

Rethinking the Link: A Critical Review of Population-Environment Programs

James Oldham

February 2006



A joint publication of the Population and Development Program at Hampshire College and
the Political Economy Research Institute at the University of Massachusetts, Amherst

Rethinking the Link: A Critical Review of Population-Environment Programs

by James Oldham

February 2006

*A joint publication of the Population and Development Program at Hampshire College
and the Political Economy Research Institute at the University of Massachusetts, Amherst*

The Population and Development Program at Hampshire College brings a global feminist perspective to the study and investigation of population and environmental issues and challenges traditional views of overpopulation and immigration as the primary causes of environmental degradation, political instability, and poverty. This report launches the Population and Development Program's **Population Policy Initiative**, which brings new research and analysis to policy makers in population, environment, security and related fields. For more information on the Population and Development Program, see <http://popdev.hampshire.edu>.

The Political Economy Research Institute (PERI) at the University of Massachusetts, Amherst, engages in research, dissemination, policy advising, and graduate student education. The Institute is committed to addressing basic issues of human and ecological well-being through research written for the general public, policy makers, and academic audiences. PERI's Program on Development, Peacebuilding, and the Environment seeks to foster research on policies to promote environmentally and politically sustainable development throughout the world. For more information on PERI, see www.umass.edu/peri.

James Oldham is founder and director of Las Lianas Resource Center, an organization that supports indigenous communities in the Amazon region of South America in their efforts to protect their culture and natural environment. In this capacity, Jim has helped the Secoya community of Ecuador to establish a self-sufficient aquaculture project, raising native fish to improve community nutrition. In addition, Jim led the team of advisors that helped the Secoya to create the first-ever code of conduct to guide behavior of oil companies operating in the region. Other projects of Las Lianas include work to secure legal territorial rights of indigenous communities in Ecuador, community-based environmental monitoring of oil company activities, and reporting on the environmental and human health effects of aerial herbicide spraying carried out as part of the US sponsored "war on drugs" in Colombia. Jim has a BA in Natural Sciences from Hampshire College, where he studied environmental science and international development, and he has done postgraduate research as a Fulbright scholar at the Instituto Español de Oceanografía, in La Coruña, Spain. His research includes the role of traditional agricultural technologies in modern development, aquaculture development in rural communities of Latin America, and the impact of aquaculture on the ecology and economy of northwest Spain.

This document can be downloaded at: <http://popdev.hampshire.edu/news.php> and at <http://www.umass.edu/peri/popenvt.htm>.

Acknowledgements

This study could not have been completed without the assistance of the many people who gave generously of their time to answer questions and provide written materials. Special thanks are due to the individuals who welcomed the author into their offices to answer questions or participated in long phone interviews: Janet Edmond, Melissa Thaxton, Jennifer Kaczor, Bob Engelman, Cara Honzak, and Judy Oglethorpe. For taking the time to respond to email questions I'd like to thank Leona D'Agnes, Junice Demeterio-Melgar, Sylvia Estrada-Claudio, and Geoffrey Dabelko. Thanks also to Eckhard Kleinau, Leona D'Agnes, Janet Edmond, and Melissa Thaxton for sharing draft documents and internal reports that otherwise would not have been available. Special thanks to Betsy Hartmann and Amy Oliver of the Population and Development Program at Hampshire College for their advice and guidance during the research and drafting process. This work was supported by the Population and Development Program and by the Program on Development, Peacebuilding and the Environment at the Political Economy Research Institute at the University of Massachusetts at Amherst.

RETHINKING THE LINK: A CRITICAL REVIEW OF POPULATION-ENVIRONMENT PROGRAMS

Executive Summary

Over the last ten to fifteen years a new type of integrated conservation project has evolved that links reproductive health and family planning (RH/FP) services with natural resource management and biodiversity conservation. Such programs represent a small but significant trend in both the conservation and the population fields.

Population-Environment (PE) linkages are being promoted by leading actors in the population field such as Population Action International, Population Reference Bureau, and the University of Michigan Population Fellows Programs. PE programs are sponsored and carried out by major conservation organizations including Worldwide Fund for Nature and Conservation International and/or by well-known international development agencies such as World Neighbors, CARE, and Save the Children. Funding has come in large part from US governmental funds through the US Agency for International Development (USAID) and from a small group of private foundations.

The evolution of integrated approaches for addressing population and environment issues dates back at least to the 1960s, with roots in the population, conservation, and international development sectors. The promotion of pre-planned PE projects, however, is newer. The presence of funders committed to this specific form of integrated conservation and development work has led to the creation of a “new generation” of community-based PE projects explicitly designed around theories of natural linkages and the anticipated benefits

from synergies between these two sectors. This paper evaluates the implications of making such PE linkages and looks at the implementation of PE projects where conservation of biodiversity is a specified goal and linked PE activities are a formal strategy from the start. While supporting the goals of extending access to reproductive health care and family planning, and of addressing human needs in conjunction with conservation efforts, the paper identifies and explores four broad areas of concern:

1. Malthusian narratives: To what extent are PE programs and projects based on problematic assumptions about linkages between population growth and environmental degradation and how do such narratives influence which environmental, health and development needs are addressed or ignored?
2. External agendas: Do the participatory methods of PE programs offer real opportunities for local concerns to be addressed or do they function more to get communities to “take ownership of” externally defined goals?
3. Women’s health and community health: Are the isolation and underserved nature of targeted communities taken into consideration such that the medical technologies offered don’t threaten the health and well-being of the women involved? Do program interventions address broad community health needs or are they limited to reproductive health of mothers and the care of young children?

4. Environmental justice: To what extent do projects linking human population and the environment tackle questions of human rights, differential access to natural resources and the impact of extra-local actors on local ecosystems?

Malthusian Narratives

The PE literature describes a variety of benefits for developing integrated population-environment projects. It is argued that integration facilitates entry into communities; allows projects to address a range of needs of hard-to-reach populations; increases involvement of men in reproductive health and of women in natural resource management activities; improves women's overall condition; and reduces costs. Environmental benefits from reduced population are treated almost as an afterthought.

Yet most organizations carrying out community-based PE programs do specify that one important objective of their programs is to reduce population pressure on the environment. Many of the same authors and organizations who emphasize the social and human benefits of PE programs on the ground promote a vision of population threats to the environment on a global scale, with particular emphasis on high and fast growing populations in biodiversity hotspots of the global south.

Unfortunately, generalized assumptions about population impacts on the natural environment simply don't hold in many cases and, as has been amply demonstrated in conservation literature, can blind project managers and policy makers to local realities. Simplistic assumptions about population impacts on the environment can lead policy makers, donors, and project managers into environmentally ineffective and sometimes moral-

ly ambiguous projects. The danger is that PE projects, based—at least in part—on Malthusian assumptions, will promote inappropriate interventions or be blind to opportunities that don't fit that narrative.

Madagascar provides a clear instance where PE programs seem to embrace and use Malthusian narratives to promote reproductive health and family planning as a response to environmental deterioration. It also provides a valuable illustration of the limitations and dangers of using such narratives. A review of the history of deforestation in Madagascar—in the context of factors such as colonial rule and later independence, changing tax regimes, agriculture and labor policies, land tenure laws, and changing demographics—makes clear that the links between population growth and environmental degradation are not nearly as strong as has been suggested. It also demonstrates that a focus on population fails to address key causes of deforestation.

Simplistic assumptions about population impacts on the environment can lead policy makers, donors, and project managers into environmentally ineffective and sometimes morally ambiguous projects.

Whose Agenda?

Advocates of linking family planning services to environmental and development projects make the argument that such linkages respond to community needs. It is not clear, however, that local community demand is the primary source of such linkages in the majority of current projects. There is a real risk that outside agendas will create demand for specific outcomes irrespective of community needs. This is true of any externally initiated project with conservation or family planning goals, but it is particularly complicated in the case of integrated projects.

The integration of health and development activities with conservation work was at one point

considered a way to provide for community needs and encourage community “buy-in” to conservation goals. Now, however, PE projects are being promoted and initiated according to a vision of a particular health-environment linkage. Instead of trading health services for participation in conservation efforts, a particular health intervention (RH/FP) is assumed to address community needs. Under such circumstances, with *a priori* assumptions about a particular intervention, it may be potentially difficult for project managers to direct project resources to community defined needs.

When NGOs arrive with predetermined agendas, the danger is that these will be imposed on local communities. As long as a Malthusian narrative is part of the program vision, such a narrative is likely to be communicated to, and potentially imposed upon, target communities. Information, education, and communication (IEC) campaigns and other educational activities linking reproductive health and environment are a staple of PE programs. A particular concern is the use of “social marketing” practices such as community goal setting and participatory monitoring of outcomes, which can potentially create pressures on individuals to participate in family planning and other program activities.

Women’s Health

The provision of health care by NGOs in remote rural areas can fill a gap where need is either partially or wholly unmet by government, but there are risks involved as well. First, such projects create dependency, yet are unable to guarantee ongoing services given the short-term nature of funding and NGO involvement. Additionally, when health care is linked to biodiversity conservation goals, there is a risk that health care can shift from being treated as a right to becoming a reward which can be withdrawn if conservation goals are not met.

