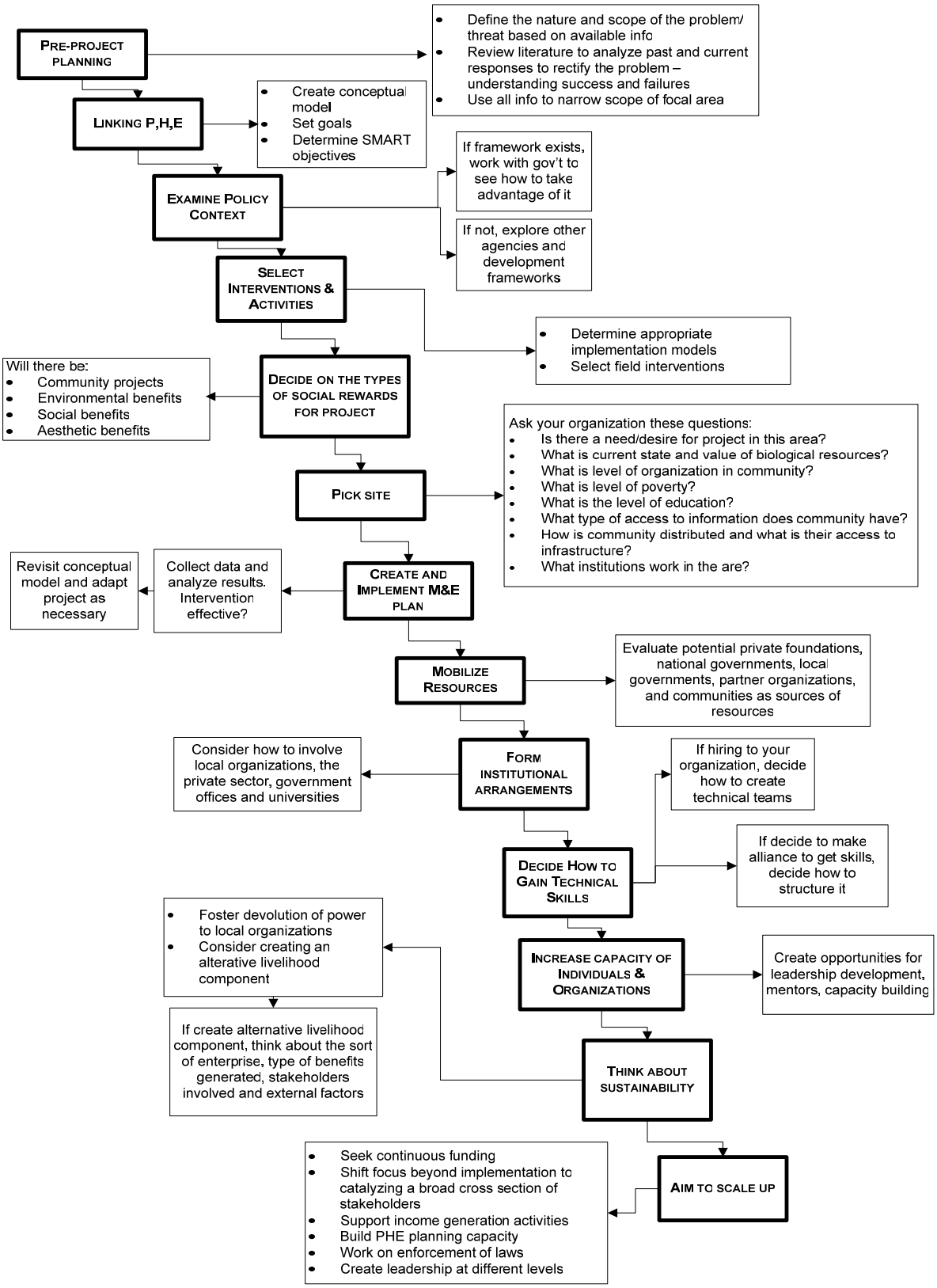
Appendix 4. General Models for PHE Service Delivery details the implementation models that are often used in integrated projects

Appendix 5. List of Individuals Interviewed for the preparation of this manual's content including the names and titles of key informants in the USA, Madagascar and the Philippines.

Each section concludes with a list of resources that can be explored for further support and information.

Figure 2 below offers a quick look at the steps covered in this manual. As there is no ***one*** way to create an integrated project, the chart is not intended to be a step by step plan. Rather, it examines the general steps an organization should review when creating or becoming involved with an integrated project. As such, this manual is designed not only for those organizations starting a project but also for those involved in a continuing project. For ongoing projects, the steps can be reviewed to determine if all relevant issues are being addressed in the project in its present condition.

Figure 2. General steps in creating a PHE project



CHAPTER 2. INTRODUCTION TO INTEGRATED PHE PROJECTS

A. PHE Projects throughout the World

Integrated approaches to environment, population and health are not new. As early as the 1970s family planning was being merged with other types of health services and natural resource management in what was called integrated rural development. For example, the Family Planning Association (FPAN) of Nepal partnered with World Neighbors to add an agricultural component onto an existing family planning project. It proved to be such a successful project that a local nongovernmental organization (NGO) replicated this model throughout Nepal. Another early pioneer in this field was the Population and Community Development Association (PDA) of Thailand, an NGO that brought family planning, water resource development, animal husbandry and marketing services to communities in Northeast Thailand. By the late 1980s and early 1990s, dozens of such projects were being developed in Latin America , Africa, and Asia (Engelman, 2005).

In the early 1990s, conservation organizations started taking a wider approach and began focusing more on community involvement in their projects – ultimately incorporating more aspects of development, including health service delivery, education, alternative livelihood development, and other interventions. The result was an interlinkage approach, the integrated conservation and development project, or ICDP. Many of the larger U.S.-based conservation organizations, such as World Wildlife Fund (WWF) and Conservation International (CI) launched ICDPs. The results of these ICDPs were mixed. One of the major lessons that they learned was that they still need to have focused goals – and not let the project become too diffuse. Conservation organizations also learned the importance of addressing other needs in the community, such as clean water and sanitation, and how these needs could tie into conservation issues. Projects that work across the domains of population, health and environment no longer take the same form as ICDPs, but have continued to evolve as organizations working in related fields continue to learn how to build on alliances between sectors instead of incorporating all functions into a single project (Kleinau et. al, 2003).

In the late 1990s private foundations, such as the Compton, Summit and David and Lucile Packard foundations, spurred interest in population-environment among conservation and community development NGOs with their dedicated funding programs. USAID also catalyzed several cross-sectoral initiatives that incorporated family planning and health interventions into conservation and natural resource management (NRM). These projects included ones in Africa (Kenya, Madagascar, Tanzania, Uganda, and the Democratic Republic of

Congo), Asia (Cambodia, Nepal and the Philippines) and Latin America (Mexico and Guatemala). The majority of these were implemented by international or domestic NGOs with environmental missions, but a few were started by health organizations that took on NRM or conservation activities to redress food insecurity and malnutrition concerns in impoverished rural or urban communities. More complete information about USAID's projects and partners can be found at the Environmental Health Project website (www.ehproject.org/phe/phe_projects.html).

B. Reasons for Integration

Intuitively, combining population, health and the environment makes sense. People and their livelihood and well-being are linked to their surroundings. They are an integral component to the natural ecosystem in which they live. People's lives are integrated; they are not defined according to different sectors (Engelman, 1998). By keeping this connection in mind, there are a number of potential benefits that can be gained, by the communities and the organizations involved, by implementing projects in an integrated fashion, rather than by sector.

Environmental/natural resource organizations that have worked on projects that provided a health benefit found that it enhanced their working relationship with communities. Oftentimes, environmental/natural resource organizations are charged with managing a resource that results in limiting the communities' access to those resources – protection by exclusion – through setting aside a protected area, whether a forest or a marine sanctuary and making off-limits resource collection like wood cutting, hunting, fishing, mineral extraction. People are cut off from their traditional practices. It can therefore be difficult for them to establish a positive relationship with the communities. But when they work with health organizations they are able to provide something tangible in return – this is particularly true for projects that provide an immediate impact, such as water purification or immunizations. Communities may also be more inclined to participate in the conservation project, and more receptive to conservation messages, if they feel they are receiving something in return.

For health organizations, linkage with natural resource management has enabled access to communities and clients that otherwise would be impractical or too expensive to reach. Approaching the project in an integrated fashion may also affect the manner in which the community participates: it can generate active involvement of a broader segment of the community (World Neighbors, 2006), increase women's and youth's participation in resource management (Hermann, 2004), and raise awareness and accountability of all citizens (ERI Madagascar, 2007).

Projects that integrate sectors also allow organizations to address the root cause of the situation in which they are working, rather than just proximate causes. For example, a resource such as timber may be considered threatened in an area. The proximate cause driving the problem is over-harvesting, but one of the root causes may be unsustainable population growth in the area. Offering reproductive choices as a critical element reduces this threat, while also improving women's and children's health (Kleinau, 2005).

One major potential advantage of integrated projects for all types of organizations is that they offer a strong possibility for generating high impact and achieving economies of scale. Organizations can potentially implement their projects in a more efficient manner, sharing transportation and field staff expenses with other organizations. In an effort to test the hypothesis that cross-sectoral approaches deliver bigger payoffs than programs that use vertical approaches, the PATH Foundation Philippines implemented a quasi-experimental evaluation of the Integrated Population and Coastal Resource Management (IPOPCORM) approach during 2001-2006. In some communities, independent approaches to coastal resource management (CRM) were applied to conserve marine ecosystems; in other communities, independent approaches to reproductive health (RH) management were implemented to improve human health. Then, in the IPOPCORM study areas, communities were empowered to implement CRM, RH and alternative livelihood activities in an integrated manner so as to improve food security, conserve marine ecosystems and enhance human health. Other areas where no interventions were introduced served as comparison sites. The evaluation results of IPOPCORM's operations research indicate the integrated approach yields significantly higher impacts on both reproductive health *and* coastal resource management (CRM) indicators compared to vertical approaches. Although IPOPCORM cost more to implement than either of the non-integrated approaches, the *combined* cost of fielding the independent RH intervention and the independent CRM intervention was considerably greater than the cost of fielding the IPOPCORM intervention. When its cost-efficiency was viewed together with its higher yielding impacts, the study concluded that IPOPCORM was the more *cost-effective* approach (Amarillo & Mamauag, 2007).

The need for integrated approaches is currently gaining global attention, seen most recently by the United Nations (UN) sponsored Millennium Ecosystem Assessment – an exercise that engaged over 1,300 experts from 95 countries in analyses of the effects of ecosystem change on human health and well-being (Millennium Ecosystem Assessment, 2005). It found that humans have changed ecosystems more rapidly and extensively over the past 50 years than during any other period, primarily to meet increasing demands for food, fresh water, timber, fiber, and fuel. It also estimated that 60 percent of the benefits people obtain from ecosystems are being degraded or used unsustainably. An important

inference the report draws is that the achievement of the Millennium Development Goals requires particular attention to improving ecosystem management, which necessitates **cross-sectoral** (or integrated) policies, institutions and investment on local, national, regional and global scales (Millennium Ecosystem Assessment, 2005). As such, the report represents a call to the health sector, not only to cure the diseases that result from environmental degradation, but also to ensure that the benefits that the natural environment provides to human health and well-being are preserved for future generations. Likewise, it is a reminder to the conservation sector that broader (cross-sectoral or integrated) approaches to ecosystem management are required to more effectively address the complex set of underlying causes of environmental change.

C. Lessons Learned from Madagascar and Philippines PHE Project Experience

Integrated PHE approaches are currently operating throughout the world. While this manual is based on the collective experience in PHE over the past decade, it draws heavily from the PHE experiences from Madagascar and the Philippines because of the fact that the integrated health, population and environment projects in these countries have been able to generate a larger impact in various ways. This manual aims to provide assistance to those projects that start small but are designed with the intent to be taken to a larger scale.

In Madagascar, USAID was the first agency to finance activities that built upon linkages between natural resource management (NRM), family planning (FP) and health under an Integrated Conservation and Development (ICDP) initiative during 1991-1997. A successive centrally-funded Environmental Health Project (2000-2005) promoted water supply and hygiene interventions in conjunction with family planning and improved agriculture practices in three major environmental corridors of the country. A parallel project financed by the Packard Foundation – the Madagascar Green Health Community (MGHC) project (2002-2005), applied integrated approaches coupled with social marketing to generate behavioral changes in health and NRM in 33 communes bordering priority conservation areas. Best practices from these projects were further brought to scale under USAID Madagascar's bilateral health (SanteNet) and environment/rural development (ERI) projects that span three ecoregions of the country.

In the Philippines, the Integrated Population and Coastal Resource Management (IPOPCORM) Initiative (2000-2007) implemented by PATH Foundation Philippines Inc. – a local health NGO, and the Population and Environment Co-Existence Development (PESCODEV) project (2000-2005), implemented by SAVE the Children/Philippines, promoted similar approaches to integrated coastal management (ICM) that incorporated family planning as a

strategic intervention to reduce fishing pressure and assure sustainability of coastal resources. Collectively, these two Packard Foundation-financed projects served over three-quarters of a million people living in half of the most imperiled marine conservation areas in the country.

In addition to their scale up success, these two countries provide interesting examples for several reasons. Advocacy efforts in these two countries have advanced integrated approaches at local and national levels, PHE projects have been sustained over long periods of time in these two countries, projects have been well-studied and documented, and there has been an active sharing of experience and lessons learned among PHE practitioners in each country (K. Mogelgaard, personal communication 2007). Both are considered to be biodiversity hotspots – or areas with high levels of endemic species, that have lost more than 70% of their original habitat. They both also face population pressure that is greatly impacting their biodiversity. The Philippines coastal ecosystems suffer from some of the highest population density rates (273 persons per km^2) in the world (CI, 2007), a factor which has been linked to the near collapse of that country's fisheries. Although population density is relatively low in conservation priority areas in Madagascar (42 persons per km^2), the low resilience of its biodiversity means that even a few hundred people engaged in destructive environmental practices can do irreparable damage to critical ecosystems that provide vital services such as watersheds that provide water resources and flood protection (A. Andrianarimisa, personal communication 2007). Table 1 provides information on the two countries.

Table 1. PHE Statistics for Madagascar and the Philippines

	Madagascar	The Philippines
Total population	17.3 million	84.8 million
Land area (sq miles)	227,000	116,000
Population growth rate	2.7%	2.3%
Percent urban	25%	48%
Total fertility rate	5.2	3.5
Population living below $2/day	85%	48%
Access to improved drinking water (rural)	34%	77%
Threatened species	538	475

Sources: Population Reference Bureau, 2005 World Population Data Sheet; World Conservation Union 2006, Red List of Threatened Species, United Nations Development Programme, Human Development Report 2005, adapted from personal communication Mogelgaard & Patterson, 2007.

Other commonalities between Madagascar and Philippines' experience with PHE include:

- **Decentralization.** The decentralized system of governance in both countries facilitated the adoption of integrated approaches. NGO leaders found that, once empowered, local governments in Madagascar (Mayors and commune development committees) were "the key to rapid scale-

up" of interlinkage approaches under the MGHC project (2002-2005) and "the engines of development for local communities" (Y. Ribeira, personal communication 2007). The World Bank also reported that the "de-concentration of social sector ministries has improved the outreach of health and education services" in Madagascar (World Bank, 2003, pg ii). In the Philippines, the Local Government Code of 1991 provided the initial policy structure that decentralized the management and administration of natural resources, health, education and other functions to local governments and empowered civil society groups and communities in local development planning and implementation processes. Devolution also enabled local Mayors to support community based and integrated approaches to family planning and NRM despite the lack of a national population policy and widespread opposition to contraceptives from influential church groups. Mayors took the leadership in organizing all stakeholders and partners to work together towards a common objective of PHE integration such as food security or poverty reduction.

- **Supportive national policies.** Notwithstanding the benefits to be derived from decentralization, national policies did exist that supported either population management (Madagascar) or environmental management with community participation (Philippines) that PHE advocates could use as platforms to drive PHE integration at lower levels.
- **Use of PHE information to choose sites**. Project planners used existing biodiversity conservation, demographic and socio-economic information to map the connections and interactions between environment, population, and health so as to guide the selection of sites where combined delivery of PHE interventions would generate the best return on project investment (i.e., 2002 mapping exercise in Madagascar by WWF and 2000 project design for IPOPCORM in the Philippines).
- **Building local governance capacity in communities.** Revitalizing local committees at the level of the commune (Madagascar) and the municipality (Philippines) and building their capacity to set realistic objectives, identify and facilitate small doable actions, and formulate annual development plans/budgets allowed them to access government funds at higher levels.
- **Participatory monitoring.** The same teams and organizations that facilitated PHE integration and actions conducted participatory project monitoring.

- **Operations research.** Operations research was conducted in both countries that demonstrated that integrated approaches create added value and synergy.
- **Partnerships.** The projects created partnerships between local government units and NGOs or among international agencies and local NGOs that facilitated PHE integration.
- **Information, Education and Communication (IEC) messages and campaigns**. Central organizing themes such as food security explained PHE linkages and influences, and educated communities about the necessity of both limiting family size and protecting critical habits to assure the sustainability of productive and life-supporting ecosystems for current and future generations. Projects in both countries also used peer-mediated behavior change communication interventions and social marketing approaches to expand access to family planning information and contraceptives, and to enhance acceptance of modern family planning methods.
- **Umbrella organization for coordination**. National NGOs served as the umbrella organization for coordination and provision of technical and training support to a number of local implementing NGO partners, i.e., Voahary Salama for MGHC project and PATH Foundation Philippines for IPOPCORM.
- **Leveraging of resources.** Donor agencies facilitated the ability to replicate or scale-up successful PHE approaches. For example, Adventist Development and Relief Agency (ADRA), Madagascar leveraged funds from the EU for a nutrition project that will replicate a PHE approach tested under a previous USAID-funded PHE project. Similarly, the PFPI leveraged resources from USAID and the United Nations Fund for Population Activities (UNFPA) to scale-up the geographic coverage of the IPOPCORM approach developed under a grant from the Packard Foundation.

Further resources on integrated PHE projects

Antipolo Declaration on Population, Health and Environment (PHE). (2004). Antipolo City, Philippines. Available online at: www.ehproject.org/PDF/phe/antipolo-declaration41.pdf This decree, formulated by the participants on the 1st International PHE Conference urges people from all sectors to "make the PHE link" because the earth's natural resources and systems and its human populations are inherently connected.

Engelman, Robert. (1998). Plan and conserve: A Source book on linking population and environmental services in communities. Washington DC: Population Action International. Available online at: www.populationaction.org/resources/publications/planandconserve/pdfs/planandconserve.pdf. This is one of the first major documents that try to guide people to both population and environmental resources.

Environmental Health Project, USAID. Available online at: www.ehproject.org/phe/phe_projects.html. This webpage describes the PHE projects at USAID and has links to another page with links to all reports submitted to EHP.

Steele, Paul, Gonzalo Oviedo, & David. McCauley (Eds.) (2006). Poverty, health, and ecosystems: Experience from Asia. IUCN, Gland, Switzerland and Cambridge, UK and Asian Development Bank, Manila, Philippines. This book is comprised of case studies that document the relationships among population, environment, and poverty and provides insights into the relationships between healthy ecosystems and healthy people.

D. Key Steps to Integrated Projects

There are several key steps to an integrated project. While these are all essential steps for project designers to review, they are not necessarily sequential. Many individuals who will be using this manual will already be at different stages of their project. The key is to review the steps to determine if the issues in each one have been addressed or need to be revisited. The manual is designed in a manner to cover each of the following points:

- **Linking and Managing P, H, E.** The conceptual links in the project and determinants of appropriate goals and objectives based on these links.
- **Determining Policy Context.** Thee role of the project in the larger policy operations where the initiative is located.
- **Selecting Interventions and Activities.** The potential implementation models, delivery mechanisms and field level interventions that can be used in project implementation.
- **Creating Social Rewards.** The different reward systems that can help influence individual decisions that drive behavior.
- **Determining Criteria for Site Selection.** The criteria that are important in choosing a site that is appropriate for a PHE project.
- **Creating a Monitoring and Evaluation Plan.** The plans to track and measure project effectiveness, and adapt the project as needed.
- **Mobilizing Resources.** The plans to ensure the financial future of the project.
- **Forming Institutional Arrangements.** The roles and types of relationships an organization can form in order to manage and implement the project.