Another concern regarding PE projects in remote rural areas is that the implementing organizations’ population agenda, combined with limited resources, may lead to services being offered based on what’s doable and effective rather than on what’s most appropriate for women’s health. Evidence from some projects suggests that the drive to get *some* family planning services to remote areas has indeed led to choices regarding birth control technologies based on logistical and budgetary factors rather than on the needs, desires, and medical situation of the women and men involved. Additionally, many PE projects promote the use of Depo-Provera and other long-acting contraceptives in spite of the documented health risks involved. Given the difficulty for women in remote rural areas to obtain proper screening and follow-up care, projects that promote the use of Depo-Provera may jeopardize women’s health in exchange for increased contraceptive prevalence rates.

Although “healthy communities” and “healthy families” are part of the titles and language of many PE projects, their contributions to health care frequently are limited to narrow family planning services. This initial review of the PE literature suggests that many of the integrated PE programs, commonly cited as successful examples of linking health and conservation needs, do not seem to address the breadth of health needs typically faced by poor, rural communities. Some projects don’t even fully cover the basics of prenatal and delivery care, family planning services, and health care for young children. Even when project objectives include improved maternal and child health, or improved nutrition, there may be little substance in project activities to address these objectives.

Questions of Environmental Justice

If one looks at the links between humans and environment, as PE programs claim to do, a central consideration has to be human rights, including political and legal rights, rights to land and

natural resources, economic rights, and cultural rights, all of which are linked. Yet PE programs generally seem to omit consideration of such issues in their analysis, and thus also in their choice of interventions.

Although many PE projects promote economic development activities, these often seem to be more of an add-on rather than a central piece of the projects, and there still seems to be significant ambivalence about addressing the economic needs of populations living near biodiversity hotspots. Also, the literature about population and environmental linkages, both globally and in specific PE projects on the ground, tends to ignore or quickly pass over the impacts of external forces on local environments, whether it be northern consumption and the role of multinational corporations, or the monopolization and extraction of natural resources by national elites. In general, it is difficult to find evidence that the impacts of social inequalities on environmental degradation are being considered or addressed.

The Philippines provide an interesting opportunity to compare assumptions, analyses, activities, and outcomes of integrated PE projects with other integrated approaches to complex human-environment problems. A comparison of two PE projects working with fishing communities on issues of coastal management with a third coastal resource management project utilizing a community organizing and rights-based approach highlights the range of interlocking issues influencing both environmental and human health that can be identified if programs look beyond the population dynamics of poor communities. An analysis of such issues points to the role that wealth, class, and political power play in how natural resources are used and

managed, preserved or damaged, and provides local communities with tools for protecting their rights and the environment.

Conclusions

PE projects, with their intertwined roots in development work, conservation, and population programs, seem to have inherited both some of the best and some of the worst aspects of these different ancestries. PE programs promote the idea that strengthening and empowering local communities are key to both improving lives and meeting conservation goals, yet this urge to take a pro-human approach is undermined by the Malthusian narratives that underpin PE projects. Similarly, the participatory, community-based approaches claimed as an important element of PE projects are frequently weakened by *a priori* assumptions about human impacts on the environment and by their use to promote predefined project goals. In sum, while integrated approaches to conservation offer real opportunities to treat local people as partners and meet human needs and conservation goals simultaneously, the specific and narrow focus on links between population and environment undercuts many of the benefits of the integrated approach and creates its own problems.

There seems to be little reason for integrated projects to be focused so narrowly on specific linkages between population and environment. The same synergies cited as the benefits of PE projects—ranging from savings obtained by sharing costs and resources between sectors, to advantages provided by drawing connections between the condition of human communities and their environment—can be obtained in broader or more open-ended integrated projects. Just as environmental factors influence and are influenced by

PE programs promote the idea that strengthening and empowering local communities are key to both improving lives and meeting conservation goals, yet this urge to take a pro-human approach is undermined by the Malthusian narratives that underpin PE projects.

human health and population, so too do they interact with people's economic condition, their political status, and more. Conservation NGOs willing to approach integrated projects in a more truly participatory way, without an *a priori* population agenda, are likely to discover a variety of potential new entry points to engage local people on issues of conservation, free of the distortions of Malthusian narratives around population and environment.

Recommendations

- Organizations promoting the funding and provision of RH/FP services in the global south should refrain from using environmental and population arguments to promote their goals. The distortions of Malthusian arguments cannot be justified simply because they are effective in winning partners or funding; they need to be replaced with rights-based arguments in favor of making RH/FP available to all women.
- One of the strengths of early PE linkages was that they developed in response to requests from women in the communities being served. Community initiative and local needs should remain central to project planning, and PE program implementation should depend on genuine demand elicited through a participatory process that offers alternative possibilities as well.
- PE programs can avoid some of the risks described in this paper if evaluations consider the following questions: (a) Are opportunities for local participation real and effective throughout all stages of the project? (b) Are RH/FP approaches safe and comprehensive and is there adequate health care available to provide screening and follow-up as well as other basic health services? (c) Are the full range of causes of environmental degradation recognized and does the project support the economic and political empowerment that poor communities need to be able to protect their environment?
- Poor rural populations need to be heard, and their needs addressed, as a matter of right, and not just when and if their needs correspond with conservation goals. As powerful actors in remote rural areas, conservation organizations need to acknowledge this right at the highest level and make partnering with the local residents in the regions where they work a core part of their mission.
- Funders interested in supporting integrated projects need to have a broad enough vision to allow NGOs to respond to locally defined needs rather than simply implement pre-defined objectives. Funders should be willing to have project success based at least in part on criteria provided by beneficiary communities. In particular, programs need to avoid narrow interpretations of success based on family planning measures like contraceptive prevalence or couple-years of protection, and instead focus on broad health and human welfare objectives.
- Funders and implementers need to provide integrated projects with timeframes that are sufficiently long to allow for a genuine participatory process and for meaningful outcomes both for human well-being and conservation goals.

RETHINKING THE LINK: A CRITICAL REVIEW OF POPULATION-ENVIRONMENT PROGRAMS

by James Oldham

Over the last ten to fifteen years a new type of integrated conservation project has evolved that links reproductive health and family planning (RH/FP) services with natural resource management and biodiversity conservation. Known variously as Population and Environment (PE) projects, Community Based Population and Environment (CBPE) projects, or Population, Health and Environment (PHE) projects, they all combine activities addressing human health with others addressing the natural environment in rural, often remote, areas of the global south.

Such programs represent a small but significant trend in both the conservation and the population fields. PE linkages are promoted by leading actors in the population field such as Population Action International (PAI), Population Reference Bureau (PRB), and the University of Michigan Population Fellows Programs. PE projects are being sponsored and carried out by major conservation organizations including Worldwide Fund for Nature (WWF) and Conservation International (CI) and by well-known international development agencies such as World Neighbors, CARE, and Save the Children.

PE projects are presented as beneficial to poor human communities and to the environment, a classic win-win. For conservation organizations, they represent a new attempt to address human needs as well as conservation goals and to avoid the “fences and fines” approach that has provoked

criticism around the world for the ways in which it forcibly excludes local people from the natural resources on which their livelihoods depend. For organizations promoting reproductive health, PE projects offer an opportunity to enlist new allies (environmentalists and conservation organizations) in their efforts to extend access to reproductive health and family planning services.

PE projects are said to use participatory methods and are intended to address local community needs. They bring gender awareness to conservation programs that historically ignore or overlook the particular roles and needs of women. Most significantly, they address a human condition—fertility and population growth—that is seen by many as clearly connected to both human and environmental well-being.

The purpose of this paper is to explore the history, philosophy, and practice of projects that link population and environment in the field, and the evolving network of organizations and specialists who have created, defined, and promoted the PE concept. It asks questions and raises concerns regarding the following subjects:

- Malthusian narratives: To what extent are PE programs and projects based on problematic assumptions about linkages between population growth and environmental degradation? How are these narratives used to influence the thinking of donors, policy makers, and the public at large both here in the US and in targeted countries? How and to what extent do such narratives influence which environmen-

tal, health and development needs are addressed or ignored?

- Participatory approaches vs. external agendas: How are the types of activities and interventions of these projects determined? How is the philosophy of participatory, community-based approaches balanced with the existence of a preconceived two-part agenda of linked population reduction and conservation goals? Do participatory methods offer real opportunities for local concerns to be addressed or do they function more to get communities to “take ownership of” externally defined goals?
- Women’s and community health: Are the isolation and underserved nature of the targeted communities taken into consideration in choosing health interventions, particularly family planning methods, such that the medical technologies offered don’t threaten the health and well-being of the women involved? Also, are broad community health needs being addressed in a comprehensive way or are interventions limited to reproductive health of mothers and health of young children?
- Environmental justice: As these projects address linkages between human populations and environment, do they tackle questions of human rights and differential access to natural resources? While looking at links between human populations and their environments, do they also consider how extra-local actors impact local ecosystems?

The goal of the paper is to ask questions and suggest areas in need of discussion and further evaluation, not to conclusively answer these questions. I have not visited projects nor had access, with a few exceptions, to project reports or managers. Instead, the primary sources for this study are the published literature about PE programs prepared by advocates and practitioners of this integrated approach.

History

The evolution of an integrated strategy for addressing population and environment issues dates back at least to the 1960s and has divergent roots in the population, conservation, and international development sectors. The history of this evolution has been described in detail by Engelman (1998b), who both identifies the key actors and first projects, and traces the various theoretical roots of the practice, with particular emphasis on what brings population organizations to PE. Other authors have also described important elements of the PE evolution including World Neighbors’ (WN) arrival at the PE linkage from its work in community-based development (Caudill, 1998) and the evolution of PE projects in two major conservation organizations, WWF (Weissman and Freudenberger, 1998) and CI (Williams, 2001; Nations, 2003). The following is a brief overview of some key elements of this history.

The early examples of community-based projects linking elements of RH/FP services with environmental protection (defined broadly to include everything from biodiversity conservation to natural resource management in agriculture) seem to have evolved organically and independently out of experiences in two different sectors: international development efforts and family planning work. On the development side, beginning in the 1970s, World Neighbors, a broadly focused international development NGO that already included family planning as part of its integrated health services, began to link family planning and health care with agriculture and resource management based on observations in the field of the close relationships between the issues these services address (Caudill, 1998). From the late 1980s, CARE, a larger development organization that had not previously been involved in family planning, began to offer RH/FP, often linked with other health and development services including agriculture and natural resource conservation. This shift came in response

to requests from women in the places where they worked and to perceptions within the organization that population growth was putting poverty reduction at risk (Engelman, 1998b:24-25).

In parallel with these experiences of US based development organizations, similar programs were beginning, in the 1970s, in some parts of Asia including Bangladesh, India, and Indonesia, sponsored by family planning associations. In a reversal of the CARE experience, these projects began with a focus on family planning and extended into water, sanitation, and tree planting in response to community interests (Engelman, 1998b:20).

Conservation and environmental organizations' interest in issues of population date back at least to the late 1970s and early 1980s when National Audubon Society launched its population program (focused on education and lobbying) and the World Conservation Union — IUCN began to focus on issues of population (Engelman, 1998b:23). At the advocacy and policy end, the debates around the major environment and development conferences of the early 1990s—the 1992 United Nations Conference on the Environment and Development (the “Earth Summit”) and the 1994 International Conference on Population and Development held in Cairo—brought population and environment organizations together in the development of the concept of PE linkages. In fact, population organizations targeted environmental organizations with considerable funding and lobbying to encourage them to focus more on population issues (Gibbs, 1998). One of the goals of this collaboration was to influence the Cairo Plan of Action (Hartmann, 1995:148-151); their effectiveness can be seen in that the plan, often referred to as the “Cairo consensus,” is routinely cited as justification for linking population and environmental work. (See, for example, Engelman, 1998a; Caudill, 1998; Kleinau and Talbot, 2003; and Nations, 2003.)

At the project level too, population advocacy organizations have been the leaders in identi-

fying and defining the concept of integrated field-based PE projects. PAI developed the concept of CBPE in 1998, and identified close to 50 CBPE projects around the world based on the following definition:

The linkage, within a community or a group of communities, of services that combine aspects of natural resource conservation or similar environmental work with the provision of reproductive health services, always including but not limited to family planning. (Engelman, 1998b)

Since then, PAI has been a leader in advocating for the creation and funding of PE projects, a sponsor of meetings and workshops for those active in PE projects to share knowledge and experiences, and a source of information on individual CBPE projects through its database of projects which provides an updated and revised accounting of that original 1998 list (PAI, 2005b).

University of Michigan's Population-Environment Fellows Program, one of five US Agency for International Development (USAID) funded Population Fellows Programs administered by the University's School of Public Health (Zinn and MacKie-Mason, 1999), has contributed significantly to developing PE linkages through the placement of early- and mid-career professionals with NGOs and government agencies “working to link family planning and environmental programming in the developing world.” Since 1993, approximately 50 fellows have been placed in two-year positions dedicated to “greater balance between people and the environments that sustain them” (University of Michigan Population Fellows Program, 2005).

On the conservation side, WWF initiated its population program in the early 1990s (Weissman and Freudenberger, 1998) and CI followed later in the same decade (Williams, 2001). These initiatives grew, in part, out of the experience with Integrated Conservation and Development Projects (ICDPs) begun a decade earlier

(Weissman and Freudenberger, 1998; Mogelgaard, 2003) and have been informed by perceived failures of ICDPs to effectively meet conservation goals (Mogelgaard, 2003; Kleinau and Talbot, 2003; DeSouza et al., 2003). They represent an effort to continue “people-oriented” approaches to conservation while responding to some of the critiques that have been directed at ICDPs (Mogelgaard, 2003). For example, PE projects are typically much smaller than ICDPs and involve partnerships between sectors rather than a single, multi-faceted project (Kleinau and Talbot, 2003; DeSouza et al., 2003); also international conservation NGOs are taking the role of facilitators rather than project implementers (Mogelgaard, 2003:17).

“Packaging integrated projects by emphasizing their population components appeared to open up a new fundraising frontier” (Gibbs, 1998). A small number of foundations made support for developing PE linkages a priority during the 1990s and beginning of this decade. Although much of this money has gone to public education, advocacy and research, community-based integrated projects receive both a growing portion of foundation support for PE (approximately one-third of the total in 2001 compared to 8% in 1993-1996) and significantly more in absolute terms: \$4.5 million in 2001 (Gibbs, 2003) compared to an average of a little more than \$500,000 per year between 1993 and 1996 (Gibbs, 1998).

However, after the high funding levels for PE linkages in 2000 and 2001, some foundations have left the field and others are cutting back funding due to declining endowments (Gibbs, 2003). Under these circumstances, USAID has become an increasingly important funder and promoter of linked PE projects. Although USAID support for PE initiatives began earlier, since 2001 its role has been encouraged by lan-

PE projects are viewed as an ideal approach to reach isolated and underserved populations living in rural areas in and near the locations where conservation organizations work.

guage in the US Foreign Operations Bills that calls for some of the funds budgeted for RH/FP to be allocated to “areas where population growth threatens biodiversity or endangered species” (Gibbs, 2003; PAI, 2005a).

PE projects are viewed as an ideal approach to reach isolated and underserved populations living in rural areas in and near the locations where conservation organizations work. Integrated projects have been presented as a more people-friendly approach to conservation—an alternative to “fences and fines’ conservation tactics” (Zinn and MacKie-

Mason, 1999) or to the top down “protection paradigm” promoted by critics of integrated conservation and development projects (Mogelgaard, 2003). Advantages claimed for integrated PE projects include: greater impacts than obtained from separate, sector specific projects; breakdown of gender barriers in target communities; increased community buy-in and self-sufficiency; increased sustainability; and greater success in meeting community needs (Gibbs, 2003).

The central hypothesis for integrating family-planning and natural resource-conservation activities into community-based projects is that the synergies produced from integration will make these interventions more effective and sustainable than if they had been pursued in a vertical, sector-specific fashion. (Kleinau and Talbot, 2003:10)

These synergies are seen to work both because “environmental factors and health consequences overlap directly” and because the linking of population and environment work “provide[s] economies of scale and scope” (Kleinau and Talbot, 2003:10).

The coming together of these distinct histories, the development of a vision for CBPE based on a theory of natural synergies, and the presence

of funders dedicated to this vision have led to the creation of a “new generation” of PE projects around the world (Kleinau and Talbot, 2003; DeSouza et al., 2003:32). Unlike some of the earlier projects that came to their PE focus organically, these integrated projects are explicitly designed around the anticipated PE synergies; they are thus more clearly committed to both conservation and family planning goals. This paper evaluates the implications of making such PE linkages and looks at the implementation of PE projects where conservation of biodiversity is a specified goal and linked PE activities are a formal strategy from the start.

Malthusian Narratives

Some may find focusing on population growth in the developing world exploitative, xenophobic, or hypocritical, given the impact of Northern consumption on resources. Yet pretending demography is disconnected from environment and security misrepresents reality and excises an effective avenue for understanding environment, conflict, and cooperation. (Dabelko, 2004:5)

The debate about the impacts of population growth on the environment, which goes back at least two centuries to the writings of Thomas Robert Malthus, shows few signs of resolution. The existence of some linkage, however, seems clear. (Engelman, 1998a:5)

The first question faced by those who promote programs and policies linking population and conservation goals must be one of motivation. Those in the PE field are very sensitive to suggestions that RH/FP services are being offered for any purpose other than the health and well-being of the individuals involved. Yet, as the two quotes above indicate, they are also dependent on Malthusian narratives.

In much of the PE literature, emphasis is placed on a variety of benefits for developing linked PE projects. It is argued that such integration facilitates entry into communities; allows projects to address a range of needs of hard-to-reach populations; increases involvement of men in reproductive health and of women in natural resource management activities; improves women’s overall condition; and reduces costs. Environmental benefits from reduced population are treated as almost an afterthought: “And they show promise over the long term of slowing the increase of and possibly even reducing population related pressures on locally available natural resources” (Vogel and Engelman, 1999:6).