- **Increasing Capacity and Knowledge.** The strengthening of organizations, government bodies, and community institutions in order to increase the sustainability of project activities.

E. Categories of Integration Strategies

There are multiple ways to think about creating an integrated approach. Margoluis et al. (2001) created the following categories in relation to conservation organizations working in combination with health strategies, but they are applicable to all approaches integrating population, health and environment. While these categories are a useful way to think about integrating PHE, realistically they are not discrete. Many projects do not fall within one category –rather, they are a combination of different strategies at different times.

- **Barter strategy.** This strategy is used when an organization provides a good in exchange for another. An example of this approach would be a conservation organization providing medicines in exchange for an agreement not to cut forests (Margoluis et al., 2001). In this case, there is very little, if any, emphasis on capacity building within the community – it is more of a simple exchange.
- **Entry point strategy.** In this approach, an organization focuses on an intervention that the community wants, in order to build a relationship that will allow the organization to continue to work in the community in the future, on broader topics. This is considered a good way for organizations to build trust within a community, as well as to address the immediate concerns of a community. For example, a community might not be interested in an integrated PHE project until more basic needs, such as the installation of a water supply system, are addressed.

These first two strategies do not necessarily try to link the P, H and E components. What differentiates the next two strategies is that they try to integrate these components.

- **Bridge strategy.** This strategy begins to try to link the PHE activities in the field conceptually. The goals are generally still single sector – for example a health organization would focus on health outcomes, such as reduced child mortality associated water-borne diseases. They see the other sector, in this case the environment, as a means to achieving that outcome, which is why they link the activities. An example would be a project that is designed to reverse aquatic habitat degradation that begins by addressing the lack of sanitation systems in communities along the banks of a river. Community members may perceive their greatest need to be the control of schistosomiasis, a parasitic disease transmitted through contact with water contaminated by poor sanitation – usually while bathing in rivers and lakes. An organization may focus on latrine

construction to immediately address the communities' needs for better sanitation, and at the same time, begin a community educational campaign that illustrates the relationship between sanitation, aquatic habitat quality, and health (Margoluis et. al, 2001).

- **Symbiotic strategy.** This is very similar to the Bridge strategy but is more focused on the conceptual and operational link among PHE factors. In this strategy, population, health and environment factors are viewed as equal contributors to a problem in your area. An example would be working with community members who are protecting their watershed in order to ensure a clean supply of water. In this case, the community already understands the conceptual link between watershed protection and a clean water supply. The project therefore may focus less on creating that conceptual linkage with the community, and more on how to actually protect the watershed – such as dealing with external threats such as commercial logging and road construction.

This manual focuses on the last two approaches. They both try to approach the situation in an integrated fashion – by examining population, health and environment factors and determining how best to intervene among these factors.

Further resources on categories of integration strategies

Margoluis Richard, Sam Myers, Jonnell Allen, Juanita Roca, Mary Melnyk & Jennifer Swanson (2001). An Ounce of prevention: Making the link between health and conservation. Washington, DC: Biodiversity Support Program. This report reviews the integration of population and health into conservation projects, providing a framework for integration and a review of the major integrated projects.

World Wildlife Fund (WWF-US). In preparation. Manual on how to integrate health and population into conservation projects (working title). Washington, DC: WWF. This is a manual on integrated projects specifically designed for conservation organizations that wish to add a health and/or population component.

CHAPTER 3. DESIGNING AN INTEGRATED PHE PROJECT

It is important to have an enabling environment when designing an integrated project. This includes having supportive national policies (i.e., decentralization or environment or population policy), favorable site conditions and sufficient institutional capacity (both governmental and private sector). All of these factors must be considered when designing the project. In addition, PHE initiatives can be created out of projects at different stages – some start from scratch, others add on a component to an existing project. The environment under which the project operates, as well as the stage at which the project is at when it becomes integrated, can all affect the project outcome. Because of this variability, there is no **one** recipe to follow when creating a PHE project. The following section, therefore, reviews the **general** steps that should be considered when creating a PHE project – though they may not be in the particular order that is relevant to your project.

A. Linking and Managing PHE

Before planning the project or adding on a component, you must understand the situation at the proposed project site. You need to identify all the important factors at the site and how they potentially affect each other. Doing so will allow you to understand how an intervention could affect all the factors involved as well as your project outcome. It is important to understand not just the local micro-level factors, but also larger, macro-level factors as they can also influence the project result. For example, national policies may affect the ability of communities to access family planning information or to manage their forests. This can also help you understand how the project may fit into a larger policy context.

Part of understanding these linkages is thinking about the assumptions behind them and the assumptions that you will make in your project. For example, if you are trying to introduce family practice methods through youth educators, you are making the assumption that the youth educators will have influence over your target audience. If your target audience is sexually active adolescents, this might be an appropriate intervention. If your target audience is married adult couples, this might *not* be appropriate. These assumptions will prove to be very important to remember when you are monitoring and evaluating your project. If your results differ greatly from what you expected your intervention to achieve, you may find that your assumptions were incorrect.

Once you have a solid understanding of the factors at the site, you can develop a management plan for your project – you can create appropriate goals and objectives, identify interventions that will help you achieve your goals and

determine what resources are needed to do so. One way to organize this information is to create a Logframe matrix (see Appendix 3 for an example).

1. Creating the conceptual PHE Links

A useful way to gain a greater understanding of the factors at a local site is to create a conceptual model of the dynamics. This is a particularly useful exercise for PHE projects due to the complex nature of these types of projects. It is important to understand how the environment and health components are linked – and how to convey this linkage to the community. For example, you may need to understand how the management of the forest is affecting the quality and quantity of the water supply, which is then affecting the health of the local children.

A conceptual or logic model is a graphic representation of the relationships among these factors. It usually includes four symbols:

- **Target condition.** This is the situation that you are aiming to influence through your interventions – for example, water quality for several communities in a watershed.
- **Factors**. These are the conditions, policies, behaviors and norms that affect your target condition – for example, the management of the local forest area, the use of pesticides in their agricultural crops, or the national policies on maintaining forest cover on properties – all factors that are affecting water quality.
- **Activities**. These are the proposed interventions that you will use to influence the target condition, in this case, water quality – such as alternative livelihood projects that reduce use of pesticides and environmental education on effects of pesticides on health.
- **Relationships.** These are the links between the target condition, factors and activities.

(From Margoluis & Salafsky, 1998).

A good conceptual model:

- Presents a picture of the situation at the project site.
- Shows implicit linkages between factors affecting the target condition.
- Explains major direct and indirect threats affecting the target condition.
- Presents only relevant factors.
- Is based on sound data and information.
- Results from a team effort.

(Margoluis & Salafsky, 1998, pg 28)

Figure 3 represents a general conceptual model. Figure 4 demonstrates how this model can be adapted and used by project planners, in this case, for the IPOPCORM project in the Philippines.

Figure 3. Example of a conceptual model
(from Conservation Measures Partnership, 2007, pg 19)

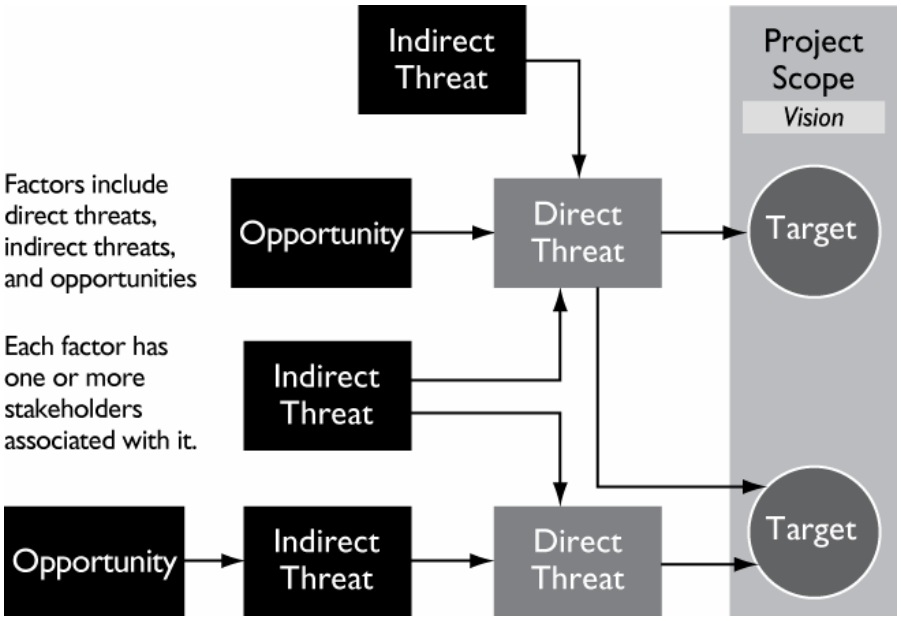
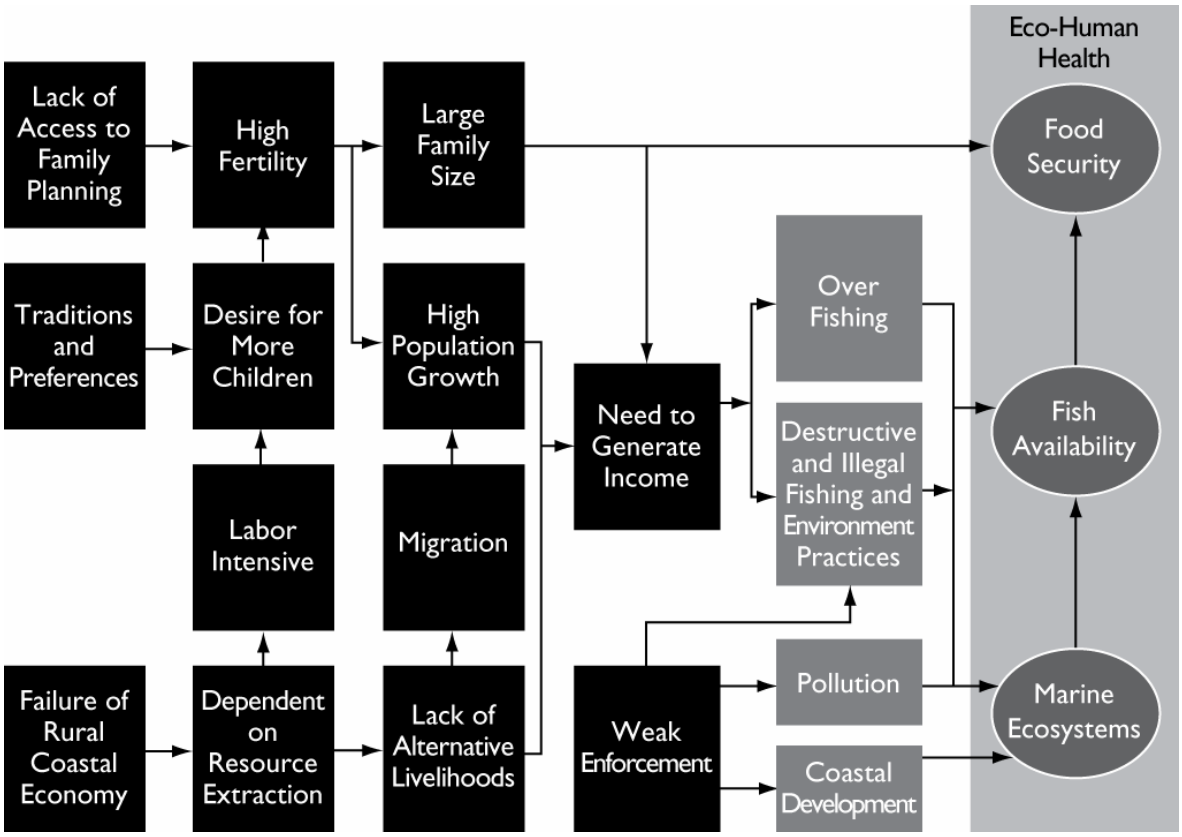


Figure 4. Example of a conceptual model for the IPOPCORM project in the Philippines



This model enhanced understanding of the interlocking social and environmental challenges in the Philippines coastal zone and informed the selection of IPOPCORM's field level interventions – which focused on five opportunities depicted in the logic model e.g., lack of access to family planning, lack of alternative livelihoods, weak enforcement of environmental laws and codes, destructive and illegal fishing, and traditions and preferences that were undermining human and ecosystem health.

Once a first draft of a conceptual model is completed, you should do a site assessment to ground truth it. This involves talking with local stakeholders, policy makers, local government officials and chief executives of private organizations, particularly NGOs. It also involves gathering existing social and demographic information, such as the composition and distribution of the population particularly in conservation priority areas. Once you have done this, you will need to revise your model to ensure that it accurately reflects current site conditions.

2. Setting integrated goals

A goal is a formal statement detailing a desired impact of a project such as the desired future status of a target or the desired future condition of a community. Goal statements reflect the project's long-range vision and overarching purpose which, in the case of integrated initiatives, often relates to balancing population growth and natural resource use.

A goal statement should be:

- **Linked to targets.** Directly associated with one or more of your targets.
- **Impact oriented.** Represents the desired future status of the target over the long-term
- **Measurable.** Definable in relation to some standard scale (numbers, percentage, fractions, or all/nothing states).
- **Time limited.** Achievable within a specific period of time, generally 10 or more years.
- **Specific.** Clearly defined so that all people involved in the project have the same understanding of what the terms in the goal mean.

(Conservation Measures Partnership, 2007)

This process of setting goals is particularly important for PHE projects as it helps determine if an integrated approach is appropriate. One of the major lessons that conservation organizations learned from creating ICDPs is that you need to be very clear about what your goals are, and what is feasible to achieve. In some cases, a single sector goal – such as conservation or health – may be more appropriate. But having a single sector goal does not limit your ability to create an integrated approach that involves factors from other sectors. For example if you are trying to protect a forested area that is being threatened by

agricultural expansion, your goal may only involve hectares protected, but your project intervention may address population growth. Again, by creating a conceptual model and understanding all the factors involved, and how they affect your target condition, you may find activities in different sectors that may help you achieve your goals.

Your goal should be realistic and based on what you can achieve – you need to set goals according to the resources you have available or believe you will be able to leverage from other sources. Once you determine your objectives and activities, it will be easier to determine how to achieve your goals within your budget.

Goals also need to be appropriate to the site. To achieve this, goals should be developed in conjunction with the stakeholders of the project. This role of the community has been demonstrated as integral to successful development projects for many years. And in a recent review of integrated PHE projects (on behalf of the Packard Foundation and USAID), Pielemeier (2005) found community involvement in the needs assessment phase to be a major factor contributing to project effectiveness. Organizations may enter into a community with a specific idea of a type of project that they want to do, only to find out that the community is not interested in it or does not feel it is of primary importance. A community may be more interested in addressing some of its more basic health concerns, such as access to clean water, before it will embrace a more integrated approach. In this case, a different type of approach, such as the entry point strategy, may be more appropriate – an organization may build a health post for a community, as a means of developing a relationship with them to then create more integrated projects later. Organizations must be flexible – projects will be more effective if they can address what the community considers its primary needs.

3. Creating objectives and strategies

Once your goals are established, you need to create objectives for the project. An objective is a formal statement detailing a desired outcome of a project. One way to think of objectives is that they need to be SMART:

- **Specific.** Is the desired outcome clearly specified?
- **Measurable.** Can the achievement of the objective be quantified and measured?
- **Appropriate.** Is the objective appropriately related to the program's goal?
- **Realistic.** Can the objective realistically be achieved with the available resources?
- **Timely.** In what time period will the result be achieved?

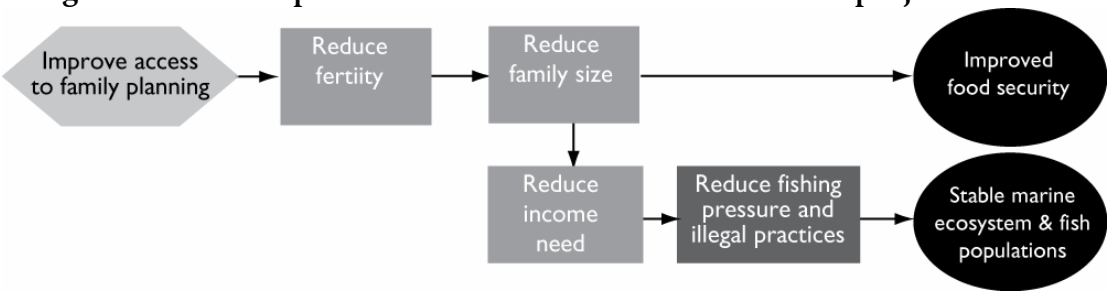
(Mentor Training Resources, 2007)

It is often helpful to articulate both an overall objective and specific (intermediate) objectives to explain how you intend to work towards the stated goal of the project, and the results you anticipate in the short-term. For example, the MGHC project articulated the following objectives that contribute to the realization of the project's goal "[h]ealthy and well-nourished populations living in healthy environments based on rationale management of natural resources at the community level" (JSI/R&T, 2003, pg 4).

> **Overall Objective**: Increase the community capacity to improve their health status and food security using practices that also protects the environment
>
> **Specific Objectives:**
>
> - Improve the health status of local populations.
> - Increase farmers' income and food security.
> - Improve natural resource management.
> - Increase use of modern contraceptives.

After creating your objectives, you then need to develop a list of potential strategies. Examining your conceptual model will help determine where you can most appropriately intervene. You need to examine all the assumptions of the links between the factor where you will intervene and the desired result. One way to do this is to develop a results chain – box and arrow chains that define the underlying causal logic behind various interventions – which show how people believe that the interventions they apply will lead to a desired change (Stem & Margoluis, 2004). A results chain is similar to a conceptual model, but rather than review all threats and influential factors, it focuses on how an intervention will affect the desired outcome. Conceptual models show the situation before an intervention begins, while a results chain shows the situation which is created from the intervention (Foundations of Success, 2007). Figure 5 demonstrates a results chain from the IPOPCORM project (based on the conceptual model in Figure 4). In this case, one intervention that project designers chose was to improve access to family planning. Doing so ultimately allowed them to affect their target outcomes: improved food security, and stable marine ecosystems and populations of fish for food.

Figure 5. An example results chain from the IPOPCORM project



Further resources on linking and managing PHE

Conservation Measures Partnership. (2007). Open standards for the practice of conservation. Available online at: www.conservationmeasures.org. Conservation Measures Partnership, consisting of 11 of the major conservation organizations, has developed a set of adaptive management open standards.

Foundations of Success. (2007). Using Results Chains to Improve Strategy Effectiveness. An FOS How-To Guide. Foundations of Success, Bethesda, Maryland, USA. This paper guides readers through the development and use of results-chains, with information on how they can be used to measure project effectiveness.

Golder, Bronwen & Anitry N. Ratsifandrihamanana (2002). Mapping the connections: The population-environment lessons from Madagascar. Washington DC: World Wildlife Fund. This publication is a good example of using maps to prioritize what types of projects are appropriate in different areas.

Kleinau, Eckhard & Jennifer Talbot. (2003). When the whole is greater than the sum of its parts: Integrated indicators for population- environment programs. Washington, DC: Woodrow Wilson International Center for Scholars. Population, Environmental Change and Security Newsletter, Spring 2003 Available online at: www.wilsoncenter.org/topics/pubs/pecs.pdf

Logic Model Development Guide www.wkkf.org/Pubs/Tools/Evaluation/ Pub3669.pdf. This guide explains how mapping a proposed project can help you visualize and understand how human and financial investments can contribute to achieving your intended program goals and can lead to program improvements.

Margoluis, Richard., & Nick Salafsky. (1998). Measures of success: Designing, managing, and monitoring conservation and development projects. Washington, D.C: Island Press. This book offers detailed instructions on designing, managing and measuring the impacts of community-oriented conservation and development projects.