The appearance and use of Malthusian narratives in the PE field seem to vary depending on the audience and the situation. The reticence described above is balanced by a need to persuade funders, partners, and policy makers of the value of incorporating RH/FP initiatives into conservation programs. (As noted above, the push for integration seems to be driven primarily from the population side.) Sometimes this is dealt with by a kind of division of labor. As Gibbs points out:

In general, the environmental groups that have been the most creative and effective in mounting community based integrated projects in the field have been the most reluctant to jump into the policy fray and the most cautious in speaking out publicly on population and environment issues. (Gibbs 1998:60)

An interesting question is to what extent this caution grows out of a concern about “the danger of oversimplifying complex problems and equally complex solutions” (Gibbs, 1998), and to what extent it is simply tactical wisdom. What is clear is that, while frequently insisting that “the slowing of population growth...is at most a welcome side benefit” (Engelman, 1998a), many PE advocates are committed to the idea of voluntary RH/FP as a conservation tool:

For an environmental program, reproductive health services do not merely serve to ease entry into a community. Many groups now recognize that high fertility and growing populations place added stress on the environments and natural resources that they are trying to protect. (Vogel and Engelman, 1999:35)

Many of the same authors and organizations who emphasize the social and human benefits of CBPE

programs on the ground promote the vision of a population threat to the environment on a global scale, with particular emphasis on high and fast growing populations in the rural areas of the global south that have been designated biodiversity hotspots by conservationists. Cincotta and Engelman’s (2000:7-8) calculations that: “More than 1.1 billion people now live within the 25 *global diversity hotspots*,”¹ and, “[a]round 75 million people, or 1.3 percent of the world’s population, live within the three major tropical wilderness areas,” are cited frequently (Nations, 2003; DeSouza et al., 2003:22), even though the numbers in and of themselves mean little. It is also reported that “[p]opulation density in the hotspots is, on average, almost twice that of the world as a whole” (Cincotta and Engelman, 2000:57) and, similarly, “the average population density in coastal areas is about 80 persons per square kilometer, twice the world’s average population density” (Creel, 2003), as evidence of the great stress being put on such fragile ecosystems.

The idea that the “world’s average population density” is a meaningful benchmark is dubious, as it flattens vastly different population-environment relations, ranging from desert dwellers to dense urban populations, into a single number. References to the *average* population of biodiversity hotspots or coastal areas are equally suspect due to the variability between such places. Population density in the 25 originally designated biodiversity hotspots ranges from 3 to 341 persons/km², with 13 of the hotspots showing densities notably higher than the world average (a difference of more than 10/km²), and eight notably lower (Cincotta and Engelman, 2000).

Elsewhere, the use of statistics to highlight the negative effects of population on environment

The idea that the “world’s average population density” is a meaningful benchmark is dubious, as it flattens vastly different population-environment relations, ranging from desert dwellers to dense urban populations, into a single number.

requires questionable logic, as seen in this response to reforestation in China and India:

Efforts to increase forest cover fail to keep pace with population growth in many countries. Per capita forest cover has declined in India and China even though their forests have expanded. This finding indicates the scope of the challenge population growth poses to all forest conservation initiatives. (Gardner-Outlaw and Engelman, 1999:10)

The question to ask is whether per capita forest cover is a valid indicator of environmental health, as opposed to the percentage of land area that is forested, or the relative ability of the forests to support native animal populations, protect soils, and so on. Most of the environmental services provided by forests—increased rainfall, prevention of erosion and flooding, slowing of climate change—provide the same benefit for a given area irrespective of the number of people living there. It seems that it could be equally well argued that the simultaneous increase of populations and forest cover in India and China are evidence of the ability of large and growing populations to support environmental rehabilitation.²

In sum, the threat to biodiversity from population growth, which is used as an argument to promote the creation of linked PE programs in remote rural areas of Africa, Latin America, and Asia, is presented, often with quite dire language, on the basis of broad generalizations and frequently fuzzy logic. One can easily offer alternative statistics that suggest some very different conclusions. For example, take Madagascar, a country discussed in more detail below. This island nation, which has become something of a poster child for links between population growth and environmental degradation, has a population density only slightly higher than Germany would have—if all the Germans left! There are approximately 20 resident foreigners/km in Germany (Swiss Federal Statistics Office, 2005), while Madagascar's population density is 26/km² (Cincotta and

Engelman, 2000:60). (With all citizens and residents present, Germany has a population density almost nine times that of Madagascar.) It would be simplistic to say that this means Madagascar has no population problem, but no more simplistic than it is to say that population levels higher than the global average in biodiversity hotspots and coastal areas represent—by definition—an environmental threat.

Perhaps even more significant than Malthusian narratives in the broadly focused literature on PE linkages is the fact that most organizations carrying out linked PE programs on the ground specify that one important objective of their programs is to reduce population pressure on the environment. CI's PE program combines inclusion of reproductive health components in its conservation projects with "educating ourselves and our colleagues about the impact of human population growth on the natural ecosystems" (Nations, 2003:15). CI's website describes a global vision of population degrading the environment in areas of ecological concern:

The regions of the planet undergoing the most severe environmental degradation are the same as those experiencing the most rapid human population growth. Ninety eight percent of the increase in population is taking place in developing countries...where Conservation International (CI) focuses its work to protect biodiversity. (CI, 2005d)

This vision then becomes localized, as in a project report to the David and Lucille Packard Foundation:

Since 2001, Conservation International (CI) has been working in the Selva Lacandona of Mexico—one of the richest biodiversity hotspots in the world—to reduce human population pressure on natural resources. (CI 2005a)

WWF also sees environmental reasons for addressing reproductive health. An information sheet on the program states that:

The goal of WWF's Population, Health, Gender and Environment Program is to alleviate the threat and impact of population pressures and HIV/AIDS on biodiversity in priority ecoregions. (WWF_US, no date)

While noting that one outcome of work in ICDPs were requests from women for a variety of services and training including health care, Weissman and Freudenberger state that

WWF is also working on reproductive health issues because field experience is showing that in some areas of high population density, fragile ecosystems, or where traditional resource management practices have declined, population growth (fertility and migration) is linked to natural resource degradation. (Weissman and Freudenberger, 1998:27)

The Environmental Health Project, coordinator of the Voahary Salama Integrated Programs Initiative in Madagascar, states that:

The usually high fertility in many poor countries and the rapid population growth in communities close to endangered ecosystems threaten natural resources and biodiversity. The scarcity of land and forest resources encourages households to migrate and cultivate land needed to protect animal and plant species. Reducing population pressure is one goal of family planning, but smaller and healthier families are also essential to support household livelihood and economic well-being. (EHP, 2002:11-12)

It is important to acknowledge here that many of those working in PE projects feel uncomfortable, for both philosophical and practical reasons, with linking population reduction to conservation out-

comes. Many prefer to de-emphasize these links, both because such links are difficult to measure and because they wish to avoid making the local people feel their fertility is being controlled (Whyner, 2001). Still, as the following sections indicate, the grounding of PE programs at least in

part on Malthusian narratives, and the promotion of voluntary family planning for conservation reasons, raise important concerns.

First, generalized assumptions about population impacts on the natural environment don't hold in many cases, and can blind project managers and policy makers to local realities. There is a significant body of research that demonstrates that

human populations frequently have enriched biodiversity and ecological complexity through their interactions with the environment. Guha (1997), for example, has pointed out that banning local people from a bird sanctuary in Bharatpur, India led to the decline in populations of key species. At times, the presence of more people in a region may improve forest conservation. Tiffen et al. (1993) and Sayer (1995) have documented how increasing population densities in, respectively, parts of Kenya and the island of Java led directly to environmental remediation and increased biological diversity driven by people's greater ability to invest labor and other resources in land, water, and forest management. Sayer (1995) points out that similar trends have been found in countries as diverse as Nepal, Guinea, and China. Although such outcomes depend on a variety of variables, these examples highlight the unreliability of overly simplistic linkages between population and environment.

The danger of simple assumptions about population impacts on the environment is that they can lead policy makers, donors, and project managers into environmentally ineffective and some-

There is a significant body of research that demonstrates that human populations frequently have enriched biodiversity and ecological complexity through their interactions with the environment.

times morally ambiguous projects (Guha, 1997). In their account of conservation management in Uganda's Queen Elizabeth National Park, Risby et al. (2002) describe how Malthusian narratives about population and environment led to local fishing villages being unfairly blamed for deforestation and other degradation of the park. The historical and scientific record clearly demonstrated that local population growth was less than imagined, reforestation rather than deforestation was actually taking place, and the major trends in changing vegetation were driven by changes in elephant populations (decimated in the 1970s and 80s through hunting by the Ugandan and Tanzanian armies, government officials and park rangers), not by firewood collection by local villagers. In spite of all this evidence, the perception of a growing local population over-harvesting fish and forest resources led to increased controls on human activities in the park and the exclusion of local people from participation in the creation of a park management plan.