MENTOR Training Resources. Monitoring and evaluation network of training online resources. Available online at: www.cpc.unc.edu/measure/training/mentor. Accessed August 2007. Through MENTOR (Monitoring and Evaluation Network of Training Online Resources), MEASURE Evaluation makes available free training materials and tools on M&E topics for use by researchers, program managers, trainers, policy makers, students, and other public health professionals.

Millennium Development Goals Indicators. http://unstats.un.org/unsd/mdg/default.aspx. This site presents the official data, definitions, methodologies and sources for the 48 indicators to measure progress towards the Millennium Development Goals.

Population, Health and Environment (PHE) Toolkit. www.ehproject.org/phe/phe_toolkit.html#c . This site provides resources on a variety of PHE topics such as design, planning and implementation.

Population Reference Bureau. Available online at: www.prb.org This website is a good source for information on data, events, and publications related to global population levels. For example, it has a database that contains data on 136 population, health, and environment variables for more than 220 countries, 28 world regions and sub-regions, and the world as a whole.

Stem, Caroline & Richard Margoluis. (2004). Conventional wisdom on causal linkages among population, health, and environment interventions and targets. Bethesda, MD: Foundations of Success. This document reviews causal linkages specific to PHE projects.

United Nations Environment Programme – World Conservation Monitoring Center. www.unep-wcmc.org/capacity_building/index.html. This site has extensive environmental data and information on where to access data for countries throughout the world.

B. Determining Policy Context

Ideally, early in the development stage of the project, you should identify existing policy frameworks within the country that could support the project. If the project is already ongoing, it is still advisable to review the policy context in which the project is working to determine if there is a framework under which it could operate. A policy framework may be a national or sub-national framework, agenda, ordinance, code, guideline or plan that relates to the outcomes that you are trying to achieve. In order to be effective, the policy framework must be recognized and supported by both government and civil society. Working within existing frameworks will allow you to take advantage of, and contribute to, an existing agenda and its cross-cutting issues rather than trying to create new ones from scratch.

PHE projects create unique challenges and advantages in terms of looking for appropriate policy contexts. Policy frameworks specific to population, health and environment do not normally exist. However, PHE projects don't necessarily need to work within a PHE policy– what is important is that they are consistent with the priorities and programs/projects of the national government or the decentralized sub-national government units to which they have transferred authority and decision-making power.

One of the major advantages of integrated PHE approaches is that they can often fit under a variety of different frameworks that do not necessarily have to be just PHE. For example:

Food security – PATH Foundation Philippines was able to take advantage of an existing food security framework within the government and link their IPOPCORM initiative to an existing integrated coastal management agenda promoted by the Philippines Department of Environment and Natural Resources (DENR) and the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR). The framework was based on three essential prerequisites for sustainable use of coastal resources that included family planning as a strategic intervention to reduce human pressure on the natural resource base and fisheries resources in the coastal zone.

Climate change – Climate change is becoming a more prominent issue with most governments throughout the world. Some of the major concerns with climate change are the effects it will have on human health (such as diseases, extreme temperatures) and biodiversity (adaptability of species, ecosystems). Initiatives such as the New Partnership for Africa's Development (NEPAD) are supporting responses that empower local communities, strengthen enforcement of environmental agreements, introduce green and clean technologies and promote other solutions (United Nations Chronicle Online Edition).

Disaster mitigation – Several countries that are at risk of, or have recently experienced, severe weather, such as Vietnam and Thailand, are creating national policies related to disaster mitigation and mangrove reforestation for surge protection. Integrated approaches involving natural resource management, disaster mitigation, capacity building, and infectious disease control could all fit under these frameworks.

HIV/AIDS – HIV/AIDS is threatening the gains achieved from decades of conservation work in Malawi, Mozambique and other countries where breakdowns in NRM governance structures, law enforcement and community participation in conservation work is occurring due to high HIV/AIDS prevalence in the local population (Oglethorpe & Gelman, 2006). Approaches that facilitate simultaneous delivery of NRM, HIV prevention education, condom access, and care and treatment of persons with HIV/AIDS are examples that could fit under these frameworks.

Resource governance – Transfer of forest assets to local community organizations for sustainable management and protection is a devolution process that was first demonstrated in Nepal over forty years ago. Governance programs and projects that build the capacity of user groups to manage natural resources in a sustainable and democratic fashion usually operate in tandem with forest transfers. The USAID Nepal funded Strengthening Actions in Governance of Natural Resource Management (SAGUN) project is one example. Such governance mechanisms can also

serve as platforms for PHE integration. For instance, the Resource Identification and Management Society (RIMS) - a local implementing NGO partner under SAGUN, was able to link and promote family planning, alternative energy and other sustainable livelihood interventions with governance activities ongoing in remote forest communities in the mid-hill district of Dhading, Nepal (RIMS, 2007).

A project should be able to vertically link among the policies that exist at different levels, each lending support to the overall integrated vision. Support of integration at the local level allows the communities to better understand the linkages, which then contributes to sustainability of the project. Support at the higher levels, such as regional and national policies, offers several potential advantages. First, you may be eligible for additional funding by drawing upon existing resources or teaming up with government offices that are already working on related issues. This will also minimize the chance that you will be duplicating efforts with a governmental office. You can often leverage more resources if your project contributes to a government goal. Linking to existing policies and projects contributes to the sustainability of the project. Community-based projects will have a much harder time becoming sustainable without the convergence of national or sub national policies and local initiatives (CRMP Philippines, 2000). Support at this higher level may also be important if the project experiences resistance from other institutions. For example, in the Philippines, several projects found this kind of support to be important when meeting resistance to family planning from the church.

In instances where a relevant government policy framework is lacking, you may be able to link your project to an existing framework used by other development assistance agencies such as the "Sustainable Livelihood" framework of the United Kingdom's Department For International Development (DFID), or the Nature, Wealth and Power (NWP) framework that was used in West Africa to highlight the importance of income (wealth) and good governance (power) to effective natural resource management (nature). The NWP framework was adapted by stakeholders in Madagascar who added health as a separate domain resulting in the Nature, Health, Wealth and Power (NHWP) framework. All four programs of USAID Madagascar mission operating in 2004 were considered in developing this framework to encourage a "minimum package" of interventions from at least four domains (1. Natural resource management/environmental conservation, 2. Health/family planning, 3. Livelihood/income generation, and 4.Democracy/good governance) being offered to as many intervention sites as possible (Gaffikin, 2007).

In countries where decentralization has occurred or is in process, you should seek to identify the legal entities – at each level in the system – to which the government has devolved authority in the areas of public finance and management. In the Philippines, the core entities are the Municipal (county) and

lower level *Barangay* (village) administrative and management units which, collectively, are referred to as Local Government Units (LGUs). In Madagascar, the core units are the *Chief de Region*, the Commune and the lower level *Fokantany* (village). Some international donor agencies channel resources directly to local government units to support policy reforms in the social sector. A sub-national policy reform agenda might provide a relevant platform that you could use to link your PHE project and possibly leverage resources. It is often easier and faster to get decisions from local government units compared to central government ministries which tend to be more bureaucratic and compartmentalized. However, you first may have to invest time to educate local authority figures about the cost effectiveness of integrated approaches in order to realize such a buy-in.

Further resources on determining policy context

Population Action International. www.populationaction.org. Population Action International (PAI) is an independent policy advocacy group working to strengthen political and financial support worldwide for population programs grounded in individual rights.

United Nations Environment Programme – World Conservation Monitoring Center. www.unep-wcmc.org/capacity_building/index.html. UNEP has extensive information on global environmental policies.

C. Selecting Interventions and Activities

PHE interventions generally aim to reduce unmet family planning need, and to minimize the harmful effects of human activity on the environment and their consequences for human well-being. Before selecting project interventions and the activities that enable their delivery and diffusion, you should first review existing information to gain a better understanding of the main driving forces that are shaping relationships between human activities and the environment in your focal areas including population pressures, economic conditions and other factors. Natural resource consumption is one of the main sources of impacts on the environment. Thus, you will want to review secondary data on agriculture, fisheries, forestry, mineral and/or energy consumption, depending on the focus of your project. Also, be sure to look for information about how national and local governments, businesses and households are adapting to changing environmental conditions and whether response mechanisms have been effective. In the Philippines, for example, NGO projects designers found such information in the Philippines National Biodiversity Strategy and Action Plan (DENR/UNEP, 1995), and other databases such as the Demographic Health Survey (DHS) data. They also used census data from the National Statistics Office, and provincial and municipal government offices in the project focal areas.

Once you have a clear understanding of the site conditions and the project you would like to create, you then describe it as a set of simple separate activities and interventions. Again, a useful tool for doing this is the logframe – or a matrix that summarizes what a project intends to do, how it intends to do it, what its assumptions are, and how the outcomes will be monitored and evaluated (see Appendix 3). You need to try to determine, through previous experience or a 'pilot test' how much input/processes (activities/interventions) are needed to achieve desired/expected results. This is a key aspect of translating the needs assessment into activities/interventions and values (targets) listed for the indicators. Target setting is key to interpreting monitoring results and overall measures of achievement of objectives, ideally accompanied by an evaluation that explains why the objectives were or were not met (Gaffikin, personal communication 2007). One of the main factors that contributed to the success of the IPOPCORM project was its conceptual framework, which played an important role in guiding the design of the integrated approach and the mix of "community based" and "policy oriented" interventions and indicators (L. D'Agnes, personal communication 2007).

The activities themselves don't necessarily need to be integrated, but can also be done in a parallel fashion (implemented at the same time in the same project) in order to achieve your project goals. Work with your technical teams to choose interventions that can generate high impact at relatively low cost and be promoted with community involvement. A good example of an effective low cost health intervention is the distribution of insecticide impregnated bednets for the prevention of malaria – they are inexpensive, can be distributed by lay-persons and have helped to reduce child mortality rates by 20% (Lengeler, 2004).

Where feasible, the full range of reproductive health options should be offered to couples and sexually active young people, including emergency contraception. Some family planning methods can be promoted by trained community-based distributors, e.g., condoms, oral contraceptives and injectables (in some situations). Others must be administered by clinic based health workers (e.g., intra-uterine devices, surgical methods of contraception). NGOs planning to develop community based distribution (CBD) systems to expand access to family planning services also must establish linkages and referral mechanisms with the formal health system so that CBD agents can pass on information to clients about where other family planning and health services can be accessed.

Depending on community needs and local capacity, PHE projects may include a wide variety of interventions. Some examples include:

- Community organizing and social mobilization for change.
- Community health insurance.

- Community banking schemes.
- Malaria prevention through promotion of insecticide-treated bednets and vector control measures.
- Community-based distribution of family planning commodities, point-of-use water treatment products, iodized salt or anti-malaria pills.
- Fuel-efficient and smokeless cooking stoves that can reduce indoor air pollution and firewood consumption.
- Improved access to safe water for household use.
- Installation of appropriate latrines and promotion of other hygiene behaviors.
- Capacity building for user groups to manage natural resources in a sustainable and democratic way.
- Sustainable agriculture and fishing practices for improved food security and child nutrition.
- Establishment of protected areas (PA) or better management of existing PAs.
- Habitat enhancement and ecosystem rehabilitation e.g., mangrove reforestation.
- Legal literacy to increase awareness and compliance with environmental laws.
- Literacy opportunities for women and girls.
- Advocacy for gender and social inclusion in natural resource management.

Table 4 in Appendix 4 provides further information on evidence-based interventions that can impact health, conservation and population outcomes. Again, re-examining your results chain and the assumptions you made about links between factors may give you further insights into which intervention or mix of interventions is most "strategic" in terms of influencing the outcomes anticipated along the chain.

Where appropriate and feasible, interventions that generate "value-added" or multiple impacts are preferable to those that impact a single objective. For example, the IPOPCORM project applied a community based strategy for the distribution (CBD) and social marketing of contraceptives that generated impact on both reproductive health and livelihood outcomes in poor fishing communities by expanding access to affordable contraceptives and creating economic opportunities for community residents trained as CBD agents. Other examples include two projects in Madagascar that applied agriculture and ecology (agro-ecology) interventions that were strategic and interlinked. The first is an ongoing project implemented by the Adventist Development and

Relief Agency (ADRA) that supports reforestation using fast-growing and native *Moringa* trees, which yield large production of high-protein biomass for human and animal consumption and also help with soil regeneration and serve as windbreakers. The Madagascar Green Healthy Community (MGHC) project offers a second example where organic waste management and composting techniques were simultaneously promoted to enhance crop production, nutrition status of children and environmental hygiene in the homestead.

1. Community implementation models and delivery mechanisms

After selecting the mix of interventions your project will promote, you need to decide how they will be diffused in your focal area, what mechanisms will be used to deliver services and who will be the main players in service delivery. There are a variety of different implementation models and mechanisms for delivering PHE services. You need to determine which would be appropriate for your project. You may want to combine different models or use several simultaneously. Some models that have been effectively used in integrated projects in the Philippines, Madagascar, Tanzania and Nepal include:

Social mobilization models such as Appreciate Community Mobilization (see Box 1), Champion Community (community target setting, monitoring, celebration), and its upscale version- Champion Commune or Kaominina Mendrika (KM). The KM approach enables community leaders to motivate and facilitate the planning, implementation and monitoring of "small, doable actions" that can improve family wellbeing. KM awards different colored "stars" to communes that achieve their established objectives – each star representing a different domain. The KM approach involving "stars" is a way to operationalize the Nature-Health-Wealth-Power (NHWP) framework at the commune level.

Community management models utilize conservation mechanisms, such as Community-based Natural Resource Management (CBNRM) and Community-Based Coastal Resource Management (CBCRM), and build capacity of existing local institutions to manage and implement health and livelihood strategies in tandem with conservation work. Experience from the Philippines and other countries suggest this model works best when a staff member, such as a community (social) organizer, is based at the project site either on a full or part-time basis, to assist the community based organization responsible for resource management (COBA) with good governance and other institutional strengthening, as well as PHE integration. For CBNRM and CBCRM to succeed, the benefits from improved natural resource management must outweigh the transaction costs associated with the functioning of the COBA. Communities also must perceive net benefits from these institutions, if they are to have local support (Hockley & Andriamarovololona, 2007)

Community outreach peer education (COPE) models build systems to extend PHE information and technical services to remote communities using paid extension workers. This model is often used in conjunction with peer education approaches. The outreach worker/extension agent identifies and mentors community leaders from among target groups in the community who serve as role models, peer educators and change agents for desired improvements in health, agriculture and conservation practice. At IPOPCORM, one outreach worker per 5000-10,000 population is usually required to achieve sufficient penetration of interventions in the densely populated coastal areas where IPOPCORM operates. On average, each outreach worker is able to train and mentor between 8-10 peer educators who deliver behavior change communication and other information, education and communication (IEC) interventions to family members, friends and neighbors and who refer individuals to designated service points for additional services. Peer educators maintain daily logs and record the number of interpersonal contacts and referrals made each day as well as any problems they may have encountered in performing their tasks. Outreach workers convene regular meetings where they review the log books and provide guidance and continuing education on how to motivate, educate and follow-up with clients to facilitate desired behavior change.

Farmer-to-Farmer models use elements of Madagascar's KM in conjunction with peer education and social marketing strategies. The model was pioneered under the EcoRegional Alliance Initiative (ERI) that is helping communes along forest corridors in Madagascar's eastern province of Fianarantsoa to link agricultural techniques with environment-friendly economic development strategies. The Farmer-to-Farmer model works within the NHWP framework and uses KM and peer education approaches to assist farmer's cooperatives and associations

Box 1. Appreciative Community Mobilization

Appreciate Community Mobilization (ACM) was born out of the organizational development field's experience with "Appreciative Inquiry" which focuses on an organization's strengths and works to build on them. An appreciative methodology that uses a "4-D" cycle (Discovery, Dream, Design and Deliver) was adapted by Save the Children in the Philippines to help communities improve family health by learning from and building on their positive past experiences to plan future actions. ACM processes strengthen the community's ability to set priorities and to plan, implement and monitor their progress. SAVE further adapted the ACM process for use in the PESCODEV Project which was able to address root causes of poverty and food insufficiency in the province of Northern Iloilo by building on the strengths, structures and resources of the community ("barangay") and local government.

ACM Steps

1. Select a health or development issue and define the community
2. Put together a community mobilization team
3. Gather information about the issue and the community
4. Identify resources and constraints
5. Develop a community mobilization plan
6. Develop your team

Sources: Healthy Communities Partnership Organization, 2007 PESCODEV Training Manual on Family Planning Action Sessions, available online at: www.ehproject.org/phe/phe_toolkit.html#two1

(Koloharena) and their rural federations to develop and implement annual work plans. It has been applied and replicated on a large scale with over 17,000 farmers groups throughout the province (M. Freudenberger, personal communication 2007). The Koloharena are also exploring the feasibility of adding contraceptive supplies to their distribution centers that stock and market agricultural seeds and farm tools to their members (M. Park, personal communication 2007). In Madagascar, health and education services are more devolved compared to the environment sector, whose personnel and services are based mainly at central and regional levels. As such, there are fewer existing structures at the commune level to drive PHE integration around agro-ecology linkages.

Child-to-Community models adapt elements of the Champion Community approach to motivate children to achieve objectives and share their knowledge with parents and other members of the community. Often these models are grounded in the educational system and aim to increase life-skills, school enrollment, and school attendance through PHE themes. Life skills that encourage improved personal and environmental hygiene practices such as proper hand washing at critical times, and safe disposal of fecal waste, are examples of child-to-community actions that can impact both health and environment indicators (Rainey et al., 2006). A similar model that targets teenagers (15-19 years) with adolescent reproductive health service – as well as conservation actions – are truer to the PHE concept in that they contain the "P" component which is often missing from models targeting younger age groups (Kleinau et al., 2005). Some of these projects also incorporate democracy and good governance components, such as the youth *tambon* (village) government model pioneered by the Population and Community Development Association of Thailand (M. Viravaidya, personal communication 2007). Other projects in Nepal and the Philippines incorporate enforcement components whereby teens are empowered to patrol protected areas and apprehend illegal poachers/fishers or to direct coastal clean-up operations involving both youth and adults.

Initiatives such as IPOPCORM and MGHC encompass several models under one umbrella PHE approach implemented by several different partner NGOs. While the above models have mostly evolved within the context of rural development initiatives, some have also been applied in urban situations. The Coastal Conservation and Education Foundation (CCEF), for example, implements a community management model in marine hotspots near Cebu City with interlinked conservation, family planning and water resource development components (CCEF, 2007).

2. Field level interventions

In addition to the implementation models, you need to decide what types of field level interventions are appropriate to the local conditions and issues that your project hopes to remediate. The very first field intervention you might consider is community research to get a better understanding of how poor households work in your target communities, and the livelihood strategies they pursue to meet their needs. This involves gathering information on such variables as family size and wealth in terms of land, money, and equipment and how household members spent their time. Researchers note that that "[h]ousehold strategies as the behavioral basis of population-environment-development links have not been adequately explored. Understanding how rural households behave, how they plan, how their strategies are formed and linked, is critical to understanding how programs and policies can best increase their welfare and reduce conflicts among goals (Clay et.al., 1998)." Such information is not only useful for informing field level interventions and remediation strategies, but the same data could also serve as benchmarks against which you can later track progress towards stated objectives and anticipated results. Examples of field level interventions that evolved from community studies of poor rural households in coastal Philippines include the following:

- Promotion of alternative livelihoods that enabled fishers to diversify their income source and provide a safety net during the period of regeneration of fish sanctuaries.
- Extension of micro-credit with attention to gender equity that enabled coastal families to initiate small and environment-friendly enterprises that reduced dependency on aquatic livelihoods and fishing pressure.
- Community-based distribution mechanism that expanded couples' and young adults' ready access to affordable methods of family planning and emergency contraception and saved time and money spent on traveling long distances to obtain resupplies of contraceptives.
- Integrated learning tools such as family budgeting exercises that increased male awareness of the link between family size and his workload, and improved men's attitudes towards family planning and interest in taking on roles as peer educators for responsible reproductive behavior and sustainable fishing practice.
- Audience-specific information, education and communication (IEC) messages and materials that dispelled common misconceptions about contraceptives and mistaken belief among fishers that "there will always be enough fishes in the ocean no matter how many we catch".
- Participatory resource assessment and mapping exercises with community-level groups that increased awareness of the inter-relationship of coastal

ecosystems and the necessity of limiting family size and protecting critical habitats to assure food security from the sea.