Although the Uganda example involves protected area management, not a PE project, it is important because it illustrates the power of preconceived narratives to blind policy makers, international NGOs and donor agencies to local realities. Since PE projects are, at least in part, based on Malthusian assumptions about population, there is a danger that they will promote inappropriate interventions or be blind to opportunities that don't fit that narrative. The story is also valuable because it illustrates that preconceived notions can bias even supposedly participatory processes. The authors point out that, in the planning process for managing the park, participation took place "only in a consultative sense, following...preconceived narratives on the human threats" (Risby et al., 2002:48). Finally, the relevance to the PE field is also enhanced by the fact that the two key international actors in the Uganda example, USAID and CARE, both of which contributed to misplaced linking of population growth with deforestation and to a creation

of a management plan that excluded local populations, are also key players in the field of PE.³

Population and Environment in Madagascar

Madagascar provides a clear instance where PE programs seem to embrace and use Malthusian narratives to explain environmental deterioration and threats to biodiversity and then promote RH/FP as a solution. It also provides a valuable illustration of the limitations and dangers of using such narratives while ignoring the complex history of deforestation, agriculture, and land tenure in pre-colonial, colonial, and independent Madagascar.

The island—sometimes called "the seventh continent" due to both its size and its distinctness from continental Africa from which it is separated by the Mozambique Channel—is considered of great importance by conservationists for its biodiversity, unusual ecosystems, and large numbers of endemic animals and plants. WWF lists six distinct Madagascar ecoregions (four terrestrial, one freshwater, and one marine) among its Global 200 Ecoregions—a list of 238 places seen as conservation priorities due to high biodiversity, species richness or endemism and/or unusual ecological phenomena (WWF and National Geographic, 2005). Madagascar is also listed by CI as one of the world's biodiversity hotspots (CI, 2005c), and has been described by that organization's president, Robert Mittermeier, as "the ultimate biodiversity hotspot" (Mittermeier, 2005).

Madagascar is the site of a number of PE programs due to the perception of close links between population growth, agricultural practices and deforestation. Beginning in the mid 1990s, USAID's APPROPOP—a project dedicated to increasing family planning use in Madagascar—began providing grants to conservation organizations to test the use of integrated conservation and development projects to deliver RH/FP to remote

rural communities (Whyner, 2001). Both WWF and CI were partners in this early initiative and both NGOs continue their PE work in Madagascar. More recently USAID has funded the work of Voahary Salama, an umbrella association of donors, local and international NGOs, and government agencies providing integrated PHE programs in three environmental corridors (Kleinau et al., 2005:16-18).

The story that is told regarding population and environment in Madagascar is a simple one. Cincotta and Engelman link the tripling of Madagascar's population from 4.2 million to 15.4 million in the second half of the 20th century to the current environmental situation where "Madagascar's remaining woodlots cover less than 20 percent of that which Malay mariners encountered some 15 centuries ago" (2000:66). They describe a rapidly multiplying population of poor farmers who are turning to upland forests to seek new farmland. The result is the burning and loss of Madagascar's tropical forests and a grave threat to the biodiversity the forests support.

This same vision of a population threatening the environment appears throughout the literature of international NGOs working in the country. WWF describes "an explosive population growth rate that is one of the highest in Africa... The 2001 population of 16.4 million is expected to reach 47 million by 2050, driven by high fertility rates... and a lack of reproductive health facilities and services" (WWF Conservation Strategies Unit, 2002:6). The other element in the story, along with population, is the use of destructive agricultural practices that both destroys biodiversity and impoverishes the land and the local people:

The link between poor land use practices and the environment and health is obvious. In Madagascar, deleterious agriculture practices, such as slash and burn, lead to deforestation and environmental problems such as soil erosion... When safe water sources such as springs are depleted because

of erosion, households turn to less safe alternatives such as streams or unprotected shallow wells. (Kleinau et al., 2005:25-26)

PAI's 9 minute DVD Finding the Balance, describing the work of Voahary Salama, tells the same story in a particularly stark manner, juxtaposing images to drive the message home. The video opens with scenes of Madagascar's eastern rainforest and a narrator's description of its "biological treasures." It then cuts to scenes of forests burning and we learn that "as the population of the forest doubled every few decades, villagers were clearing the forests to grow rice," providing food in the short-term but eventually turning cropland into wasteland. The result: almost 90% of the rainforest destroyed by the end of the 20th century.

If there is any doubt about the correlation between too many babies and the loss of the rainforest, the next scenes put it to rest. We are introduced to a Voahary Salama doctor who is "trying to save the forest and help the people living in it" with an "unlikely set of tools: health supplies, birth control pills, and condoms." This is followed by a series of cuts between shots of women holding and nursing babies and surrounded by children, and scenes of forests burning. The narration, coupled with interviews with women about birth control and men about agriculture, describes how ignorance—about birth control and about good farming practices—led to the destruction of the forests but, with birth control pills and lessons in better agricultural techniques, Voahary Salama is helping to educate the villagers and change the pattern of destruction (PAI, 2004).

Although both population growth and the agricultural practices of poor farmers are factors in the deforestation of Madagascar, the narratives described above have a number of flaws that cause them to misrepresent the current situation. As noted earlier, it is not entirely clear that Madagascar currently suffers from particularly high population densities. Some in Madagascar have

even suggested that current population densities are so low as to make it difficult to adequately manage forests and grass lands and prevent fires (Simsik, 2003:210). Given that one of the benefits of tavy (the so-called “slash and burn” agriculture practiced by rural Malagasy and seen by conservationists as environmentally destructive) is its efficiency in terms of human labor (Simsik, 2003:108), it is not inconceivable that an increased population might be more effective at implementing alternative agricultural techniques.

Whatever one’s conclusion regarding current population levels in Madagascar, there are other important problems with the PE narrative. First there is the ahistorical presentation of facts about population and deforestation, which encourages the exaggeration of the links between these two variables. Second, omission of key facts and the failure to look at all the drivers of deforestation contribute to a tendency to blame the growing numbers, and the agricultural practices, of poor rural subsistence farmers for forest loss. Finally, the failure to explore the socio-economic and cultural reasons behind tavy leads to a presentation of Malagasy farmers as ignorant and/or destructive.

Cincotta & Engelman’s (2000:65-67) brief profile of the country makes mention of only three events in the geological and human history of the island that have contributed to current conditions on the island: First they mention “Two major events that shaped Madagascar’s biodiversity...separation from Africa around 180 million years ago, setting off a burst of isolated evolution among plant and animal life...[and] the arrival of Homo sapiens less than 2000 years ago” which caused the disappearance of “much of what evolution had fashioned” (Cincotta & Engelman 2000:65). Then, as discussed above, they describe the rapid population growth in the latter half of the 20th

century. Events not mentioned include the arrival of Europeans, the colonization of the island and its later independence. Also omitted are changes in the local economy, land tenure, international trade, and government policies.

Of four primary factors that have been identified as causes of deforestation—“people, poverty, plunder, and policy” (Brown and Pearce, 1994, cited in Nash, 2001)—the final two are ignored while the others are inadequately explored.

A historical perspective on deforestation in Madagascar shows that the links between population and deforestation are more complex than has been suggested. As Jarosz explains, there is no direct correlation between population growth and deforestation in Madagascar, nor is focusing on shifting cultivation by poor farmers likely to solve the problems of environmental degradation:

Contemporary discourses about deforestation largely mirror colonial rhetoric concerning the sedentarization of peasant populations through the introduction of plow agriculture and the state-led regulation or abolition of shifting cultivation. These measures did not solve the problem in the first half of this century, and will probably not do so now. My argument is not that population growth is unimportant, but rather that as a causal power it was of negligible importance during a 40-year period in which approximately four million hectares of forest were felled. (Jarosz, 1993:376)

Although there are a range of causes of deforestation, the narratives about PE linkages applied to Madagascar have limited themselves to the exploration of population growth and of subsistence farming; of four primary factors that have been identified as causes of deforestation—“people, poverty, plunder, and policy” (Brown and Pearce, 1994, cited in Nash, 2001)—the final two are ignored while the others are inadequately explored.

Deforestation in Madagascar has neither followed some steady and inexorable process since

“the arrival of *Homo sapiens*” nor is it a sudden and new problem triggered by a population explosion. Rather, the major period of deforestation seems to coincide directly with the modern history of the island, beginning with colonization at the end of the 19th century. Forest loss in the first half of 20th century was equal to or higher than that during the latter half of the century yet it took place when population density was low (6 persons/km² overall, 12/km² in the central plateau and eastern forests) and population growth limited by malnutrition and famine, disease, and labor conscription (Jarosz, 1993). Key factors in this loss of forest can be directly related to government policies and economic and political power shifts under colonial rule. Causes of deforestation include the following:

- Cultivation of coffee and other export crops such as Ylang Ylang flowers, cloves, vanilla, pepper, and sugar cane caused primary forest loss both directly, through land clearing for these activities, and indirectly, by displacing subsistence rice farming from traditional valley croplands to the highlands where shifting cultivation provided the only effective way to obtain acceptable yields (Jarosz, 1993; Simsik, 2003:114).
- Colonial tax policies created a need for cash that subsistence farmers previously had not had. Many people from the dry south migrated to the eastern rainforests to obtain wage labor in order to pay newly imposed taxes. These families added to the demand for rice and thus the pressure on the forests in this region (Jarosz, 1993).
- The creation of private forest concessions by the colonial government in the 1920s led to “the pillage and destruction of some of the most beautiful and most accessible forests on the island as the search for precious woods such as ebony, rosewood, and palisander intensified” (Jarosz; 1993:374).