- Provision of essential facilities, equipment and training to delineate and guard marine protected areas that enabled members of the community to patrol "no take" areas and empowered them to apprehend illegal fishers/loggers.

Projects often use a variety of different implementation models and field interventions, depending on the need. In the Environmental Health Project (EHP) in Madagascar, causal linkages between poverty, large family size, unsustainable agricultural practices and food insecurity inferred the need for 10 different sets of interventions and the use of social marketing and social mobilization strategies (Champion Community, Child-to-Community and Farmer-to-Farmer) to operationalize PHE integration (Kleinau, 2005).

Information, education and communication (IEC) interventions are common to all of the implementation models discussed above. Some also include policy advocacy activities and strategies. In designing IPOPCORM's IEC and advocacy component, PFPI first conducted community research to gain insights on coastal resident's attitudes and perceptions about population, environment and development, and to collect information on their media preferences. The data showed large numbers of respondents knew someone *personally* who engaged in illegal fishing or logging practices. Most, however, dismissed the issue because such practice had become the norm or because they thought "only the government has the capacity to protect the environment" (DRDF/PFPI, 2003). Others wanted to space or limit the number of children but were afraid to use modern contraceptives because of misconceptions about safety issues or fear of reprisals from conservative groups and religious leaders in the community. This information guided the project's IEC strategy, which can empower communities to mobilize their indigenous resources and assume responsibility for protecting their own environments and family wellbeing. Other data showing weak enforcement on the part of municipal governments guided the design of advocacy communication interventions targeted to local chief executives and municipal development council members to strengthen compliance with regulations limiting access to nearshore fisheries.

Pretesting is essential for the development of appropriate and effective IEC messages and materials. Results of extensive pretesting with representative of IPOPCORM's main target audiences informed the development of its IEC strategy and its focus on food security, which helped to improve peoples' understanding of PHE linkages and the necessity for limiting access to imperiled ecosystems and limiting (or spacing) births to improve family wellbeing and assure sustainability of coastal resource for future generations (Hermann, 2004).

Further resources on selecting interventions and activities

Clay, Daniel & Thomas Reardon. (1998). Population and sustainability: Understanding population, environment and development linkages. Michigan State University, pg 5-6. Available online at: www.grandslacs.net/doc/1217.pdf. This paper is based on studies among poor farming households in rural areas of the Third World. It argues that - to be effective - rural development programs/projects should mirror the same set of interactions made by poor households.

Matarasso, Michael. (2004). Targeting behavior: Developing conservation education, communications and advocacy programmes with the participation of local communities. Vietnam: WWF. This guide is aimed at conservation practitioners but the lessons and activities can be applied to PHE as well.

D. Creating Social Rewards

Rewarding individuals and communities for undertaking conservation, health or good governance actions need not involve monetary payment, which may be impractical (from a budgetary standpoint) or unadvisable from the perspective of sustainability, replicability or scale-up. A variety of alternative stimuli as "social rewards" can be used to provide positive reinforcement for individual and collective actions that contribute to goals that a community sets for itself – assuming you are using a participatory approach to project design and implementation. Social rewards can play an important role in modifying social norms that undermine health and sustainable development as well as motivating community participation in a project. Influencing social norms and behaviors – particularly those that are illegal or unsustainable in terms of use of natural resources – is an important part of any PHE project. Ultimately the success of the project relies on modification of human behaviors and social norms. You need to determine what type of reward is appropriate for your project, and how to create this change without being coercive.

There are a variety of types of social rewards that have been or are currently being applied in integrated projects. These vary according to the actual focus of the PHE project. Ways in which projects have viewed and used social rewards or 'non-cash' benefits include:

- Aesthetic benefits such as preservation of spiritually important places and species or recreation.
- Social benefits, such as better social organization or higher self-esteem. This is a wide category, encompassing a variety of important benefits, such as pride and self-worth. In a Conservation International project in Paso Caballos, Guatemala, training midwives and health promoters served as a mechanism for community residents to gain prestige and respect in their

communities — which facilitated the creation of community leaders (Margoluis, 2001).

- Community projects funded by the enterprise, such as health care centers or roads.
- Environmental benefits such as erosion control or watershed protection. Conservation International found that the recognition of the reduction of threats is an important incentive (J. Edmond, personal communication 2007, and categories from Salafsky, 1999).

The Biodiversity Conservation Network (BCN), an integrated program that aimed to evaluate the efficacy of enterprise based conservation projects, found these types of social rewards to be a powerful incentive for community participation. They also found that benefits greatly affected project outcome - those projects with high conservation success had substantial 'non-cash' benefits, and that these benefits proved to be a necessary, though not sufficient, factor in project success. The advantage of these benefits was also that they were relatively easy to generate within the short project cycle (Salafsky, 1999)

Some specific social rewards that PHE projects have used are:

- Scholarships.
- Celebrations of small project achievements, such as diplomas to mothers to help them celebrate a child's being fully vaccinated.
- Community celebrations to highlight achievements, provide a channel for creativity and enthusiasm, and launch new activities.
- Trophy, plaque, ribbon, or certificate in recognition of achievement (e.g., completion of skills training course to qualify as a peer educator).
- Button, T-shirt or cap with an affirming message e.g., "Super CHOW" (Community Health Outreach Worker).
- Recognizing a volunteer's achievement on the region-wide public announcement system or community radio program.
- A photo recognition board in a prominent location in the region.
- A letter sent to the parent or guardian of a youth volunteer commending an accomplishment.
- A note from the field supervisor or mentor to the volunteer commending his/her performance.

Further resources on creating social rewards

Byers, Bruce. (2000). Understanding and influencing behaviors: A guide. Washington DC: Biodiversity Support Program. This guide was written to help people understand what drives and influences behaviors that affect the environment.

Salafsky, Nick, Bernd Cordes, John Parks, & Cheryl Hochman.(1999). Evaluating linkages between business, the environment, and local communities: Final analytical results from the Biodiversity Conservation Network. Washington, DC: Biodiversity Support Program. This report reviews the findings from the learning portfolio managed by the Biodiversity Conservation Network, on enterprise-based conservation projects.

E. Determining Criteria for Site Selection

Before determining where exactly to work, you must consider a variety of factors that can potentially influence the effects of the project. If you are already working at a site, consider how the following factors have affected your project implementation and potential project success. The factors that must be initially considered are:

1. Need of intervention

Perhaps the most important criterion is the actual need for family planning and other reproductive health interventions. You need to take into consideration factors such as population, age and structure, population dynamics and migration. If migration is the primary population issue, a family planning project may not necessarily impact the situation. If population pressures stem from high fertility, then determine the reasons for this high fertility. Is there a lack of access to basic family planning commodities, or no skilled health providers, or misinformation about side effects? IPOPCORM, for example, prioritized youth after an analysis of the population size, growth and composition in the sites they were targeting showed young people comprised half of the population living in marine hotspot areas (See Box 2).

You should also determine what the other health needs are in the area. Often family planning services cannot be delivered in isolation, particularly when you are working in a remote area with little access to any health services. Thus, it is good to bundle the FP with other health services as expressed as needed by the community – such as immunizations, maternal health, child health, water and sanitation.

Box 2. Need of Intervention in the Philippines

In selecting project sites, the IPOPCORM project looked for focal areas with communities that had large unmet need for family planning services, as well as a natural resource base that required management and conservation efforts. They researched the various 'biozones' in the Philippines and identified those ranked by the government as "extremely high" priority areas for conservation of marine biodiversity. They then looked into the status of the ecosystems in those areas and short-listed the ones that were relatively intact. Finally, they examined population dynamics in the short-listed priority areas and selected those that had the highest scores for ecology value, fisheries value, ecosystem integrity, and the highest rates of population growth, density and momentum. These criteria guided IPOPCORM's scale-up approach as well (PFPI, 2001).

In the case of the PESCODEV project, SAVE the Children-Philippines applied three basic criteria for both site selection and entering into partnerships: size of the population, environmental factors, and how supportive Local Government Units (LGU) would be of the project. By looking into the LGU's history, they reportedly were able to assess the local government's potential for sustaining the project. Another attractive feature of the municipality which they eventually targeted (Concepcion, Northern Iloilo) was its membership in the Northern Iloilo Alliance of Coastal Municipalities, which offered a unique forum for sharing among LGUs that had jurisdiction over important fishing grounds in the Visayan Sea (Chan-Pongan, 2006).

2. Desire of community to participate in project

The desire of the community to participate in the project is also an important factor to consider. There has been a great deal of evidence that the community needs to understand the purpose of the project, support the project and feel ownership over it in order for it to be successful. This was borne out in lessons learned from USAID Madagascar's fifteen years of cross-sector project experience which indicate that "three results are needed to make inter linkages work, namely: political will, technologies, and a local population committed to change" (L. Gaylord, personal communication 2007). You cannot work in every community that is interested in having a project, but the community must be in agreement with the project in order for it to work. See the resource section below for recommendations on resources on how to effectively involve the community.

Several factors can affect the desire of the community to participate. Communities that already have a general understanding of and interest in the focus of the project, such as family planning or food security, may be more receptive to the project. In the areas such as El Nido (Palawan, Philippines) it was the community that identified overpopulation as a root cause of environmental decline during participatory coastal resource assessment (PCRA) workshops sponsored by IPOPCORM. Therefore the community was receptive to family planning and actively participated in the development and testing of mechanism for integrated delivery of FP and coastal conservation services. In another site (Panas, Bohol, Philippines) however, the community opposed the project and its plan to establish a marine protected area (MPA) because they feared that closure of waters to fishing would mean less fish catch and more hardship for their families, which averaged six or more children. After considerable education and community organizing, the project won the approval of the people of Panas to establish the MPA. The Marine Sanctuary Management Team, an advisory body made up of local officials and villagers, was established to manage the MPA and

trained on basic coral and fisheries health monitoring approaches. Some of the same villagers became strong advocates for male involvement in family planning after realizing that "the cycle of food insecurity and poverty in coastal communities can be overcome if there is full participation of the people in the management of their own coastal resources and the accessibility of voluntary family planning information and services" (Ampusta, 2006).

3. Biological criteria

Proximity to a protected area is often used as a major criterion in site selection, but should not be the only biological factor considered. Also consider:

- **Uniqueness/richness.** Look for areas with high species richness, habitat uniqueness, ecosystem diversity, or endemicity.
- **Use.** Consider the current and future utility of the genetic, species and ecosystem composition to both natural ecosystem function and to humans.
- **Threat.** Evaluate the threat level from human activities and the feasibility of impacting these threats. (Brown & Wyckoff-Baird, 1994). In doing this, you also need to assess the role that market forces play in the threat. The solution may necessitate strategies that reduce demand in areas far from the ecosystem, as well as strategies that improve conservation effort in the ecosystem. The case of Madagascar's high reliance on charcoal for energy is a case in point where effective solutions depend on reducing consumption of firewood in urban centers as well as protecting forest reserves in rural areas.
- **Other resource values.** Historically PHE projects have focused on areas that have high biodiversity. But many PHE projects have expanded their environment component to include activities such as agriculture and fisheries management. Therefore it is important to consider other types of values – for example water scarcity, stable fisheries, etc.

Some organizations have used a mapping approach, which can allow organizations to more easily determine where the social and biological criteria overlap (See Box 3).

If an integrated project appears to be an appropriate intervention, has the support of the community, and is in an area where the resources warrant management, consider the following more detailed factors:

4. Socioeconomic criteria

Level of organization in community

In order to effectively participate in an integrated project, a community needs to be organized to a certain degree. It should have some form of functioning institutions, such as a health committee or social development committee. When selecting communities, you may want to only consider communities that have

some type of functioning local institution. Otherwise you must devote additional resources and time up front to help organize and facilitate the development of their institutions and their governance structures. If you are already working in a community with limited organization, you may want to consider devoting more resources for community organizing.

Box 3. Priority Setting and Site Selection in Madagascar

In 1999, WWF-US initiated a population-environment mapping project in the Spiny Forest Ecoregion, a 66,128 square kilometer area of land in southern and southwestern Madagascar. The goal of the mapping exercise was to identify the connections and interactions between population and biodiversity at the ecoregional scale. Building on the foundation of the 1993 national census population data, WWF created a series of maps that present overlays of population growth, migration, urbanization, and ecological data for the ecoregion. Women's literacy data from the village and commune levels were also mapped to explore the linkages between the existence of educational opportunities for women, population growth, and forest cover loss. Studies consistently show that women with more education have fewer children than those without formal schooling; the map overlay of priority forest areas and women's literacy data enabled WWF to identify and target areas where the implementation of literacy programs is critical to the alleviation of population growth pressures. This combination of education and environmental information also helps women to make wise choices about resource use.

The Spiny Forest population-environment map series enabled WWF and its local health partner, Action Sante Organisation Secours (ASOS), and other local NGOs to identify and prioritize where the combined delivery of literacy, family planning, health, and conservation interventions would generate the most valuable and sustainable synergies and outcomes. The collaboration made possible by this map series, and the interventions which WWF and ASOS subsequently implemented, benefited both biodiversity and social conditions in the Spiny Forest Ecoregion. During 2005-2006, for example, use of family planning increased by 6% and use of fuel-efficient cooking stoves increased by 10% in the project catchments (WWF Conservation Strategies Unit, 2002b).

Oftentimes the livelihood, agriculture, or environmental management activities of a project contain activities to build community organization around a particular issue –such as NRM committees, farmer's collectives, or cooperatives for information sharing and skills building purposes. These organizations provide excellent mechanisms for adding on health information or distribution – and thus integrating health. You can create this community organization in a project best around some sort of livelihood issue, and then you can utilize that structure to add health and reach a targeted audience in a cost efficient and effective manner.

Level of poverty

The level of poverty in a community can affect its interest in a project and its ability to fully participate in it. Communities that are experiencing extreme poverty may be much more concerned with basic immediate amenities, such as food and clean water, than with projects that include long term planning, such as those that focus on family planning. Impoverished families may not be able to refrain from destructive environmental practices if the project does not offer training in alternative livelihoods *and* financial facilities, such as micro-credit for micro-enterprise development schemes and help with marketing links. Organizations that elect to work in impoverished communities should be prepared to make a commitment of five years or more

and be prepared to provide inputs that go beyond PHE and support local institutional strengthening and good governance practices, when indicated.

Also, areas of extreme poverty are often in need of the most basic health services so it is difficult to start out a project that just provides family planning information and services when communities have such great health needs. WWF found this to be true in their Spiny Forest site in Madagascar and Kiunga site in Kenya and CI also encountered this in their Cardamom Forest site in Cambodia. Communities had no access to any health services in those areas, so the organizations could not start out by offering family planning only. They found that they needed to meet these communities' basic health needs at the same time as they offered family planning, in order to be seen as a partner in the communities' development.

Education level in the community

The general education and skill level in the community can affect its ability to effectively participate in the project. This is particularly important where illiteracy rates among females are high in the project area and your analysis suggests strong associations between women's educational opportunities, population growth, and environmental degradation, as was the case in the WWF –Madagascar (Box 3). The MGHC project (in Madagascar) found that illiteracy was one of the major factors that affected project impact. And the SAGUN project in Nepal which identified female illiteracy as a barrier to women's participation in community forest management and governance. That project developed functional literacy courses for illiterate girls and women that incorporated modules on good governance that not only improved their life-skills but broadened opportunities for them to hold executive positions in community forest user groups (CFUG). In addition, other project results suggest women were more active in sustaining conservation efforts in the same project sites (Schweithelm et. al, 2006). Based on this experience, modules on reproductive health and population-health-environment were integrated into the same governance literacy training courses targeting illiterate women and girls.

Access to information

The access to information that a community has affects its receptivity to an outside project as well as their understanding of the project. In the Philippines, many of the coastal communities in which IPOPCORM and PESCODEV worked lacked access to basic information related to the environment, health, family planning, policies and laws. Their lack of legal literacy – knowledge of existing laws and rights – limited their ability to use the legal system, especially those that gave substantial authority to local governments. For example, an existing decree in the Philippines assigned exclusive access to nearshore fisheries to small-scale, artesian fishers. Once IPOPCORM made this information more accessible to fishing communities, their peoples' organizations started to use it to

advocate for stronger enforcement to combat the illegal activities of commercial boats that were poaching from nearshore fisheries that subsistence fishers depend upon for subsistence.

Telecommunication infrastructure can also affect the manner in which a community accesses the outside world. In the Philippines, for example, local government authorities could have retained and prosecuted individuals apprehended for illegal fishing activities but they did not have the communications infrastructure (long distance telephone line, fax machine) or other means (overland courier service) to deliver the violation reports to the circuit court judge within 72 hours of the arrest, as required by law. Thus, lack of this infrastructure affected their ability to regulate effectively.

5. Physical criteria

Distribution of community and access to infrastructure/services

The physical distribution of a community is also important to take into consideration. Communities that are spread out over a larger area will be more difficult to access and will require greater resources. In the Philippines, the IPOPCORM project looked for more densely populated areas and communities living close to each other in the target ecosystem in order to achieve economies of scale in outreach service delivery.

You need to evaluate the existing infrastructure in the potential site area. Areas that warrant conservation efforts – such as those that are high in biodiversity or endemic species – are often fairly remote. These areas often lack basic roads and means of communication. This is particularly true in places that experience great weather changes – such as in the wet season in the tropics or the winter in the north. In the Philippines, the IPOPCORM project found that some coastal areas were very difficult to reach as there were simply no roads. Those that were on the mainland, versus a small island, were much easier to access. In Madagascar, during the rainy season, many of the roads become impassible, which then limits the ability of project staff to visit and provide technical assistance. Parts of Madagascar have also experienced severe weather patterns, such as cyclones in 2000, which further deteriorate the existing weak infrastructure (Mogelgaard & Patterson, 2006). Also, remote communities often tend to have a general distrust of outsiders, which includes government and development workers (Mogelgaard & Patterson, 2006). Organizations that choose to work in such areas need to budget time and resources up front to develop the trust necessary to create such a project (Whyner, 2000).

It is also helpful if a community health facility exists. Such a facility can greatly contribute to the sustainability of the project through family planning education and delivery of services, after the project cycle itself has ended. If this does not exist, you may need to consider creating one, which can add considerable time

and resources in the initial phases of the project. Several organizations, such as WWF, CI and Save the Children (SAVE)-Philippines, have been successful in creating health clinics and having the government take over the responsibilities after the projects ended.

6. Institutional criteria

It is important to determine what institutions work in the area (including government offices) and have an idea of their basic capacity. SAVE-Philippines method of examining the past performance of candidate LGU partners and the alliances they participate in (see Box 2) is an exemplary model. (See section H for further information on institutional arrangements). Consideration should also be given to joining forces with an organization that is managing an existing project, rather than starting one from scratch, because it may offer a number of potential benefits, such as:

- Decreasing the startup costs for a project.
- Beginning your project in a much shorter time frame, building on the existing relationships between the other organization and the community.
- Appearing to be a continuous project from the side of the community.
- Having a greater chance of leveraging your resources, increasing ability to scale up, and increasing potential for sustainability.

Further resources on criteria for site selection

Conservation International (CI). www.conservation.org. CI has information on hotspots – or areas listed as critically endangered.

Measure DHS. www.measuredhs.com. This website includes health and family planning information at the country level, as well as some data at the regional level.

Ministry of the Environment. Most Ministries of Environment have information on protected areas, species in each ecosystem and general biological data specific to their country.

Ministry of Health. Most Ministries of Health have information on health data specific to their country.

Population Reference Bureau (PRB). www.prb.org. PRB has information on world population statistics, by country.

World Conservation Union (IUCN). www.iucn.org. The IUCN maintains the Red List of Threatened Species used worldwide and provides access to a database of 3000 documents pertaining to the environment.

World Wildlife Fund (WWF). www.worldwildlife.org. WWF has extensive maps of a variety of biological indicators, globally.