Current causes of forest loss are equally complex, and plunder and policy remain factors in deforestation that are at least as significant as population, just as they were in colonial times. Increasing numbers of permits for forest clearing and growing profits from timber sales are indicators of the role of extra-local actors—both business people and state bureaucrats—in the destruction of the forest (Simsik, 2003:272). Recent efforts at land tenure reform in Madagascar, in response to “lack of clarity on land rights [that] was the main obstacle to investment by farmers” (Cocks, 2005), highlight another explanation for destructive agriculture. Internationally imposed economic liberalization has also had a negative effect on the economic situation of rural farmers and thus made it more difficult for them to prioritize sustainable resource management (Simsik, 2003:279).

To conclude this section, it is important to observe that the “deleterious agricultural practices” (Kleinau et al., 2005:26) of tavy or “slash and burn” have roots in the culture and social relations of the Malagasy people (Jarosz, 1993) and in traditional concepts of land tenure (Simsik, 2003:92-96). Additionally, they are based on an economic logic that conserves human effort, an important resource in poor rural areas (Simsik, 2003:108). Opposition to tavy, which dates back to the colonial period, is equally complex. While forest conservation has always been the justification for banning the practice, the colonial government also saw shifting cultivation as an obstacle to tax collection while the elimination of tavy had the effect of making more Malagasy dependent on the purchase of rice and therefore available as wage laborers (Jarosz, 1993). Given this history, it is important to explore how current efforts to change farming practices, common to all the PE projects being carried out in Madagascar, might influence other issues of land tenure, social relations, political power, access to natural resources, and so on.

Whose Agenda?

Advocates of linking family planning services to environmental and development projects make the argument that such linkages respond to community needs. Engelman points out that many of the linked CBPE projects arose from community requests “for help in spacing pregnancies or limiting family size” (1998a:6). Caudill insists that “for World Neighbors the linkage of population and environmental issues has come about as a result of [a] people-centered, integrated approach to needs assessment and problem-solving, rather than as a response to global demographic or environmental conservation agendas...The initiative and priority come from the community, without an agenda imposed from outside” (1998:12).

It is not clear, however, that local community demand is the primary source of such linkages in the majority of current projects. Although the DVD about the work of Voahary Salama in Madagascar cites requests from village women in 2001 as the catalyst for the introduction of RH/FP (PAI, 2004), the plans for the integrated PHE program in Madagascar that became Voahary Salama were begun by USAID in 1999 (Kleinau et al., 2005:17).

Even the authors cited above admit to some “top down” pressures for bringing family planning services into conservation and development projects. Engelman acknowledges that “some agencies involved have placed these activities in the context of the challenges that continued local population growth can pose for environmental conservation and natural resource sustainability” (1998a:6). Caudill, while denying any demographic or conservation agendas writes, “Nonetheless, [World Neighbors] does recognize the magnitude of the global population and environmental challenges and is committed to contributing to solutions at all levels” (1998:12).

There is a real risk that outside agendas will create demand for specific outcomes irrespective

of community needs. This is true of any externally initiated project with conservation or family planning goals, but it is particularly complicated in the case of integrated projects.

A double agenda

The integration of health and development activities with conservation work was at one point considered a way to provide for community needs and encourage community “buy-in” to conservation goals:

Build[ing] from the premise that health can serve as a natural motivation to address issues related to biodiversity conservation, some conservation organizations have begun to explore strategic alliances with organizations that work in the health field.
(Margoluis et al. 2001:6)

Now, however, PE projects are being promoted and initiated according to a vision of a particular health-environment linkage. The collaboration of distinct players with their respective conservation and population agendas has formalized into the beginnings of a PE industry with its own specialists and norms. The need to satisfy funders who have a population agenda and the creation of express RH/FP goals at project conception raise the concern that PE projects may be less able to be open and responsive to community defined needs and diverse local situations.

Instead of trading health services for participation in conservation efforts (a strategy with its own dangers, as noted later in this paper), a particular health intervention (RH/FP) is assumed to address community needs. In such circumstances, with *a priori* assumptions about a particular intervention, it may be potentially difficult for project managers to direct project resources to community defined needs.

In addition, through the creation of conceptual linkages between population and environ-

ment, family planning goals become conservation goals. Given the difficulty of demonstrating direct environmental benefits of integrated projects, it becomes necessary to extrapolate from family planning outcomes and generalizations regarding population impacts on the environment. An example from CI's work in Mexico illustrates this process:

One potential estimate of our success might be that, given the increase in [Contraceptive Prevalence Rate] to 36.7 percent and using standards from the international public health field, this change corresponds to an estimated 158 unwanted births averted. Demographers have calculated that for each additional person in the Petén, four to seven hectares of forest is lost. Assuming the Selva Lacandona is sufficiently similar to the Petén, we estimate that 632-1106 hectares of forest will be saved by the change in the contraceptive prevalence rate as a result of the project. (CI 2004a:6)

Now that health services are being provided to meet conservation goals, what happens when health and other community needs do not contribute to, or are potentially in conflict with, conservation goals? Does the reported participatory approach of these PE projects really leave room to respond to unanticipated community needs, or will needs be ignored if they don't meet preconceived notions?

An extreme example of the external origin of family planning objectives is seen in a PE project carried out in Manicoré, Brazil by Management Sciences for Health. Rather than being offered in response to community demand, reproductive health classes were a *requirement* for women inter-

ested in participating in a handicraft project aimed at increasing their economic empowerment (Feldacker, 2004). Given the host of problems faced by the communities served by the project, including extreme poverty, high maternal mortality, and high levels of prostitution and drug use, among others (Feldacker, 2004), it is not surprising that family planning wasn't a top priority for local women.

Although the Manicoré example of required family planning education seems to be an exception, it is not uncommon for poor rural people and communities to consider RH/FP less of a priority than other needs. Frequently, population and family planning programs provide other services as an "entry point" to communities, to build trust and relations

before beginning RH/FP activities. In fact, even as conservation organizations have used health services as their entry point, reproductive health organizations have used agricultural assistance and other natural resource management projects as theirs (Vogel and Engelman, 1999). For example, World Neighbors' PE work in Ecuador, which combines community development through sustainable agriculture and natural resource management with public health and family planning, was started because their partner CEMOPLAF, an Ecuadorian family planning provider, was seeking ways to increase its rural clientele and bring people to an underutilized clinic (World Neighbors, 1999). If conservation projects frequently need a health or community development entry point, and reproductive health projects also need an alternative entry point, are integrated PE projects particularly well prepared for a variety of realities or are they burdened with two external agendas?

Even in projects where broader needs are being addressed, such as WWF's work in the

If conservation projects frequently need a health or community development entry point, and reproductive health projects also need an alternative entry point, are integrated PE projects particularly well prepared for a variety of realities or are they burdened with two external agendas?

Spiny Forest Ecoregion of Madagascar where literacy, adult education, and rural development programs are part of the suite of projects along with RH/FP, it is not clear that the vision of building a project around community expressions and prioritization of needs is being realized. The locations and types of interventions by the WWF program, for example, are determined through a complex mapping of demographic factors overlaying conservation priorities carried out by WWF professionals (WWF Conservation Strategies Unit, 2002) and not, apparently, through a participatory evaluation of community needs or in response to local requests for the services.

The nature of participation

When NGOs arrive with predetermined agendas, the danger is that these will be imposed on local communities. In spite of the contention that “there is no need for demographic education or messages in linking environmental and population work at the community level” (Engelman, 1998a), Information, Education, and Communication (IEC) campaigns and other educational activities linking reproductive health and environment are a staple of PE programs, including, for example, those run by CI in the Philippines, Madagascar, and Cambodia (CI, 2004b; CI 2005b), the IPOP-CORM in the Philippines (Castro et al., 2004), and the Voahary Salama Integrated Programs Initiative in Madagascar (EHP, 2002; Kleinau et al., 2005:35). Although there has been a movement in at least some projects away from emphasizing the linkages between population growth and biodiversity in preference for an emphasis on the health benefits of child spacing for “children, women, the family and the whole community” (Vogel and Engelman, 1999:35-36), it is unclear to what extent this is the dominant model in the field.

In any case, as long as a Malthusian narrative is part of the program vision, such a narrative is likely to be communicated to, and potentially imposed upon, target communities. The use of

“social marketing” practices seems to have great potential for creating pressures within the target community for individuals to participate in family planning and other program activities. One example is:

the Champion Community Voahary Salama competition, where participating communities work to improve a package of specific sectoral health, population, and environment indicators such as vaccination coverage, number of family-planning users, and the adoption of agricultural techniques. (Kleinau and Talbot, 2003:12)

“Participatory monitoring” is used to determine whether a community has reached champion status” (Kleinau et al., 2005:36). The Champion Community model, described as “community target setting, monitoring and celebration” (Kleinau et al., 2005:7), has been adopted by CI and other NGOs as well.