F. Creating a Monitoring & Evaluation Plan for PHE

A good monitoring and evaluation (M&E) plan is particularly important for PHE projects for several reasons. As these projects tend to be fairly complex,

involving factors from several sectors, it is important to understand how these factors affect each other and what effects might result from the project intervention (both intended and unintended). Organizations working on PHE projects also often have to be able to support, with data, the reasons why they are choosing to implement integrated approaches. This ability can prove to be very important when working with donors, many of whom tend to be more supportive of single-sector projects.

In order to understand the effects of your project, you need to determine what indicators will give you the necessary information. Indicators should be:

- **Valid.** Accurately measuring a behavior, practice or task.
- **Reliable.** Consistently measurable in the same way by different observers.
- **Precise.** Operationally defined in clear terms.
- **Measurable.** Quantifiable using available tools and methods.
- **Timely.** Providing measurement at time intervals that are relevant and appropriate for program (or project) goals and activities.
- **Programmatically Important.** Directly linked to achieving the objectives that is needed for impact (Measure Evaluation, 2007b).

Integrated approaches pose additional challenges to the development of appropriate indicators. While there is often a somewhat standard set of indicators that can be used to measure family planning or health approaches, this does not exist in the environmental realm. The projects are too diverse and dependent on the site specific details. And because environmental interventions act at a larger spatial and temporal scale than health and family planning, it can be more challenging to determine appropriate indicators that can be measured in a short time period (1-2 years). The best way to determine what indicators may be appropriate is by returning to your goals and objectives, and reviewing your results chain. By understanding the linkages among the factors affecting your target condition, you can develop indicators that can reflect changes in your target condition. The indicators for an integrated PHE project do not need to be integrated – in fact, indicators will generally either be health, population or environmentally focused. A great deal of research has been done on creating indicators for integrated PHE projects (see resource section below), which can give you ideas on what might be appropriate for your specific project.

You should also evaluate the information needs of all stakeholders before selecting your indicators. You may want to collect data for the community itself to manage, but this information will probably be very different than the information required by a donor.

Once your indicators are selected, you need to determine:

- **How you will measure them?** Determine what your data sources will be.
- **When you will collect the data?** Establish a timeline for data collection, how often to collect it, and how long it will take. You will want to collect baseline data when your project begins but you will also want to collect it on a regular basis.
- **How the data will be analyzed?** Decide if it will be qualitative and/or quantitative, whether you will you need to hire outside consultant, and how often it will be analyzed.
- **Who will be collecting the data?** Train appropriate staff to collect data. This step can require a certain level of organization and management and you need to ensure that whoever is in charge of the data collection has the necessary skills. Also, if you are working with a local organization or a local community institution, you may want to set up a community based monitoring system as well. This may create greater linkage in the community of the project, but can require more planning and additional funding to create the capacity to do so.

Ideally, M&E plans are developed in the planning phase of the project. This allows for the collection of information before the project begins, which can then serve as baseline data to which you can compare data collected later in the project. In addition, by determining your information needs ahead of time, you will ensure that sufficient time, resources, and funding will be set aside to complete this part of the project. Oftentimes, however, this is not feasible. In these cases, M & E plans should be developed as soon as possible into the project in order to collect data over the longest amount of time possible.

You should be cautious in interpreting the results of your monitoring and the conclusions that you draw from it. If you overstate your results without data to support them, you can risk your credibility. While theory indicates that integrated projects may produce greater results, it is important to be honest about the actual impact of the project in order to learn from it. Therefore, if it is not achieving the desired results, you need to be able to understand why. This can contribute to the body of knowledge of when integrated projects may be appropriate and when sector specific projects may be more suitable. If it is not achieving the desired effects, you need to revisit your conceptual model, your assumptions about the linkages in your model, and the proposed effects of your intervention. You need to determine if the interventions are reaching the intended audiences in the field and redirect the targeting of project interventions, if needed, to achieve the desired results. Other fundamental considerations include how to disseminate information from your M&E and to

who it should be disseminated (donors, community groups, local implementing partners, government offices, etc).

Further resources on creating a monitoring & evaluation plan

Conservation Measures Partnership. (2007). Open standards for the practice of conservation. Available online at: www.ConservationMeasures.org. The Conservation Measures Partnership, consisting of 11 of the major conservation organizations, has developed a set of adaptive management open standards used in conservation.

Margoluis, Richard & Nick Salafsky. (1998). Measures of success: Designing, managing, and monitoring conservation and development projects. Washington, DC: Island Press. This book offers detailed instructions on designing, managing and measuring the impacts of community-oriented conservation and development projects.

Measure Evaluation. (2007a). Compendium of Maternal and Newborn Health Tools. Also available Compendium of Reproductive Health Indicators. Available online at: www.cpc.unc.edu/measure/publications. This compendium includes population- and facility-based assessment tools that use qualitative and quantitative approaches and that can be used at different levels of the health system.

Measure Evaluation (2007b). Guide to monitoring and evaluating population health, environment programs (release date December 2007). Available online at: www.cpc.unc.edu/measure/publications/index.php. This document reviews the protocol in creating an M/E component and provides extensive lists of potential indicators to be used in PHE projects.

MENTOR Training Resources. Monitoring and evaluation network of training online resources. www.cpc.unc.edu/measure/training/mentor. Through MENTOR (Monitoring and Evaluation Network of Training Online Resources), MEASURE Evaluation makes available free training materials and tools on M&E topics for use by researchers, project managers, trainers, policy makers, students, and other public health professionals.

Millennium Development Goals Indicators. Available online at: http://unstats.un.org/unsd/mdg/default.aspx. This site presents the official data, definitions, methodologies and sources for the 48 indicators to measure progress towards the Millennium Development Goals. It is a good source of large scale data as well.

Stem, Caroline & Richard Margoluis. (2004). Conventional wisdom on causal linkages among population, health, and environment interventions and targets. Bethesda, MD: Foundations of Success. This document outlines how to do results chains and reviews examples of results chains in integrated projects involving PHE.

G. Mobilizing Resources

After determining your activities, you then need to create a budget to determine if these activities are feasible. If you have not already done so, you need to identify where the resources will come from to support project implementation, and M&E. It can be difficult for PHE projects to find funding to support integrated approaches. Donors often are more likely to support single sector approaches. But as operations research on PHE project advance, organizations

will have more data to support their reasons for choosing an integrated approach.

In looking for external sources of financial support, your fundraising approach needs to take into consideration the priority of the international development assistance agency or domestic foundation that you have targeted for assistance. Most donor agencies have active websites that spell out their thematic and geographic priorities for investment in development. In some cases, you may need to reposition the purpose or geographic focus of your proposed project to align more directly with the interest of the potential donor. Additionally, your technical proposal may be more attractive to some donors if you *propose a solution that uses integrated approaches to address a priority concern held both by the donor and your organization,* rather than submit a proposal for a discreet PHE project, per se.

There are several potential sources of financial support for PHE approaches:

International foundations. International private foundations continue to be a source of funding for integrated projects. And in fact several foundations, such as the David and Lucile Packard Foundation (United States) and the Summit Foundation (United States) have provided planning and implementation grants for PHE activities as well as support for PHE evaluations and policy advocacy initiatives. The International Development Research Centre (IDRC) (Canada) supports research on ecosystems approaches to human health, climate change adaptation in Africa, and eco-health practitioner networks in the Caribbean and Africa. The Johnson & Johnson Foundation (United States) sponsors HIV/AIDS philanthropic programs in locations around the world, including cross-sector conservation-AIDS initiatives in Nepal and other countries.

Official Development Assistance (ODA) Agencies. A number of governments operate agencies or departments – usually housed in their embassies – that provide financial aid to NGOs and community-based organizations. Apart from these ODA agencies, some embassies also manage small grants programs out of the office of the Ambassador or community relations unit (Boyson et. al, 2001). The following are a few examples of such agencies:

- Australian Agency for International Development (AUSAID).
- Canadian International Development Agency (CIDA).
- Ministry for Economic Cooperation and Development (BMZ/Germany).
- Department for International Development (DFID/UK).
- European Union (EU) EuropeAID.
- Japan International Cooperation Agency (JICA).

- Swedish International Development Agency, (SIDA/Sweden).
- United States Agency for International Development (USAID).

For example, the European Union is supporting rural development projects in Madagascar that apply integrated approaches. The office of Population in the Global Health Bureau at USAID Washington has also funded a number of field-based PHE projects in Mexico, Guatemala, the Philippines, Madagascar, Kenya and Uganda and has also co-funded a PHE evaluation with the Packard Foundation. USAID Missions have also started their own PHE projects, for example USAID/Rwanda and USAID/Nepal. The Economic Growth, Agriculture, and Trade (EGAT) Office of USAID Washington provided grant support for a two-year project that developed a linked approach to coastal conservation and AIDS prevention in Tanzania, which is being continued by the USAID Tanzania Mission with its own funds. Similarly, the USAID Missions in the Philippines and Madagascar are providing funds to continue and expand integrated and cross-sector approaches pioneered under earlier projects.

United Nations Agencies. Many governments contribute to the operations of United Nations agencies and, as such, these organizations are called multilateral. Multilateral assistance is usually directed toward government programs, but many UN agencies work closely with NGOs on health, nutrition, education, environment, women's issues, and youth programs (Boyson et. al, 2001). These include: the United Nations International Children's Emergency Fund (UNICEF), the United Nations Development Program (UNDP), the United Nations Population Fund (UNFPA), World Health Organization (WHO), and the United Nations Development Fund for Women (UNIFEM). Several Filipino NGOs have received grants from UNFPA, for example, for integrated population-development advocacy work and field-level activities.

Provincial and local governments. Provincial and local governments may be a good source of funding, particularly if you work with them to help cover service gaps they may have. This is often the case in PHE projects that work in remote areas where the government may not have the resources to reach all communities. Their financial support may not be as extensive as other sources, but can greatly contribute to the sustainability of the project.

Partner organizations. By creating alliances with other organizations, you may be able to tap into their financial resources – as well as their financial networks. And by pooling resources, you can potentially expand your project if desired (in terms of geographic coverage, demographic coverage, services offered, etc). In addition, several larger organizations have **partnership funds** that organizations can apply to for additional funding, particularly for projects that also have biodiversity goals. A case in point is Conservation International (CI), which manages three partnership funds that are supporting a number of field-based

activities and social entrepreneurial ventures that contribute to biodiversity conservation goals and outcomes. These include:

- **Critical Ecosystem Partnership Fund** (CEPF) is a joint initiative of Conservation International, l'Agence Française de Développement, the Global Environment Facility, the Government of Japan, the John D. and Catherine T. MacArthur Foundation and the World Bank. This mechanism provides funds to engage civil society in safeguarding biodiversity hotspots (CEPF, 2007). CEPF's global program, five year strategy (2007-2011) and grant application guidelines are available online at: www.cepf.net/xp/cepf/strategy/index.xml)
- **Global Conservation Fund** (GCF) is the first major fund designed to quickly mobilize financial resources to finance the creation, expansion, and long-term management of protected areas in the world's biodiversity hotspots, high-biodiversity wilderness areas, and important marine regions. Managed by Conservation International, GCF was established in 2001 with initial capitalization from the Gordon and Betty Moore Foundation. Reference and grant application information available online at: web.conservation.org/xp/gcf/about/
- **Verde Ventures, or Green Ventures**, invests in small businesses with a primary goal of conserving the planet's global biodiversity. Managed by Conservation International (CI), Verde Ventures uses debt and equity financing to support conservation-oriented businesses that can play a vital role in conserving biodiversity and creating jobs that preserve natural resources for future generations. More information available online at: web.conservation.org/xp/verdeventures/

Local Independent Foundations and Trusts. Local foundations can be a source of co-financing support for PHE projects. Examples include the Tany Meva Foundation in Madagascar, which manages an environment trust fund that was originally created by USAID Madagascar. Tany Meva is currently supporting the environment components of PHE initiatives implemented by some members of the Voahary Salama coalition. The Philippines Foundation for the Environment (PFE) is another example. PFE supports work implementing by conservation NGOs in the globally significant Bohol Marine Triangle region of the Philippines. By dovetailing its program resources with this project, PATH Foundation was able to facilitate PFE integration this important region.

Service Clubs and Membership Associations. Local service clubs and membership organizations are often another source of funding for local projects. Examples of such associations include: Rotary International, Lions Clubs International, chambers of commerce, and trade associations of specific industries. The Rotary Club and the Lions Club have provided support for programs that expanded access to polio immunization and iodine deficiency

prevention activities, respectively. NGOs may be able to tap into these and other clubs and associations to finance the "H" component of a PHE project.

Communities. Communities themselves can make contributions to the project. Organizations such as PATH Foundation Philippines require considerable counter-part contributions from local government-NGO partners and participating communities - both as a sign of commitment and a means to leverage resources. During the six year period of the IPOPCORM initiative, for example, the value of contributions (cash and in-kind) mobilized from local sources to support field-based PHE activities totaled over $882,000 (PFPI, 2006a). Thus PHE project planners should not overlook the potential for local resource mobilization.

Further resources on mobilizing resources

Boyson, Jack & Yumi Sera. (2001). Mobilizing funding for development projects. International Youth Foundation, Baltimore, Maryland and the World Bank Small Grants Program, Washington DC. Available online at: www.gysd.org/involve/resources.pdf

Boyson, Jack. Resources for mobilizing funds for development projects. Northern Illinois University. Office of Sponsored Projects. Available online at: www.grad.niu.edu/osp/budget.html

Johnson & Johnson Social Responsibility HIV/AIDS section. Available online at: www.jnj.com/community/aids/index.htm

Makhanu, Sibilike. N.d. Resource mobilization for re-construction and development projects in developing countries: Case of Kenya. Kenya: Center for Disaster Management and Humanitarian Assistance, Western University College of Science and Technology. Discusses conventional and indigenous methods of resource mobilization and the role of micro-financing, domestic borrowing and the role played by technical assistance programs. Available online at: www.grif.umontreal.ca/pages/MAKHANU_Sibilike.pdf

Population Action International. What you need to know to apply for U.S. government funding for community based projects linking reproductive health and natural resources management: An Unofficial guide. Available online at: www.populationaction.org/Publications/Reports/U.S._Government_Funding_for_Community-Based_Projects/Summary.shtml

H. Forming Institutional Arrangements

Integrated PHE projects can be designed and implemented by a variety of types of institutional arrangements. PHE projects pose a unique challenge in that they often require a range of technical skills – from health, to population, to environment – and often only for a short period of the project. Organizations have to decide how to go about acquiring these skills. There are no right ways to acquire the necessary expertise, and each approach has trade-offs. You need to

determine what factors are important to your organization. See table 2 regarding the potential advantages and disadvantages of each approach.

1. Single organization: Technical expertise from one organization

Multidisciplinary teams

In this model, one organization hires all the staff with the necessary skills and creates a team with all necessary disciplines working together. An example of this approach would be a single team that has one reproductive health specialist, one forester and one water specialist. This one team may visit all the sites, or the organization may have separate teams with the same skills sets for different areas. This is often referred to as the gold standard as, in theory, it confers the most advantages. But in reality, this approach tends to be the least utilized in PHE project, as it requires much greater financial support and few donors are willing to support all staff over the life of the project.

Sector-specific teams within one organization

In this model, one organization still hires all skill sets to be on staff, but they are divided into teams according to different sectors. For example, an organization may have a team that specializes in forest management, another team that specializes in water resources and yet another that specializes in reproductive health. The coordination of the teams depends on the organization – for example, they may choose to conduct site visits separately or may coordinate their efforts

2. Alliances: Technical expertise from an alliance

Most organizations choose to create alliances to meet their technical needs as they face funding limitations, and do not necessarily want to hire core staff with expertise outside of their sector. Alliance in this document is a broad term that encompasses all collaborating arrangements among organizations, including consortia, partnerships and contractual agreements (Margoluis, 2000).

Table 2. Advantages and disadvantages of different implementation team structures

	Potential Advantages	Potential Disadvantages
Multidisciplinary teams within one organization	• Ease of communication and coordination, efficiency and capacity for adaptive management • Field activities more integrated • Staff capacity building in other sectors	• More expensive to have all skills on staff • Difficult to cover all environmental expertise needed • Bringing on additional technical expertise may be viewed as mission drift (e.g. conservation organizations hiring health staff)
Sector-specific teams within one organization	• Ease of communication and coordination, efficiency and capacity for adaptive management • Integration at field level still feasible as one organization ensures teams work together and link their sets of activities	• Greater chance for miscommunication and problems in coordination • Less likely to transfer integration in field • Need more resources for communication, learning across sectors • Doesn't build staff capacity in other sectors • More expensive to have all skills on staff • Difficult to cover all environmental expertise needed
Technical expertise from an alliance	• Cost efficient as one organization is not responsible for all necessary skills • Gain access to networks and relationships through partners • Greater access to different environmental skills • No perceived mission drift within organizations	• Greater chance for miscommunication and problems in coordination – greater resources needed to avoid this • Less coordination in planning and implementation • Less likely to transfer integration in field • Doesn't build staff capacity in other sectors • More difficult to adaptively manage project

Organizations often underestimate the time and resources necessary to create and maintain the alliance. Individuals working in different sectors can have different languages, ways of approaching problems, and means of managing projects. You need to facilitate learning, coordination, and communication among the different organizations and different teams. For example, the health team must understand the environment component of the project, and the environment team must understand the health component. Much of this learning and understanding is achieved informally. But organizations need to develop institutional infrastructure to ensure that this happens. First, both teams should be charged with conducting the participatory assessments together, so they can understand the communities' needs in a holistic fashion. Secondly, both teams should also be trained in the other sector's interventions and approach, so that even if they are not charged with implementing, they understand the approach the project is taking in that sector and why. Another suggestion is to have the field staff members visit the site together in order to see the integration at that level and understand the potential issues the other team faces. Finally, creating space within a project for joint planning and communication sharing opportunities is important. PATH Foundation Philippines, for example, organized "cross-fertilization" workshops that brought together NGO field supervisors from different IPOPCORM subprojects to share experiences across sites and engage in joint brainstorming to find solutions to common implementation and monitoring constraints.

3. Alliances: Organizational partners to consider

There are several types and levels of organizations to consider when creating an alliance. You should examine the presence and strength of these organizations, and weigh the advantages and disadvantages in working with each one in each situation. (See Margoluis 2007 for information on different types of alliance structures for PHE projects.)

Local organizations

Local NGOs and community-based organizations (CBOs) are viewed as a cost-effective way to reach target populations at scale in ecologically sensitive areas as they have the interest in and capacity to reach these communities (Kleinau et. al, 2005). Examine all local organizations as potential partners, regardless of their specific sector focus. Local organizations in general tend to know the key players and social norms of the community. Even if the local NGO is not a technical expert in the area of implementation, they are often the best partner because of their knowledge and relationship with the local communities. If this is the case, your project should be sure to include an intensive training for all community organization workers on the most important skills that they need to successfully implement the project. This includes continued monitoring and skills updating. Hermann (2004), for example, found that "[e]ffective

stewardship of coastal resources and human health mostly occurs through local institutes and community plans and actions" (Hermann, 2004, pg 38). The importance of the knowledge of local conditions was demonstrated in an integrated project that Conservation International was funding in the Selva Lacandona jungle in Mexico. They had partnered with La Fundación Mexicana para la Planeación Familiar (MEXFAM) to carry out the local health service component of the project in the communities. But as the MEXFAM doctors were primarily from urban areas, they were unaccustomed to working in the remote jungle area with this target population. The result was that they were ineffective and the project suffered as CI lost the communities' trust (Edmond & Fisher, 2005e).