Communities assemble to select goals for vaccination rates, anti-tavy measures, reforestation, contraceptive prevalence rates, and other indicators of community health. After one year, the community assesses its progress towards these goals. (CI, 2004b:14)

This mix of externally supplied education and information with “community” goal setting for, and monitoring of, individual behaviors, raises important questions about the nature of participatory PE programs and even the concept of voluntary family planning. Neumann (2001) has argued that the incorporation of community oriented initiatives and the language of participation serves frequently as a new tool for advancing the external goals of international NGOs rather than truly empowering local peoples. Jeanrenaud (2002) has a more nuanced approach, suggesting that participatory approaches do offer real opportunities for local people’s concerns to be heard while acknowledging that international NGOs will remain committed to their conservation (and/or population) agendas. The question to ask

of PE projects is to what degree the community focus actually elicits community priorities and guides project development and to what degree community-based processes are used to encourage communities and individuals to accept or internalize externally defined narratives, agendas, and goals involving population and environment.

Women's Health

PE projects typically target isolated rural communities, partly because they are located in areas of high biodiversity but also because these populations have not been reached by more conventional RH/FP projects. Conservation organizations that already work in such areas can provide access to these communities and thus offer a needed service to otherwise unserved populations (Vogel and Engelman, 1999:22). However, the isolation and poverty of these communities, and the very lack of access to comprehensive health care that makes them a target in the first place, create challenges and risks that need to be considered. The following sections consider some of these challenges and raise questions about how PE projects might or might not be meeting them. PE projects are too diverse, and the information reviewed too sketchy, to make any claim to answering these questions comprehensively. Rather, a number of areas of concern or in need of further research are highlighted—and illustrated with information available in the published PE literature.

Health care with strings

The provision of health care by NGOs in regions where need is either partially or wholly unmet by government is somewhat complicated. On the one hand, the lack of services in remote areas is a reality and attempts by NGOs to address the need should be applauded. On the other hand, there are risks involved as well, especially if projects create dependency yet are unable to guarantee ongoing services (Margoluis et al., 2001:31).

Concerns about reliability and sustainability of services become more pronounced when health care is linked to the agenda, such as biodiversity conservation, of an NGO. This is illustrated in CI-Brazil's approach to providing health care to the A'Ukre Kayapo on the Upper Xingu River in Southern

Para, Brazil. Although this was an integrated health project and not a PE project (it involved no RH/FP services), it was part of CI's Healthy Communities Initiative, which served as something of a precursor to the organization's current PE projects. The project offers an example of how environmental NGOs use health care as a tool for obtaining community compliance in conservation.

CI founded and was working in an 8000-hectare biological reserve up-river from the Kayapo, a community of 250 people occupying a forest territory of some 300,000 hectares. As part of a process to win local acceptance and protect the reserve, CI provided medicines, primarily for malaria, and health education, in return for community agreement to avoid hunting or logging in the reserve. The provision of health care was directly linked to continued protection of the reserve—CI made it clear that logging, hunting or mining in the reserve would lead them to end health services (Margoluis et al., 2001:12, 34).

The logic of CI's position is clear—as a conservation organization, their purpose is to ensure the protection of the forest, and their involvement in health care is based on that primary mission. Yet the question remains: Is it fair to make health services contingent on other behaviors? Elsewhere, multinationals make similar deals, providing health services in return, for example, for acquiescence to oil extraction (Pers. obs., Andean tropics). While CI's biodiversity goals are laudable, the form and power dynamics of the relationship between the parties suggest an inherent distrust of local peoples. From the point of view of forest communities, the concern has to be that health care provided as a reward for participating in conservation efforts is impermanent and unreliable, and also potentially damaging to local autonomy.

Considering health risks

As noted at the start of this paper, PE programs are frequently implemented through partnerships between sectors. When conservation NGOs accept funding to implement a PE program, the RH/FP activities are often planned and carried out by local providers, either national health NGOs or government agencies. In such cases, the choice of family planning methods, and the breadth of services provided, follow norms and standards developed by these health partners. PE funding and the partnership with conservation NGOs allow these services to reach new constituencies in relatively isolated communities, but in these new circumstances they also pose new challenges.

One of the challenges for CBPE projects is the need to provide adequate medical back-up in case of complications related to the use of the

RH/FP services (Vogel and Engelman, 1999:40). Are the appropriate medical support services in place to ensure adequate care for women adopting new family planning methods and to address any complications that arise? Given the lack, already mentioned, of medical services in remote rural areas and the frequently limited transportation options available, this challenge can be quite significant.

In Madagascar, the health NGO, ASOS, which partners in PE projects with both WWF (Rieszenberger, 2001) and CI (CI, 2004b), makes the existence of some public health services in a community a prerequisite for inclusion in the project. Considered essential for project sustainability and an aid to program monitoring and evaluation (Rieszenberger, 2001), such a requirement may also serve to reduce risks related to family planning, depending on the level of health

**Yet the question remains:
Is it fair to make health
services contingent on
other behaviors?
Elsewhere, multinationals
make similar deals,
providing health services
in return, for example,
for acquiescence to oil
extraction.**

services available. It is not clear whether other PE programs have similar requirements for minimal health care before providing family planning services.

Health concerns are raised by an emphasis in some PE projects on long-acting contraceptives, as found, for example, in the Voahary Salama's work in Madagascar (EHP, 2002:14). This emphasis seems due to the simplicity, for the implementing organizations, of providing the service, and responds to the difficulties of offering a permanent health service in target communities. As a description of one project explains, "Depo-Provera is offered as a simple, secure, long-term, easily reversible, culturally acceptable method of family planning" (PAI, 2005b). However, the health risks of long-acting contraceptives such as Depo-Provera, and the need for proper screening and follow-up of users, raise questions about the appropriateness of these contraceptives in remote rural areas.

Depo-Provera is associated with a wide range of side effects including irregular bleeding, weakness, depression, weight gain, nausea, loss of libido, headaches, abdominal pain, and hair loss. In the US, the contraceptive is required to carry the FDA's most severe "black box" warning, because it causes losses in bone mineral density. FDA recommends limiting the drug's use to two years and also calls for a medical evaluation of women taking the drug long-term. In addition to all of the above, recent studies have shown that Depo-Provera users may be three times more likely to contract gonorrhea and chlamydia than are women using other hormonal contraceptives, and there is some evidence of a similar correlation between Depo-Provera use and risk of contracting HIV (Oliver and Dukhanova, 2005).

The concern regarding PE projects in remote rural areas is that the implementing organization's population agenda, combined with the limited resources available in the region, will lead to services being offered based on what's doable and effective rather than on what's most appropriate for women's health.

Although the brief snapshots of PE projects available in the published literature often do not provide much detail about the actual RH/FP services offered, there are reports of Depo-Provera being provided in PE projects in rural Nepal (Vogel and Engelman, 1999:16), in the Peruvian Amazon (PAI, 2005b), in southwestern Uganda (Engelman, 1998b), in the Philippines (CI, 2004b), in Madagascar (CI, 2004b) and in Kenya (C. Honzak, pers. comm., May 2, 2005). It is very likely that Depo-Provera is in use in other PE projects and other countries. What needs to be investigated is the level of screening and follow-up care available to women in these remote rural areas where Depo-Provera is being provided, as well as what information about risks is being provided and what alternatives are available.

As Hartmann has noted, "In the absence of a functioning health care system, it is difficult, if not impossible, to have a decent family planning program with adequate screening and follow-up" (1995:136). The concern regarding PE projects in remote rural areas is that the implementing organization's population agenda, combined with the limited resources available in the region, will lead to services being offered based on what's doable and effective rather than on what's most appropriate for women's health. The way resource limitations and conditions in the target area guide choices regarding services to be promoted is illustrated in CI's report on its work in the Philippines.

The primary strategy of the RH/FP component of the project is to encourage families to shift to modern methods of family planning (such as the non-scalpel vasectomy and bilateral tubal ligation) and adopt natural

family planning (e.g., the beads/standard days necklaces, lactation menorrhoea method (LAM), basal body temperature, symothermal methods.) These methods are considered to be more effective over the artificial and temporary ones. The shift also supports an approach to a sustainable delivery of RH/FP services, as these methods are more accessible given the current logistic and budgetary limitations of the government and in the light of the gradual reduction of free contraceptive supplies from foreign donors like USAID. (CI, 2005b:5)

While the emphasis on natural family planning may represent a safe and sustainable response to the realities of poor rural communities, it is troubling to see choices regarding sterilization versus other forms of birth control based on logistic and budgetary limitations and reductions in contraceptive supplies from donors, rather than on the needs, desires, and medical situation of the women and men involved.

Narrow RH/FP focus

As the following description of the Brazilian national experience with family planning illustrates, a narrow approach to fertility goals can overlook even basic aspects of reproductive health essential to women's well-being.

In Brazil, fertility rates have declined as rapidly as in China, and contraceptive prevalence is reaching industrialized countries' level. However, maternal mortality rates in Brazil remain unacceptable; prenatal and obstetric care still require much improvement; and, most importantly, HIV infection among Brazilian women keeps increasing (when overall transmission is decreasing). This last trend is directly related to gender inequality (women still do not have full power to negotiate in the domain of sexuality) as well as to contraceptive

prevalence patterns (it is not surprising that sterilized women will not use a condom when having sex with their husbands). The Brazilian experience also indicates that lower fertility neither automatically translates into poverty reduction nor prevents environmental degradation. (Corrêa, 2001:109)

One important question that needs to be asked about PE projects is whether they are truly supporting “healthy communities” and “healthy families,” phrases incorporated in the titles of many of the projects, or are they offering more limited family planning services? Even a more broadly defined “clinical package” consisting of “prenatal and delivery care, family planning services, management of the sick child...and case management of sexually transmitted diseases” omits a wide range of health needs found in poor, isolated rural communities (Hartmann, 1995:138). The concern is that rather than address the communities’ medical needs holistically—a stated principal of CBPE programs (Engelman, 1998b; Vogel and Engelman, 1999:21)—projects might be focusing health resources primarily or exclusively on women’s reproductive health and improving children’s health to encourage adoption of family planning.