National and international organizations

National and international organizations play important roles in alliances as well. They tend to have greater access to funding, technical support and other resources. They also tend to have a wider network and can play the role of connecting smaller organizations to appropriate resources. National organizations can link the alliance and the project to a national level policy framework. They will also replicate the approach if it works well and is successful – in other sites, or by trying to find additional funding to continue in the same site once partner funding is over (like the NGO partners in IPOPCORM). And international organizations can ensure that the project and the alliance fit into a broader approach to integrated projects. A good example of this is the EcoRegional Alliance (ERI) Initiative managed by Development Alternatives International (DAI) on behalf of USAID Madagascar. ERI serves as the link among all programs funded by USAID in the landscape, including population-environment-health linkage activities which are fully expressed in the coalition of projects in Fianarantsoa province. The coalition's work plan is based on the Nature-Health-Wealth-Power (NHWP) framework but individual actions are carried out by various projects and with many partners. The coalition reportedly has been very effective at "building inter-project alliances resulting in better communication and fewer inter-project turf wars" (Freudenberger, personal communication 2007).

Local government offices and structures

Local government offices can be important partners and can generate a number of benefits to the project:

- **Increase sustainability.** The IPOPCORM project in the Philippines found that Mayors and their local government units can help sustain population-environment projects via: (a) allocation of health officer staff time for supervision of peer educators and CBD agents; (b) allocation of planning and development officer staff time for training and deputizing community volunteer sea-wardens (bantay-dagat) to assist with MPA enforcement effort;

(c) using the health budget to finance travel expenses for couples who want to access permanent methods of FP offered at distant service points; and (d) allocating a portion of their development budget funds to purchase a motor boat, walky-talky and other communication equipment needed for sea-wardens to conduct patrolling activities in protected areas (J. Castro, personal communication 2007).

- **Provide technical assistance.** This could include extension services and infrastructure services to alliance partners. The government is often happy to provide additional support, particularly if the organization is providing basic social services in which the government cannot adequately provide.
- **Support project in legal issues if necessary.** For example, the government can support local communities in keeping out wildlife poachers and enforcing resource restrictions.
- **Put the project in larger context.** Working with the government can help link the project to a number of other governmental policies, at a variety of levels.
- **Help choose other partners.** One way to begin looking for a suitable NGO partner is to check first with the local government offices to see who they have worked with or prefer to work with – and then determine if the organizations have sufficient capacity.
- **Build capacity.** An additional benefit of working with government offices is that the project builds capacity of local governance while working through them. This is more appropriate and effective in a context where there has been some decentralization process.

It is important to remember, however, that working with the government can also cause additional challenges if they are viewed with distrust by local communities or if they do not have the capacity necessary for the project.

Local development councils are also important institutions to involve in PHE projects. Such structures exist in most developing countries but not all are legal entities. Their membership often comprises representatives from government, civil society and the business sector who are appointed by the government or elected by the community to serve as members of the council's executive committee and/or social service committees (e.g., health, education, environment, youth and sports) for planning and other purposes.

NGOs working on PHE activities in forest corridors of Fianarantsoa province in Madagascar found that community level development was more effective when catalyzed by local commune development committees (CDC) rather than going directly to the communities themselves. This however required additional investment to strengthen the leadership, coordination and management skills of the Mayor and other officers and members of the CDC. Once empowered, the

CDC played an instrumental role in directing the tasks of village leaders and coordinating the inputs of different NGOs working in the same commune. In some instances, it was the CDC that drove integration at the grassroots level rather than the cross-sector approach itself (ERI Fianarantsoa NGO partners, presentation July 2007).

The Private sector

Organizations that have established relationships with the community may also be found in the private sector. IPOPCORM found that *sari-sari stores (*small, privately owned convenience shops or kiosk) made effective partners – they were important institutions in the community and they had a financial incentive to promote health products. Similarly, CCEF found that dive shop operators made effective partners for coastal conservation as they had a financial incentive to support MPA strengthening. You need to consider all private sector operators that may be appropriate to the situation – such as tour operators, private sector pharmacies, etc.

Academic Institutions

Universities can play several important roles in integrated projects, particularly regarding technical support. They generally have specialists on staff that can provide necessary technical expertise. This is often a constraining factor on the environmental side, when specific expertise, such as herpetology, is needed for a short phase of the project. They can also provide support for the design and implementation of the monitoring and evaluation component of the project. For example, PATH Foundation Philippines did *not* have in-house capacity to conduct biophysical assessments necessary for identifying and monitoring the impact of specific management interventions to improve coastal ecosystems in IPOPCORM project sites. As such, they partnered with the University of the Philippines Marine Science Institute (UPMSI) and its non-governmental arm, the Marine Environment and Research Foundation (MERF) Inc., to conduct the ecology surveys, analyze the data and pinpoint appropriate management strategies on their behalf.

Before selecting any partner to work with in an alliance on a PHE project, you need to consider their basic organizational characteristics – the clarity of their goals, their flexibility, decision making process, leadership and staff characteristics. You also need to assess their commitment to the integrated projects. In order to transfer the idea of integration to the community level the organization itself should be committed to the idea. Organizations that are created for the sake of a project may not be committed to the idea of integration and may be less likely to continue the work once the project funding has ended.

Further resources on forming institutional arrangements

Chan-Pongan, Norma. (2006, Sept.). Building partnerships with local government units: PHE Programming in the Municipality of Concepcion. *Strategies for sustainable development*. Population Reference Bureau. Available online at: www.prb.org/pdf06/PHE-BuildingPartnerships.pdf. Describes the institutional arrangements that supported and sustained the PESCODEV approach in the Philippines.

Edmond, Janet & Katie Fisher. (2005e). Combining conservation and care: Multicultural partnerships in conservation and health. RPC Conservation Learning and Practice. Washington DC: Conservation International. A review of the lessons learned from Conservation International from their health and conservation projects.

Kibbe, Barbara & Fred Setterberg. (1992). Succeeding with consultants: Self assessment for the changing nonprofit: Part III tools for change. CA: David and Lucile Packard Foundation. A useful "self-assessment tools" that can help organizations identify the strengths and weaknesses of their governance, planning, fund development, etc. can be found in the following publication.

Margoluis, Cheryl. (2007). Healthy relationships: Examining alliances within population – health – environment (PHE) Projects. Washington, DC: World Wildlife Fund. This paper examines the alliances that have implemented PHE projects in order to glean lessons for organizations considering working in an alliance on these types of projects.

I. Increasing Capacity and Knowledge

Organizations and individuals will have varying levels of capacity and knowledge related to the specific sectors in which they are working. It is important to focus on increasing capacities and expanding knowledge in order to create sustainable projects and institutions.

1. The Role of leaders

Look for and facilitate the development of leaders at every level. Leaders must be present not only at the field level, but in the municipal, national and other local levels as well. A good example of leadership development can be found at the University of California Beahrs Leadership program, which aims to build the capacities of environmental leaders worldwide to integrate interdisciplinary knowledge, balance environmental, economic, and social objectives and to facilitate dialogue and problem solving among stakeholders. The program offers a summer course, opportunities to network, and access to a small grants fund. During 2006, four of the participants in the course were PHE project managers from the Philippines including the Mayor of the coastal municipality of Conception in Iloilo, Philippines (Mayor Raul Banos) who stresses to his constituents the importance of linking population and coastal conservation: "[w]e grow by three babies a day; the town of Conception has a population growth rate of 2.8%-higher than the national average of 2.4% and the Iloilo [provincial average of] 2.1%. It stretches our resources, it stretches our services

and if you factor the vulnerability of the ecosystems, especially in the islands, that will be a very big social problem if we do not address it now" (De Souza, 2007, pg 28).

One way to foster potential leaders is to find out who holds the decision making authority for relevant policies and then create opportunities for individuals at this level to learn from other programs. For example, the PATH Foundation Philippines took members of a municipal development council on a field trip to Thailand to meet with leaders in other areas that had experience with family planning, environment and livelihood projects and to be able to see what they were doing, why it was important, and how they overcame any obstacles. They focused on the level of municipal development council leaders as they had the final decision making authority over the natural resources and ecosystems in the project area (see Box 4).

Box 4. Working with Leaders in the Philippines

National and local decision makers in the Philippines often lack awareness of population dynamics in the country's biodiversity hotspots, which rank among the most densely populated on the planet. Local populations are also expanding at twice the national average rate in hotspot areas due to increasing migration and high fertility linked to poor access to family planning services. Hotspot populations also have higher than average momentum with half of more of their people under 17 years of age. Such information is not always appreciated, though, because of the sensitivities about family planning in the Philippines and the fact that the municipality's share of internal revenue is based, in part, on its population size (a disincentive for population management effort). PHE proponents, consequently, must also invest resources to empower local NGOs with the skills and tools needed to advocate effectively for PHE policy and budgetary support from municipal leaders. Experience from IPOPCORM and PESCODEV indicate such milestones take between 12-18 months to achieve. Once a mayor has endorsed an intergated approach, the barangay (village) councils can tap into municipal funds to support local PHE initiatives that align with the municipality's development plan. Over the past five years, several supportive mayors and barangay captains emerged as PHE champions and worked together with NGO proponents to convince 275 policymakers in 44 coastal municipalities to support integrated approaches as a means to reduce poverty, improve food security and promote sustainable use of natural resources (L. D'Agnes, personal communication 2007). Despite this progress, the PHE movement in the Philippines continues to face challenges in terms of political commitment for family planning at the national level, due largely to the influence of the Catholic Church and allied organizations.

The leaders that are created will continue to have impacts through their influence of other individuals as well. By acting as mentors, leaders can continue to create leaders at different levels and in different sectors, which will contribute to the sustainability of the project and its ability to scale up when ready. The Governor of the province of Bohol in the Philippines, for example, is acting as a mentor for three other provincial governors that share jurisdiction over the Danajon Bank – the sole double barrier reef in the Philippines and one of only two such sites in the entire Asia-Pacific region. For decades the Danajon provided food and livelihood for people living in the fifteen coastal municipalities that border the Bank. Years of high population growth, however, have resulted in population densities in the Danajon vicinity that equal those of Java, Indonesia. About one million people currently reside in the ecosystem which exceeds the carrying capacity of the Danajon's fisheries. These factors are reflected in increasing poverty and malnutrition rates in local communities and escalating

conflicts among resource users. Having participated in the development of IPOPCORM approach in Bohol, Governor Erico Aumentado is convinced that similar approach should be integrated into the inter-provincial plan for management of the Danajon and, as such, is mentoring counterparts from the provinces of Cebu, Leyte, and Southern Leyte in integrated approaches to coastal ecosystem management that incorporate elements of reproductive health management (PFPI Alternative Advocacy Project).

2. The Role of staff

In PHE projects it is particularly important that the capacity is built within project staff in order to understand all components of the project. As mentioned above, if working with sector specific teams, you will need to facilitate sector specific knowledge among team members. The environment staff and the health staff must understand what each other are working on, and the particular challenges that they face. For example, social organizers working closely with communities to implement improved livelihood schemes in Madagascar received training in conservation and family planning from WWF and ASOS (local health NGO) respectively while the two organizations also exchanged sector-specific knowledge among their regional staff and program managers (WWF Madagascar, Successful Communities from Ridge to Reef Project).

3. The Role of institutions

In addition to creating capacity in individuals, you need to build capacity in institutions as well. As the individuals in institutions change, the institutions themselves must be able to learn and grow in order to continue despite staff turn-over. One way that this is being done in the Philippines is to strengthen the generic problem-solving capacity of Peoples organizations and communities to be able to develop innovative solutions, learning through experience and applying these lessons. Such capacity building in conjunction with project development, implementation and monitoring represents a “value added” dimension to PHE outcomes. It can also contribute to the sustainability of the inter-linkage approach.

Another way to build capacity in institutions is to facilitate connections among them. These connections allow leaders to meet other leaders, to create new institutional relationships, and to gain support in other sectors. The United Nations, for example, has facilitated linkages among leaders from 43 small island states (SIDS) and low-lying coastal countries that share similar development challenges and concerns about over-population and the environment, especially their vulnerability to the adverse effects of global climate change. To increase their negotiating voice, the SIDS leaders have formed an alliance that serves as ad hoc advocacy group (AOSIS). Forming such a group can also help organizations increase the sustainability of their projects by finding other individuals and

organizations that have similar interests (M. Kishi, personal communication 2007).

Some institutions may be reluctant to take on a role in a PHE project for fear of "mission drift" or other concerns. Experience from Ecuador, however, suggests involvement can improve an institution's image. This pioneering study implemented by World Neighbors and designed to measure the impact of integrated versus non-integrated approaches to rural development concluded that "[o]ffering services to the community in two integrated components undoubtedly benefits the population, while at the same time improving the image of the institutions involved. CEMOPLAF (local health NGO) has a much better image among the communities with integrated health and agriculture services than in the communities where only the health component was offered". (World Neighbors, 1999)

Further resources on increasing capacity and knowledge

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State Government of Victoria, Australia, Department of Human Services. Health promotion interventions and capacity building strategies. Available online at: www.health.vic.gov.au/healthpromotion/hp_practice/interventions.htm. Outlines key action for building capacity for integrated health programs and projects that are also relevant to PHE projects.

United Nations Environment Programme – World Conservation Monitoring Center. Available online at: www.unep-wcmc.org/capacity_building/index.html. They have created a capacity building programme to provide services institutions and individuals. Accessed August 2007.

CHAPTER 4. CREATING A LONGER, LARGER IMPACT

You want to ensure that the PHE approach is able to have a large impact, for a long time period. This chapter of this manual outlines some of the mechanisms that were built into the design of projects in the Philippines, Madagascar and other countries where PHE approaches demonstrated high impact, scalability and sustainability.

As has been emphasized throughout the manual, projects that use integrated approaches offer the best potential for generating high impact and achieving economies of scale due to the added value and synergy they can create. That small actions can catalyze dynamics that create large impact on communities of people, or communities of organisms, has been documented in several case studies of environmental "tipping points" by Marten and others ecologist who believe that ecosystems and human social systems form a unified whole (eco-social system concept) and that whatever affects one, affects the other . Small improvements in social and ecological systems can *reinforce* one another, to turn around both systems from degradation to health, thus explaining why interlinked PHE approaches create synergies not found in vertical approaches (Marten, 2001).

A. Achieving Sustainability

Sustainability in the context of PHE projects can be thought of as the ability of the project activities to persist, after the formal project itself has stopped functioning. Therefore, in order for a PHE project to be sustainable, the activities must be adopted by members of the community, including local institutions.

1. Mechanisms of sustainability

Devolution of power. A key component that can affect sustainability is extent of devolution of power to - and the capacity of - local level organizations (see Box 5). Local organizations are believed to contribute to sustainability as they often are committed to a particular area, in contrast to national and international organizations that may have a larger scope. Therefore it is important to identify local organizations or village institutions that can fulfill this role. In both Madagascar and the Philippines, projects designers empowered commune development committees and village development councils with PHE knowledge and planning/budgeting skills so they could access local development funds in the future (see Box 6 on leaders in Madagascar).

Local federations/organizations. Mechanisms that create or strengthen relevant federations operating in the project area can also promote longer project impacts. A case in point is the Federations of Farmers' Cooperatives (Koloharena) that USAID helped to create, empower, and link with eco-agro-economic development in Madagascar. The annual plans developed by the Koloharena, which focus on NHWP actions, are updated annually to sustain and expand the cross-sector approaches to biodiversity conservation and rural development (L. Gaylord, personal communication 2007). A second example comes from the island of Busuanga, Philippines, where the implementing NGO partner organized the Peer Educators and CBD agents into federations in order to keep up the behavior change communication and contraceptive distribution activities after the project's termination. PATH Foundation Philippines helped by securing a franchise arrangement for the NGO that enables it to continuously resupply the federations with affordable and quality family planning products (PFPI, 2007d, pg 5).

Box 5. Decentralization and Sustainability in the Philippines

In a relatively short time, the Philippines has achieved progress in terms of building institutional capacity and mainstreaming PHE in local governance - both of which enhance long-term sustainability. This is partly due to fact that the Philippines Local Government Code devolved significant resources, in addition to authority, to local government units for the delivery of basic services in agriculture, environment, water supply, health care, local infrastructure and social welfare. This provided an accessible avenue for proponents of PHE to engage local decision makers in their programs. The same Code also included provisions for popular participation in local governance, particularly at the barangay (village) level, through provisions that created "special bodies" such as local health boards, barangay development councils (BDC) and barangay fisheries and aquatic resource management committees (BFARMC). The provisions also mandate at least 25 percent of the membership of these bodies come from non-governmental organizations (NGOs), people's organizations (i.e., fisherfolk, farmers) and other civil society groups (i.e., women and youth clubs). As a result, there is significant opportunity for managers of community projects to work with and through these "special bodies" to advocate uses for local development funds (De Souza, 2007).

Level of engagement of community. The ability to effectively engage the community and communicate the linkages to the community is also an important factor in sustainability. The Environmental Health Project in Madagascar used the rural participatory appraisal (RPA) process to engage Mayors, CDC executives and community members in preliminary activities that identified problems related to deforestation and slash-and-burn harvesting and their consequences for water and sanitation, health, nutrition, etc. This helped to build political will and populace commitment to change two of the three results requisite for inter-linkage approaches to work, in that's country's experience. And once the community understood the inter-relationships between PHE and food security, the community was more interested in participating and sustaining the activities (O. Randriamananjara, personal communication 1997). The experience of IPOPCORM and PESCODEV provide further examples of how effective communication of the interconnections between population-environment and poverty in coastal

Philippines helped to elucidate PHE concepts and garner political commitment and local funding to advance and sustain integrated coastal management (ICM) approaches that incorporate reproductive health management.

Integration. There is also some evidence to suggest that integration, in and of itself, enhances sustainability. Some synergistic approaches may also be *self sustaining* if the remediation brought about by the approach is effective. In IPOPCORM project, experience suggests that CRM provides a *context* for people to understand the necessity of limiting family size to assure food security from the sea. Better understanding facilitates acceptance and practice of family planning which, in turn, can enhance the sustainability of gains achieved through conservation effort by reducing human growth pressures on productive ecosystems. The interconnected processes set in motion by implementing RH in tandem with CRM can generate outcomes and synergies that mutually reinforce each other and perpetuate the remediation processes and the PHE approach. In this case, such outcomes and processes include better managed coastal resources resulting in increased flow of natural products and services leading to improved household food security and nutritional status of children lessening the needs for many children to assure a few survive, which reinforces family planning practice and contributes to reduced fishing effort which can enhance the diversity and productivity of coastal ecosystems, and the cycle continues.

Some mechanisms you should consider at the project design phase that could enhance the sustainability of your PHE initiative include:

- Pre-project assessment of candidate partner(s) track record in sustaining development activities.
- Community research to identify the livelihood and coping strategies of poor households.
- Cost recovery mechanisms for family planning and other essential health products.
- Proposal-writing skill-building for local development councils and committees.

Box 6. Working with Leaders in Madagascar

NGOs in Madagascar have also worked closely with Mayors and existing local institutions to promote balanced and sustainable development in conservation priority areas by applying a social mobilization process called Champion Communities (CC). These CC projects enabled fokatany (village) leaders and community members to identify local needs and priorities, set realistic objectives and implement small actions that brought about improvements in health and/or local governance and/or conservation, which were then celebrated by the entire community. Water and food security proved to be good unifying themes for communities to understand the linkages between their lives and their environments and to modify behaviors that posed threats to their wellbeing and the environment. Under the Madagascar Green Healthy Community (MGHC) project (2002-2005), the CC approach was scaled-up through the joint effort of an NGO consortium (Voahary Salama) working in partnership with newly devolved administrative units at the commune and village levels. In an effort to support decentralized planning, the CC approach was marketed as a tool for local and regional development under the name Kaominina Mendrika (KM) or "Champion Communes." KM proved to be an efficient platform for capacitating commune development committees (CDC) to plan and facilitate cross-sectoral activities implemented by rural communities bordering protected areas. More recent initiatives supported jointly by USAID's Health and Environment/Rural Development offices in Madagascar are building upon and extending the KM approach by working through strategic alliances and new regional and inter-regional platforms to advance cross-sectoral approaches in ecoregions prioritized for biodiversity conservation (USAID Madagascar briefing document, 2007).

- Governance and advocacy skill-building for resource user groups.
- Capacity building of local institutions.
- Gender and social inclusion mechanisms to assure equitable access.

2. Financial sustainability

In addition to project sustainability, you need to think about financial sustainability – which then contributes to overall project sustainability. One mechanism to enhance the financial sustainability of the PHE approach is to incorporate a livelihood component in the project (see Box 7). A livelihood component involves activities that enhance an individual's or family's income. Oftentimes it is created in order to substitute resource intensive activities for an activity that is less threatening to the resource in question. An example of a livelihood component is creating a business selling locally harvested honey – in order to reduce harvesting of other non-timber forest products that may be threatened. Ideally the livelihood component will be independently viable and will become part of the communities' lives, and will therefore contribute to the sustainability of the project. Livelihood components should:

- **Be relevant to the people in the area.** Introducing beekeeping to an area, for example, may be more difficult and less sustainable if there is no history of such activities.
- **Reinforce the environmental efforts of the project.** If the project advocates harvesting a particular resource for a business venture, it needs to ensure that there is a sustainable management plan for this resource (so it does not contribute to resource degradation).
- **Be built on activities that are already on-going if possible.** Again, if there is a local beekeeping business already going, it makes sense to help add value to the business, for example by helping the community develop the marketing end of this business, rather than introducing something new.
- **Have a counterpart contribution from all players involved** – whether it be cash, in kind, commodities. The communities may be more likely to work towards making the livelihood a success if they are somehow vested in it.
- **Prioritize women or youth for economic alternatives.** Women are often involved in the resource gathering activities for the family and generating substantial income from side activities. These are often the activities that can be further developed into more sustainable livelihood activities.
- **Be supported by sufficient market mechanisms.** The activities must be viable in the relevant market. For example, if you create an ecotourism venture to decrease dependency on a particular resource, you need to ensure that the physical and marketing infrastructure exists that will bring the tourists to your site.

Box 7. Factors to Consider If Creating an Enterprise/ Alternative Livelihood Component

Biodiversity Conservation Network evaluated whether enterprise based approaches to conservation were effective (See Salafsky et al., 1999). Some general factors (and questions to consider) from their results are:

The type of enterprise/alternative livelihood:

- Potential profitability (Will the enterprise generate a profit?)
- Market demand and existing marketing linkages (Does the demand, and the market linkages, for the enterprise already exist? Do you need to create additional infrastructure?)
- Local enterprise skills existing and complexity of enterprise (Does the community need to acquire additional skills? How complex are the skills?)
- Linkage of enterprise to the resource being targeted (Is the community going to decrease the amount of land they use for agriculture because of involvement in an ecotourism business?)

The type of benefits generated from the enterprise/alternative livelihood:

- Noncash benefits (Are there social, aesthetic, environmental benefits?)
- Amount and timing of cash benefits (How much cash will people receive? How long after the inception of the project will the benefits materialize?)
- How benefits are distributed to stakeholders (Are they just given to the leaders, just the participants, the entire community?)

The characteristics of stakeholders (SH) involved in enterprise/alternative livelihood:

- Organization and leadership of group (Is the group organized on its own or do you need to budget resources to strengthen it? Does the group have a strong leader?)
- Resource access that the group has (Do they have legal access to the resource the enterprise uses?)
- Source of threat and ability of the group to enforce resource restrictions (Is the threat from within the community and therefore enforceable or is it an outside threat, like a logging company?)
- Stakeholder homogeneity and level of conflict in group (Is the group composed on one age class, one ethnic group, one gender? Is there conflict among the group or is it well functioning?)

Other:

- External factors (Is the political situation stable?)
- Organizations involved (How will implementing organizations affect project?)

A number of PHE projects in the Philippines coastal zone support alternative livelihoods schemes that are largely **land-based** and help to alleviate poverty and human pressures on marine ecosystems. In the case of community-based coastal/fisheries management, such schemes may be critical to assure poor fisher households are able to maintain their income level during the two-three year period required for fish sanctuaries to regenerate (PFPI, 2007c). Another

example is ecotourism development which WCS is promoting in junction with PHE activities implemented among forest communities bordering the Andohahela and Masoala national parks in Madagascar. Conservation International advises involving the children in the activities, so they become accustomed to different ways of making a living other than the traditional methods they usually witness. For example, in their projects in Mexico, women bring their daughters to the group meetings, and in Madagascar, schools have set up demonstration gardens to teach students and their parents about sustainable farming (Edmond & Fisher, 2005f).

Mechanisms that enabled PHE projects to recover a portion of the cost of delivering a public good or service is another component of financial sustainability that stands out in the experience of both Madagascar and the Philippines. Some examples of these mechanisms include:

- Revolving funds for family planning/health products and agricultural seeds and tools.
- Water user fees for members of a cooperative that maintains a water supply system or crop processing facility established under the project.
- Entry fees into protected areas for hiking, bird watching, diving and other eco-friendly recreational activities.
- Fees for services provided by guides, homestead operators and other individuals associated with the eco-tourism venture.
- Reimbursement of costs for organizing and facilitating study tours for individuals interested in observing field-based PHE activities.
- Fees for livestock breeding services or use of collectively owned agriculture machinery.
- Membership dues for organizations that participate and benefit from a PHE network or alliance that coordinates and facilitates advocacy, fund-raising and other activities for the consortium's members (e.g., PHE Sique network in Philippines and the Voahary Salama alliance in Madagascar).

The Population and Community Development Association (PDA) of Thailand believes that it is equally important to strengthen the financial viability of grassroots NGOs working at the nexus of population-environment-development movements in the Asia-Pacific region. The model that PDA espouses takes a market-based approach to institutional sustainability and poverty alleviation in economically depressed communities. Through its international training program on NGO Sustainability, PDA assists NGOs to develop business plans for profit-making ventures that provide public goods and services at fair market price. The proceeds from the venture are then donated back to the non-profit

entity and/or the local cooperative involved in the endeavor to sustain and expand community development work. This mechanism can empower NGOs with independent sources of funds to support PHE and poverty reduction initiatives, which *they* believe are important rather than being driven by the priorities of donor agencies. PDA, itself, is a model for how market-based approaches can be applied to enhance both the viability of a NGO and the sustainability of programs and projects it undertakes with communities to improve quality of life (M. Viravaidya, personal communication 2007).

Further resources on achieving sustainability

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Sustainability Knowledge Network. Available online at: www.sknworldwide.net/. This network is a "collaborative Workspace to facilitate Stakeholder and Topical Research, Implement Projects and build Social Networks of organizations, institutions and people driving Sustainability and a better quality of life for all."

United Nations Population Programme (UNFPA). N.d. Women and sustainability. New York. Lessons learned about empowering women for sustainable development.

B. Scaling Up

1. Ways to scale up

Even though your project initially may only be operating at a single site, you still want to think of how it can operate at a larger scale in order to have a greater impact. As with sustainability, it is best to think about scaling up from the beginning, even if you do not have concrete plans to do so. Cooley and Kohl (2006) discuss scale up in terms of three types of activities: expansion, replication and collaboration (as cited in De Souza, 2007). It is important to note that while these are three ways to scale up, they are not necessarily discrete categories. Many scale-up efforts may include more than one of these types of activities:

Expansion allows for scaling up by increasing the scope of operations of the organization that originally developed and piloted it (De Souza, 2007). An example of expansion activities can be seen in the IPOCORM project, which aimed to cover as many of what they deemed as high-growth hotspots as possible within the shortest period of time. Once established in the areas initially targeted for assistance under the program, the project extended services

to people living in different hotspots within the same 'biozones' (year 3-4), and then to additional 'biozones' in the country (year 5-6) until the approach had been introduced to one-half of the country's top ranked marine hotspots. Close to 375,000 people were reached by the project's interventions. Integration at scale depended largely on the presence and interest of local Peoples Organizations and the technical capacity and commitment of the local government-NGO partners that supported their efforts.

Replication involves increasing the use of a particular process, technology or model of service delivery by getting others to implement the model (De Souza, 2007). The experience of PESCODEV serves as a good example of replication. SAVE-Philippines recognized that the integrated approach introduced to the municipality of Concepcion could serve as a working model for poverty alleviation for other members in the Northern Iloilo Alliance of Coastal Municipalities. They therefore incorporated additional inputs and investment into the project design to strengthen the capacity of the Concepcion LGU in participatory community planning and PHE programming and monitoring. These processes reportedly enabled the Concepcion LGU to make the link between PHE and poverty alleviation and "achieve better and stronger results in both reproductive health and CRM than any time before," according to its Mayor (Chan-Pongran, 2006, pg 5). As a result, Mayor Banias endorsed the PESCODEV approach to the Alliance and helped its members to secure grants from the Philippine-Canada Development Fund and UNFPA to replicate the model throughout the northern Iloilo coastal zone. A second example is the Nepal PHE Project design, which foresaw the potential for using an existing nation-wide network of federated community forest user groups (CFUG) to replication a PHE approach that links reproductive health and alternative energy schemes with community forest management and good governance. RIMS, WWF and other NGOs are currently working with USAID Nepal and selected CFUGs to replicate the approach on a district- and landscape-wide basis.

Collaboration involves the use of strategic alliances with different types and levels of organizations. A case in point where collaboration facilitated scale up is the World Neighbors-Philippines project entitled "Making the Connection: Assessing the Impact of Integrating Natural Resource Management and Reproductive Health in the Loboc Watershed, Bohol Island." The project was originally designed to evaluate an integrate NRM/RH approach using a quasi-experimental design that compared linked NRM/RH with stand-alone RH management and stand-alone water shed management. Although there were not significant differences in reproductive health or NRM indicators in the three program sites after the brief (less than 20 months) implementation period, the study findings indicate that the integrated approach "positively impacts community organization and empowerment, and generates active involvement of a broader segment of the community (WN, 2006, pg i)." The same study

documented the value of working in partnership with a number of difference stakeholders – particularly the Bohol Alliance of Non Governmental Organizations (BANGON) which subsequently brought the NRM/RH approach to scale in 27 other communities within the Loboc Watershed. "Without an investment in the capacity of other key stakeholders, the absorptive and implementation capacity would not likely have been available. Thus, it is essential to be working at many different scales (time, spatial, and organizational) in order to ensure longer-term sustainability. In this case the watershed as a unit of analysis provided the vision for building a more holistic approach (WN, 2006, pg 48)."

2. Scaling up in Madagascar and the Philippines

One of the primary reasons that the integrated projects in the Philippines and Madagascar have been able to operate at a larger scale is because these two countries have decentralized systems of governance that encouraged the growth of integrated approaches to rural development and biodiversity conservation which, in turn, contributed to the decentralization process and good governance practices (see Box 8). In 1990 and 1991, respectively, Madagascar and the Philippines enacted laws that mandated the transfer of authority, responsibility, and resources from the central to independent local governments unit. Whereas in the Philippines decentralization got underway immediately and with active involvement of non-governmental organizations, in Madagascar the process was slowed by a series of political and economic crises and a dearth of civil society organizations. Only in 2004 did the Malagasy government begin, in earnest, an incremental process of decentralization by creating sub-provincial government units (Regions) that have yet to receive significant resource transfers. Nevertheless, this has provided new opportunities and platforms for integration to occur within regional and commune development plans and agendas conforming with the national Madagascar Action Plan (2007-2012), which recognizes the role and importance of both family planning and biodiversity conservation to national development and poverty alleviation (For more information on scaling up in these two countries see Gaffikin, 2007 and DeSouza, 2007).

Box 8. Scaling up in Madagascar

In her research on scaling up PHE, Gaffikin (2007) found that some of the conditions that enabled scaling up in Madagascar to occur were:

- Support from the top, most notably the president.
- Country reform, particularly after the 2001 election, the country entered an era of active policy and national program reform.
- High domain profile associated with both the FP and biodiversity conservation domains.
- High level dialogue, such as between donors, NGO partners and the Government of Madagascar (and more recently, the private sector).
- USAID Mission programming, which included the promotion of PE linkages through sector-specific funding such as the NWP framework in Madagascar to include health/FP and development of a generic KM approach to support the four development domains represented by NHWP.
- FP and conservation organization partnerships that were formed to between a number of conservation organizations and health and/or FP organizations (local and international).
- Country technical support from USAID funds.

3. Challenges to scaling up

Most projects should aim to increase their scale of reach, but the question is how to effectively do it. PHE projects face a unique challenge in that public health projects often aim to scale up in terms of breadth of coverage, such as the number of people served, while environmental projects often aim to scale up in terms of geographic coverage, such as expanding from a site to a watershed or ecoregion. In many biodiverse areas where the population is spread out, expanding breadth and geographic coverage may be difficult. And yet, for PHE projects to effectively scale up, they need to try to address both.

In addition, when scaling up, integrated approaches may become sectoral again in the effort to expand its reach to large numbers of people. The Champion Community (CC) approach, for example, was integrated but too localized to generate significant impact. When the SanteNet project tried to scale up its operations to the commune level, CC reportedly became sectoral again resulting in what is commonly referred to in Madagascar as the KMS approach e.g., Champion Commune-Health (J. Ratsirarson, personal communication 2007). Another potentially contributing factor was the lack of funds to simultaneous implement the "E" component of the CC model (L. Gaylord, personal communication 2007).

While the financing of the scale up can indeed present challenges, several cases demonstrate some of the options that exist. In the Madagascar Green Health Community Project (MGHC) project, organizations were able to work with other NGOs to obtain additional financing for scaling up. The MGHC project was able to influence two other agencies (UNESCO and Tany Meva Foundation) to finance the replication of its PHE approach in other national parks in the country (e.g., Mindongy du Sud). This suggests that a unique source of funding is not always necessarily for scale-up (Y. Ribeira, personal communication 2007). The Population and Community Development Association of Thailand (PDA) created another mechanism for financing scale up through the establishment of several for-profit entities that generate revenues which are then donated back to PDA to further finance the expansion of existing integrated programs. And partnerships can also offer financial support. The EHP project interventions in Madagascar- which reached about 125,000 people in just over three years and generated impact at relatively low cost - demonstrate the efficiency in which cross-sectoral approaches can be brought to scale when there exist "effective mechanisms on which a range of partners can collaborate" (Kleinau, 2005).

4. Lessons on scaling up

Some of the main suggestions borne out of the lessons learned from projects that have been able to reach a larger scale are:

- Create or link with existing alliances that could serve as your platform for rapid scale-up.
- Seek continuous funding, from both domestic and international sources.
- Implement active advocacy, at the national and sub-national levels, to support project issues (such as family planning).
- Build evidence of the need of an integrated PHE approach by talking with local stakeholders, policy makers, local government officials and chief executives of private organizations, particularly NGOs.
- Support your findings with other independent sources of information.
- Shift focus from implementation to sustainability. In Madagascar, one way the Green Healthy Community project was able to scale up was by shifting emphasis from activity implementation to how accomplishments of the previous years could be sustained and extended.
- Support income generation activities because they can improve household livelihood security, offset opportunity costs for conservation effort, and make populations more settled and less apt to migrate.
- Build capacity of local governments to use community participatory planning methods.
- Build capacity of local organizations to enable them to make their own action plans/budgets and to write their own proposals so they can have a larger voice in the design of local development initiatives affecting them; and will be able sustain the gains achieved from their PHE efforts.
- Foster local government "champions" to advocate with higher-level decision-makers to integrate population and environment perspectives into ecoregional development plans e.g., AAP approach in Danajon Bank, Philippines and ERI approach in Madagascar.

(from John Snow, Inc., 2005, PATH Foundation Philippines Inc,. 2006, De Souza, 2007, Gaffikin, 2007, and Z. Zatovonirina, personal communication 2007).

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De Souza, Roger-Mark. (2007, August). Scaling up of integrated population, health and environment approaches in the Philippines: A Review of early experiences. Washington DC: WWF. This paper examines how PHE projects in the Philippines have been able to scale up, and what lessons can be learned for other projects looking to do so.

Gaffikin, Lynne. (2007). Population environment scale up: Madagascar case study - Meeting family planning needs, reducing future pressure on natural resources and biodiversity and promoting sustainable livelihoods. Washington DC: World Wildlife Fund. A detailed review of how initiatives in Madagascar scaled up and the lessons we can learn from it.

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APPENDIX 1: QUESTIONS FOR DONORS

While there is no one template to use when reviewing proposals for integrated projects, there are a series of questions that donors can ask themselves, regarding the proposed project, to determine if the proposal has addressed the most important factors.

Linking and Managing PHE

- Have they explored the linkages between population, health and environment needs in the area and articulated them in a coherent fashion in the problem definition or statement section of the proposal?
- Have they created a conceptual model that draws strong linkages that make sense between population, health and environment factors and desired outcomes in the area where they are proposing to work?
- Is their target condition something that can affect the PHE situation in the area?
- Are their goals integrated? Is an integrated approach appropriate and feasible in this situation?
- Are their objectives SMART and linked to their outcome? (specific, measurable, appropriate, realistic and timely?) And are they liked/integrated across the health and environment issues in the area? Are their assumptions about these linkages valid?
- What is the time frame of their project and how will their environmental activities be achieved in the project cycle?
- Have they created a results chain or similar outline of how a strategy might affect the desired outcome? Have they explicitly stated their assumptions behind this?

Determining Policy Context

- Are they working within an existing framework within government where the project is working? If so, what are current developments within that framework? Have they explored policies within the government pertaining to issues such as food security or HIV to see if they can fit in working frameworks? If not, have they explored other types of development frameworks that may be applicable?
- Are they building on an existing project? If not, why not? Have they sufficiently reviewed all projects in focal area to rule out this possibility?

- Does the policy framework provide a clear roadmap to integrating population, health and environment within the project? Does it have a specific population component and a specific environment component?

Selecting Interventions & Activities

- Are their activities linked on the ground? If their activities are single sector, how do they plan to integrate them conceptually at the community level?
- Are their activities linked to their target condition? Has their conceptual model been ground-truthed?
- What mechanisms are they going to use for project implementation? Are they following an implementation model? Is it appropriate given their target audience?
- What type of field level intervention are they going to use? Has it been used under similar conditions before?
- Will their intervention generate value added impacts?
- What type of IEC interventions will they use?

Creating Social Rewards

- What types of noncash benefits will the project create? Have they determined what might be particularly important to the community? (preservation of a sacred site, community project, etc)
- Does it seem that these benefits will be enough to encourage participation in the project? Are there examples of this in the community?

Determining Criteria for Site Selection

- How did they choose their site? What criteria did they use? Did they first consider the need of intervention, desire of community to participate and biological factors?
- How do the community members participate in the project? Is it clear the project has community support?
- Is an integrated approach appropriate? What are the drivers of population growth in the area?
- Are the resources in the area worth conserving and intensely managing?

- Is the community aware of population growth as an issue? Do they support population programs?
- How remote is the proposed site area? Will additional resources need to be devoted to infrastructure to implement the project?

Creating a Monitoring and Evaluation (M&E) Plan for PHE

- Do they have a M&E plan in place?
  Who are the audiences for their M&E plan?
- Will they have community involvement in the M&E?
- Do they have the capacity to execute the M&E plan or will they have to hire consultants? Have they budgeted sufficiently for this?
- Do they have indicators to capture information on the population, health and environment sectors?
- Have they thought out how to measure, collect and analyze the data?

Mobilizing Resources

- Have they tapped into the variety of financial resources available to PHE projects, such as provincial governments and UN agencies?
- Are they planning on having the communities contribute to the project in some way?

Forming Institutional Arrangements

- Do they have all the necessary technical skills in their organization or do they plan to partner to gain them? If they plan to partner, how do they plan to maintain integration among staff from different organizations?
- If they plan to partner, who will they partner with? What do you know about the other organizations?
- What role will the organization be playing in the alliance? Is this taking advantage of their strengths?
- Is there a local organization in the alliance? An organization with staff that know the communities and the situation well?
- Have they considered the role of the local government offices? What will be their role?
- What mechanisms are in place to make sure that there is sufficient coordination and communication across the sectoral teams or

partnerships? Are these sufficient? How will they make sure that the health and environment activities aren't being implemented in isolation of one another?

Increasing Capacity and Knowledge

- Do they have established leaders in the communities where they will work? How do they aim to support and develop leaders?
- What other capacity building activities do they have programmed?
- How will they ensure that the staff working in different sectors of the project gain capacity in the other relevant sectors?
- Do they have institutionalized mechanisms for learning to continue regardless of staff turnover?

Creating a Longer, Larger Impact

- How is sustainability addressed in the planning phase of their project?
- Are there income generating activities in the project? What will be the role of the women in the community?
- Have they considered the specific characteristics of the type of enterprise, the benefits generated from the enterprise, and the stakeholders? Are there any external factors that need to be reviewed?
- Is the project aiming to scale up eventually? How do they plan to do so?
- Do they plan to shift their focus from implementation to sustainability at some point in the project?

APPENDIX 2: ORGANIZATIONS AND CONTACTS

Environment Related Organizations

Conservation International.
www.conservationinternational.org
2011 Crystal Drive, Suite 500
Arlington, VA 22202
Telephone: (703) 341-2400
Toll-free (within the US): 1(800) 429-5660
Mission: Conservation International believes that Earth's natural heritage must be maintained if future generations are to thrive spiritually, culturally and economically.

The Nature Conservancy
www.tnc.org
Worldwide Office
4245 North Fairfax Drive, Suite 100
Arlington, VA 22203-1606
Telephone: 1 (800) 628-6860
Mission: The mission of The Nature Conservancy is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.

Wildlife Conservation Society
www.wcs.org
The Wildlife Conservation Society
2300 Southern Boulevard
Bronx, New York 10460
Telephone: (718) 220-5100
Mission: The Wildlife Conservation Society saves wildlife and wild lands. We do so through careful science, international conservation, education, and the management of the world's largest system of urban wildlife parks, led by the flagship Bronx Zoo.

World Conservation Union.
www.iucn.org
IUCN Headquarters
Rue Mauverney 28
Gland, 1196
Switzerland
Telephone: +41 (22) 999-0000
email: webmaster@iucn.org
Mission: The Union's mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

World Wildlife Fund.
www.worldwildlife.org
U.S. Headquarters
1250 Twenty-Fourth Street, N.W.
P.O. Box 97180
Washington, DC 20090-7180
Telephone: (202) 293-4800
Mission: WWF's mission is the conservation of nature. Using the best available scientific knowledge and advancing that knowledge where we can, we work to preserve the diversity and abundance of life on Earth and the health of ecological systems.

Population-Health Related Organizations

John Snow, Inc.
www.jsi.com
44 Farnsworth Street
Boston, MA 02210
Telephone: (617) 482-9485
E-mail: jsinfo@jsi.com
Mission: John Snow, Inc., and its nonprofit affiliate JSI Research & Training Institute, Inc., are public health research and consulting firms dedicated to improving the health of individuals and communities throughout the world.

Path Foundation Philippines
www.pfpi.org
24/F Yuchengco Tower, RCBC Plaza
6819 Ayala Avenue
1200 Makati City, Metro Manila
Philippines
Telephone: +(632) 845-2921
Email: info@pfpi.org
Mission: The Foundation's mission is to improve health and contribute to environmentally sustainable development, particularly in under-served areas of the Philippines.

Population Action International.
www.populationaction.org
1300 19th Street, NW Suite 200
Washington, DC 20036-1624
Phone: (202) 557-3400
Mission: PAI's mission is to strengthen political and financial support worldwide for population programs grounded in individual rights. Founded in 1965, PAI is a private, non-profit group and accepts no government funds.

Population Reference Bureau.
www.prb.org
1875 Connecticut Avenue, NW, Suite 520
Washington, DC 20009-5728 USA
Telephone: 1(800) 877-9881; (202) 483-1100
E-mail: popref@prb.org
Mission: PRB informs people from around the world and in the United States about issues related to population, health, and the environment. To do this, we transform technical data and research into accurate, easy-to-understand information.

Save the Children
www.savethechildren.net
Second Floor, Cambridge House
100 Cambridge Grove
London W6 0LE
Telephone: +44 (0) 20 8748 2554
Mission: Save the Children fights for children's rights. We deliver immediate and lasting improvements to children's lives worldwide.

Other Relevant Organizations

United Nations Environment Programme
www.unep-wcmc.org
United Nations Avenue, Gigiri
PO Box 30552, 00100
Nairobi, Kenya
Telephone: +(254-20) 7621234
Email: unepinfo@unep.org
Mission: UNEP's mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

Woodrow Wilson International Center for Scholars
www.wilsoncenter.org
Ronald Reagan Building and International Trade Center
One Woodrow Wilson Plaza
1300 Pennsylvania Ave., NW
Washington, DC 20004-3027
Telephone: (202) 691-4000
Mission: The Woodrow Wilson International Center for Scholars aims to unite the world of ideas to the world of policy by supporting pre-eminent scholarship and linking that scholarship to issues of concern to officials in Washington.

World Neighbors
www.wn.org
4127 NW 122nd Street
Oklahoma City, OK 73120 USA
Telephone: 1 (800) 242-6387
Email: info@wn.org
Mission: World Neighbors inspires people and strengthens communities to find lasting solutions to hunger, poverty and disease and to promote a healthy environment.

Donors

Johnson and Johnson
www.jnj.com
One Johnson & Johnson Plaza
New Brunswick, NJ 08933
Telephone: (732) 524-0400
Mission: (have no mission statement). Johnson & Johnson, through its operating companies, is the world's most comprehensive and broadly based manufacturer of health care products, as well as a provider of related services, for the consumer, pharmaceutical, and medical devices and diagnostics markets.

The David and Lucile Packard Foundation
www.packard.org
300 Second Street
Los Altos, California 94022
Telephone: (650) 948-7658
Email: inquiries@packard.org
Mission: The foundation has been guided for over 40 years by the business philosophy and values of our founders, David and Lucile Packard.

United States Agency for International Development (USAID)
www.usaid.gov
(specifically the EGAT Office and the Global Health Office)
Ronald Reagan Building
Washington, D.C. 20523-1000
Telephone: (202) 712-0000
Email: pinquiries@usaid.gov
Mission: The U.S. Agency for International Development (USAID) is an independent agency that provides economic, development and humanitarian assistance around the world in support of the foreign policy goals of the United States.

APPENDIX 3: ADDITIONAL INFORMATION ON LINKING AND MANAGING P,H, E

Table 3. Sample Logframe Matrix (adapted from IFAD)

Goal & Objectives	Performance Questions & Target Indicators	Monitoring Mechanisms & Information Sources	Assumptions
Improved livelihoods for 35,000 poor families in the Rutunga province through increased food security and enhanced income-generating opportunities	Performance questions: • For whom has food security changed and in which ways? • How has the purchasing power of target households changed? • How have project interventions influenced meeting the needs for housing, education and health? • How has the diversity and size of the local economy changed? • How have interventions affected the workloads, roles and well-being of different household members (women, men, young, old)? • How equitably have different social and economic groups benefited from the project's interventions? Target indicators: • 75% of families with food secure under average seasonal conditions • 30% increase in household expenditure on housing, education and health • Equal livelihood improvements for female- and male-headed households	Sample household surveys (baseline, mid-term, end of project and three years after completion) Participatory impact monitoring to complement household surveys Field observations by project and implementing partner staff Analysis of relevant government statistics Project monitoring reports Analysis of local economic activity (baseline, mid-term, end of project and three years after completion)	Continued and sufficient market demand exists for locally produced commodities and other products. Project benefits are not offset by declining government services and social benefits. Increased agricultural production and economic activity is not offset by the demands of population growth. Agricultural production can be profitable in a context of declining terms of trade for agricultural commodities. Productive capacity of natural resources is not degraded by intensification. People and institutions have the capacity to adapt to continually changing circumstances. Benefits are not offset by disruption of traditional livelihood strategies.

Goal & Objectives	Performance Questions & Target Indicators	Monitoring Mechanisms & Information Sources	Assumptions
1) Agricultural production Agricultural production increased and diversified in a sustainable way	Performance questions: • How have the diversity, level of production and productivity of agriculture changed in the target area? • What innovations have been developed or recommended and to what level have they been adopted? • How have the environmental impacts of agriculture changed? Target indicators: • Area of horticulture and vegetable production increased to 4,000 hectares • 60% of farmers achieving 70% of target yields in years with average seasonal conditions • Area of non-rice crops increased by at least 10% for small farmers • 70% of farmers adopting at least one environmentally sustainable practice • Chemical load in Besha River reduced to target levels (See also the indicators for each output.)	Land use and cropping pattern records kept by participating communities, farmers' groups and agricultural department Sample surveys of crop yields and gross-margin analysis undertaken by department of agriculture Participatory monitoring systems established with farmers' groups Environmental impact assessment process put in place Questions in household/ farm surveys	The productive capacity of the area is sufficient to meet food needs and provide surplus for sale. Sufficient market demand and adequate price for produce exist. Increased diversity and intensity of production is financially profitable. Changes do not have a disproportionate negative impact on overall labour use at the household level.

Goal & Objectives	Performance Questions & Target Indicators	Monitoring Mechanisms & Information Sources	Assumptions
2) Income generation Greater market access, chain management, value adding, rise in non-agricultural small enterprise development and more diverse means of household income	Performance Questions: • What value-adding or post-harvest initiatives have been established and what have the economic consequences been? • What changes have occurred in the movement of products from the local area? • In what ways and how successfully have markets for particular products been developed? • How have the levels and diversity of household income generation changed? • How have household roles changed? Target indicators: • 60% of households benefiting from at least a 20% increase in purchasing power • 100% increase in off-farm employment opportunities	Questions in household survey Monitoring by NGOs and women's groups Analysis of local economic activity (baseline, mid-term, end of project and three years after completion) Participatory impact monitoring to complement household surveys and economic study Field observations by project and implementing partner staff	Level of increased income is sufficient to make a significant difference in household ability to purchase livelihood needs. Food and other livelihood necessities are available for purchase. Project-induced changes in the local economy increase household income by more than costs increase. Increased economic activity flow benefits poor households and not middlemen. Changes do not have a disproportionate negative impact on overall labour use at the household level.

Goal & Objectives	Performance Questions & Target Indicators	Monitoring Mechanisms & Information Sources	Assumptions
3) Institutional development Government, private sector and NGO sector institutions are able to support sustainable agricultural and economic development effectively	Performance questions: • In what ways has the performance of the agricultural research and extension system changed? • How successful have the farmers' and women's groups and NGOs been in supporting agricultural development and new income-generating activities? • In what ways are private sector businesses contributing to development? Target indicators: • New strategic plan and annual work plans for department of agriculture effectively implemented • 500 farmers' groups operating effectively • 20 NGO organizations effectively supporting development • 300 women's enterprise groups operating effectively	Organizational assessment of the department of agriculture activity (baseline, mid-term, end of project and three years after completion) Reporting by NGOs, farmers' and women's groups Participatory impact monitoring of NGOs and farmers' and women's groups Field observations by project and implementing partner staff Monitoring of private sector activities	The department of agriculture has sufficient financial and human resources to support development. Increased business involvement will not exploit disadvantaged groups. Farmers/ Women are willing to participate in the support groups. The incentives for adopting new agricultural-production or income-generating activities are enough for people to be interested in the extension support offered by the farmers' groups and department of agriculture.

Source: International Fund for Agriculture Development (IFAD) "Guide to Project M&E"

APPENDIX 4: ADDITIONAL INFORMATION ON GENERAL MODELS FOR PHE SERVICE DELIVERY

Table 4. Examples of PHE issues and interventions

Issue/Threat/Opportunity	Intervention/Strategy	Outcome (desired change in behavior and/or social norm or target status)
A. Health related		
Child mortality associated with the transmission of diarrheal disease pathogens in the home	Hygiene, Safe water management, Sanitation	Proper hand-washing at critical times, preferably with soap
		Household water treatment using low-cost products such as "Sur-Eau"
		Locate groundwater source (protected well) at least 10 meters from latrine
Maternal and children mortality associated with malaria infections	Malaria prevention	Regular use of insecticide-impregnated bed nets
Common infectious diseases among children	Vaccination	Fully immunized child by 24 months of age
Preventable causes of blindness in children	Nutritional supplementation, home gardening	Periodic supplementation with high-dose vitamin A capsules
		Feeding children beta-carotene rich fruits and vegetables grown in home garden
Stunting, wasting and other types of malnutrition in children under five years	Nutrition education targeted to care-givers of children	Women and girls attend non-formal literacy classes which use materials that incorporate information on nutrition, breastfeeding, weaning foods
	Growth monitoring of children under-five years of age	Mothers bring children on a monthly basis where trained health volunteers weigh the child, record weight on a growth monitoring chart, and counsel the mother on improved feeding practices
	Blanket treatment of all members of the household with de-worming medicine	All members of the household comply with periodic treatment, adopt improved hygiene practices i.e., hand-washing at critical times
	Stool collection and testing for helminthes	Treatment compliance, improved hygiene practice

Issue/Threat/Opportunity	Intervention/Strategy	Outcome (desired change in behavior and/or social norm or target status)
Iodine deficiency disorders (cretinism, goiter and preventable causes of mental retardation)	Promotion of iodized salt, community based-distribution systems	Families purchase, store and use iodized salt regularly and correctly
Acute respiratory infections (ARI) in children and women	Early detection and case management	Women and children seek care from health workers trained to screen and manage ARI cases and refer complications to higher level
	Indoor air pollution control	Use of improved, smokeless, fuel-efficient cooking stoves (ICS)
	ARI prevention education	Mother relocates child to a room other than the kitchen during cooking times
B. Reproductive Health–related		
High rates of maternal and infant mortality	Family planning and birth spacing; community-based distribution systems	Correct and consistent use of modern contraceptive methods to space or limit the number of births
		Exclusive breastfeeding for the first six months of life
	Pre and post-natal care	Regular pre-natal visits to trained birth attendant, postpartum contraception practice
Prevalence of HIV and other sexually transmitted infections (STI) in adult and sexually active youth populations	HIV/AIDS/STI prevention education	Self-assessment and modification of risky behaviors particularly unprotected penetrative sex, sharing of needles/syringes, and commercial sex
	Condom access and use	Correct and consistent use of condom with all sexual partners
	Voluntary testing and counseling	Access laboratory testing services for HIV and other STIs, attend follow-up counseling session and comply with treatment protocol

Issue/Threat/Opportunity	Intervention/Strategy	Outcome (desired change in behavior and/or social norm or target status)
C. Environment/Resource		
Slash and burn agriculture	Protected areas	Protect the areas of highest biodiversity before cleared
	Alternative income generation	Agriculturalists shift emphasis to different source of income, decreasing need to clear additional land
Collapse of near-shore fishery	Establish "no take" areas, fish sanctuary, marine protected area (MPA) Alternative livelihood e.g., seaweed farming and land-based enterprises	Refrain from fishing, gleaning and other extractive practices in MPA; initiate alternative economic activity
Soil degradation	Composting linked to organic waste management	Household members recycle organic waste, create compost to improve soil condition and intensify crop production
Traffic in threatened species	Protected area, ban on extraction of exotic species	Refrain from capturing, transporting and selling threatened species of animals and exotic plant species
Deforestation	Zoning; forest management transfer to community to enable natural regeneration of trees	Refrain from logging and other extractive practices; help with enforcement efforts
	Tree nursery to diversity species used in reforestation	Replant samplings and tend young trees
Loss of forest biodiversity	Productive forest management transfer to community	Comply with sustainable harvesting regulations; help with enforcement efforts

APPENDIX 5: LIST OF INDIVIDUALS INTERVIEWED

Alcala, Angel. Siliman University Angel King Center for Research and Environment Management, Dumaghete, Philippines (Interviewed in 2004)

Andriamahemima, Fenosoa. Executive Director, Tany Meva Foundation for the Environment (Madagascar)

Andrianandrasana, Onimadimbisoa. Program Assistant for National Coordination, Eco-regional Initiative (ERI) Program (Madagascar)

Andrianarimisa, Aristide. Ornithology Research Coodinator, WCS Madagascar

Benazerga, Wendy. USAID Madagascar Health, Population & Nutrition Team Leader (Madagascar)

Burren, Christian. Forestry Expert, JARIALA, member of ERI Alliance (Madagascar)

Cameron, Samantha. Regional Coordiantor, Ny Tanintsika (local NGO) (Madagascar)

Clarke, Gibb. Program Associate, Environmental Change and Security Program. Woodrow Wilson Center for International Scholars

Cordes, Bernd. Program Officer, Conservation Science Program. The David and Lucile Packard Foundation

D'Agnes, Heather. Population-Environment Technical Advisor, USAID

Dabelko, Geoff. Director, Environmental Change and Security Program. Coordinator, Global Health initiative. Woodrow Wilson Center for International Scholars

Dakan, Lana. Program Officer, Population Program. The David and Lucile Packard Foundation

DeSouza, Roger-Mark. Director of Foundation and Corporate Relations, Sierra Club

Edmond, Janet. Director, Population and Environment Program. Conservation International

Engelman, Robert. Vice President for Programs, The Worldwatch Institute

Freudenberger, Mark. COP ERI-Fianarantsoa (Madagascar)

Gaffikin, Lynne. Evaluation & Research Technologies for Health, Inc. Consultant to WWF

Gaylord, Lisa. USAID Madagascar Environment/Rural Development Team Leader (Madagascar)

Honzak, Cara. Population and Environment Specialist, World Wildlife Fund

Kishi, Misa. Senior Environmental Health Specialist, JSI Research and Training Institute, Inc.

Kleinau, Eckhard. Director, AIM Activity

Lauro, Don. Program Officer, The David and Lucile Packard Foundation

Loucks, Jennifer. Health Advisor, CARE International Madagascar

Lutz, Daniel. Intern, SO6 USAID Madagascar

Melnyk, Mary. Senior Advisor-Natural Resources Management USAID-Asia & Near East Bureau

Mogelgaard, Kathleen. Assistant Director of Government Relations, National Audubon Society

Oglethorpe, Judy. Director of Community Conservation, World Wildlife Fund

Park, Mike. Former Deputy Team Leader, HPN, USAID Madagascar and former JSI-R&T staff for MGHC project

Pielemeier, John. Consultant and Independent Evaluator of the PHE Portfolio

Poole, Joshua. Project Coordinator, ADRA Madagascar

Raharilaza, Nathalie. Responsible Technical Officer, Ny Tanintsika (Madagascar)

Rajaona, Jean Baptiste. Communal Development Committee President (Madagascar)

Ramanandafy, Voahangy. Techical Coordinator, MICET (local NGO) (Madagascar)

Ramanase, Zoelimalala. USAID Madagascar Environment Officer and Land Resource Management Specialist (Madagascar)

Ramonjasoh, Rufin. Socio-Organizer, Zone Quest, ERI Fianaransoa (Madagascar)

Randriamananjara, Odile. Former Executive Director, Voahary Salama and current Resident Representative for JSI-managed Hygiene Improvement Project (HIP). (Madagascar)

Rasamoelina, Holisoa. Communications Specialist, SanteNet, Madagascar

Rasoarinoro, Voahanginirina. PHE Project Coordinator, WWF Madagascar

Ratefinjanahary, Joelina. Regional Coordinator, HIP Project (Madagascar)

Ratovonelina, Commune Mayor (Madagascar)

Ratsirarson, Josea. Coordinator, Medical Care Development International (MCDI) (Madagascar)

Raxafimandimby, Andriamandrato. General Manager, Voahary Salama (Madagascar)

Razafimbahiny, Anna. French-English intepreter/translator

Razaivaovololoniaina, Melinoro. Project Coordinator, AINGA (Madagascar)

Ribeira, Yvette. Former Director, MGHC/JSI and current Director of PENSE (local NGO spin-off of JSI T&R). (Madagascar)

Robinson, Doreen. Economic Growth, Agriculture, and Trade (EGAT) Office, USAID

Rosensweig, Fred. Senior Consultant Training Resources Group (TRG)

Solofonome, Andriamampoenimanalina. Survey & Evaluation Specialist, AINGA (Madagascar)

Talbort, Jennifer. Former PHE Fellow and current COP ERI-Toliara Province (Madagascar)

Viravaidya, Mechai. Chairman, Population & Community Development Association of Thailand

Zafimbara, Evariste. Communal Committe President (Madagascar)

Zatovonirina, Zo. Communication & HPE Project Manager, Conservation International Madagascar

And 7 newly elected village (fokantany) presidents