Although the published descriptions of PE projects typically offer small snapshots of projects that frequently are too brief to provide detailed descriptions of program services, the PE literature does offer some sense of the range of services offered. This initial review suggests that many of the integrated PE programs, commonly cited as successful examples of linking health and conservation needs, do not seem to address the breadth of health needs typically faced by poor, rural communities. Some don’t even fully cover the basics of the “clinical package” cited above. Even when project objectives include improved maternal and child health, or improved nutrition, there may be little substance in project activities to address these objectives.

For example, although the CI project in Mexico's Lacandona Forest included, as one of its six objectives, the goal to "provide information and training to improve maternal and child health, and reduce associated mortality rates," the description of activities under this heading in the organization's report to the Packard Foundation describes much more limited family planning and reproductive health interventions: CI "provided classes [to doctors, nurses, and medical aids employed by the Mexican Social Security Institute] in reproductive health and family planning methods and services, and in communication methods for delivering these services;" and, "To complement government resources, CI provided contraceptive supplies and materials in the third year of the project to ensure that reproductive health activities continue during the next year" (CI, 2004a:5).

CI's Healthy Families, Healthy Forests Program seems to have a somewhat broader approach to addressing health concerns, with the Madagascar program offering, through its partners, vaccinations and improved nutrition interventions. The newly initiated Cambodia program has constructed a health post that provides vaccinations, de-worming, vitamin supplements, and pre-natal care along with family planning services. CI reports that in the Philippines program, now in its third year, village health workers are (in an apparent change from previous years) "not only providing family planning services but also maternal care services (pre-natal and post natal care) and even some child health care in their assigned areas" (CI, 2005b:7)

In the Philippines, the IPOPCORM project responds to what one of its publications has described as "Malthusian overfishing" (Castro and D'Agnes, no date) with a program combining RH/FP with integrated coastal management and biodiversity conservation. It is not clear from the project's literature if any other health interventions are offered to meet local needs. The project does attempt to respond to high levels of malnu-

trition through food security initiatives (Castro et al., 2004; Castro and D'Agnes, no date).

Voahary Salama's integrated PHE program in Madagascar has addressed a wider range of health issues including family planning, immunization, maternal and child nutrition, diarrheal disease prevention, and prevention of malaria and other infectious diseases in conjunction with work to promote reforestation and introduce new agricultural techniques (Kleinau et al., 2005). Several conservation organizations working in Africa, including the Jane Goodall Institute and WWF, have begun to incorporate HIV/AIDS education and prevention into their PE work (Lalasz, 2003; WWF_US, no date).

How are PE projects measuring themselves?

Another way to view the breadth of PE projects, and the extent to which they attempt to address overall issues of community well-being, is through the choice of indicators used for project evaluation by program managers. Here again, the EHP - Voahary Salama project offers a valuable model for measuring success based on a broad suite of human health and environmental indicators measuring contraceptive prevalence; child health, disease prevalence, and nutritional status; hygiene; women's reproductive health; food security; natural resource management (NRM); household livelihoods; and women's participation in community groups and activities (Kleinau et al., 2005). Yet even this broad suite of indicators emphasizes health of children under five and mothers rather than all members of a community, while the majority of NRM indicators are limited to convincing community members about the negative consequences of "slash and burn" agriculture.

Elsewhere, projects seem to be evaluated on even narrower terms, with a marked tendency to emphasize family planning goals. In a review of the documentation of 42 CBPE projects, Vogel

and Engelman (1999) identified 26 “reproductive health indicators” and 32 “environmental indicators” used in project evaluations. The first list includes only a few indicators addressing broad health concerns (infant mortality, under five mortality, and numbers of women receiving prenatal care and cervical cancer screening) while the majority address contraceptive use (9 indicators) or the use of reproductive health services. Not included in the list of indicators are any measures of nutrition, postnatal care and general child or adolescent health, or vaccination levels, among other possibilities.

The vast majority of project objectives and measurable indicators identified by participants in a 2004 workshop on monitoring PHE projects aimed at either RH/FP goals or NRM and biodiversity conservation goals. Notably missing were broad measurements of community well-being, the status of women, literacy, land tenure, wealth equity, and the like. Even where some health and well-being results were identified as intermediary steps in the “results chains” participants were encouraged to construct, they were infrequently defined as project objectives or suggested for measurement through indicators (Foundations of Success, 2004).

Although a common assumption of workshop participants was that a particular intervention would lead to better health or economic conditions for families, which in turn would lead to desired conservation outcomes, measurements tended to be focused either on the initial RH/FP intervention or on the ultimate conservation out-

come, rarely on human well-being. Thus, for example, one group exercise posited that provision of RH/FP information and services would result in healthier women and children, increased socioeconomic status, and ultimately lead to greater appreciation for and protection of natural resources. Indicators proposed for measuring success, however, showed a much narrower vision: conservation results would be indicated by reductions in slash and burn agriculture, while family planning success could be measured by the number of couple-years of protection, contraceptive prevalence rates, and levels of community-based distribution of contraceptives. This narrow focus was reinforced when the representative of USAID, funder of the conference and of most of the PHE projects repre-

sented, called for all projects to incorporate two specific indicators: Contraceptive Prevalence Rates and number of women of reproductive age using contraception (Foundations of Success, 2004).

Interestingly, in a workshop two years earlier sponsored by Population Action International, with many of the same participants and also addressing questions of monitoring and evaluation of PE projects, participants did suggest measurements both of gender roles (such as number of women in leadership positions or participating in community activities) and of quality of life (such as food security, household well-being) as important universal indicators for measuring success of integrated PE projects (Buff, 2003). It is not clear, however, to what extent those ideas are being developed and applied in current PE projects.

Notably missing were broad measurements of community well-being, the status of women, literacy, land tenure, wealth equity, and the like... measurements tended to be focused either on the initial RH/FP intervention or on the ultimate conservation outcome, rarely on human well-being.

Questions of Environmental Justice

DeSouza (2004) points out that it is not easy to determine in a specific location what socio-economic factors have the greatest impacts on the environment and thus what interventions might be appropriate to prevent environmental degradation:

What kind of interventions will have the greatest impact? If we want to preserve old growth forests, should we fight corruption that awards favorable concessions to rapacious logging companies, or should we prevent migrant workers from moving in? These interventions are difficult to evaluate, partly due to poor-quality data on the factors driving change. (DeSouza, 2004:31)

In spite of such uncertainties, the establishment of CBPE and PHE projects seems to be based on an *a priori* assumption that addressing population growth is the most appropriate—or perhaps the easiest to implement—way to slow environmental degradation and meet community needs. Consideration of other sorts of linkages might lead to different interventions.

Human rights

If one looks at the relationships between humans and environment, a central consideration has to be human rights, including political and legal rights, rights to land and natural resources, economic rights, and cultural rights (among others), all of which are linked. For a fisher in Cambodia (or elsewhere),

It goes without saying that the rights to access, use, and manage natural resources are inextricably linked to the rights of health and economic welfare...[but] secur-

ing the environmental rights so vital to people's survival cannot be achieved without improvement in the political, legal, and judicial rights that rural Cambodians have long been denied. (Ratner, 2004)

Given the conservation movement's history of human rights violations (Geisler 2002; Veit and Benson, 2004) it seems that linking rights and resources is an essential part of any project that tries to integrate human needs with conservation. For example, a focus on rights would call for consideration of the huge areas of poor countries in Africa and elsewhere, in many cases 10% or more of total land area, that have already been set aside for conservation (Geisler, 2002; Bird et al., 2002:13). Yet the majority of PE projects remain embedded in standard conservationist visions of defending key biodiversity hotspots and ecoregions located almost exclusively in the global south. It also is not clear, with the important exception of the emphasis on gender equality, to what extent human and environmental rights are being prioritized by individual PE projects. This concern is discussed further in the section below comparing PE projects and a rights-based conservation effort in the Philippines.

Although many PE projects promote economic development projects, ranging from the sale of contraceptives and small scale artisanal projects to alternative agriculture initiatives, such projects are limited both by the priorities of the implementing organizations and the economic realities of the regions where they work. One of the lessons of the Voahary Salama experience was that:

Basic economic needs have to be met to maximize the impact of the interventions in PHE. As the higher diarrheal disease prevalence and unchanged high levels of child malnutrition have shown, factors other than program interventions seem to play a major role in health outcomes...Voahary Salama NGOs and other partners...have promoted cottage industry and income gen-

eration. Data from two surveys, however, indicated that these activities are still at small-scale level, and few families benefited from credits or were provided equipment to improve productivity. Even if production increases in these remote rural communities, it will be difficult for villagers to sell their products unless the transportation infrastructure improves...half of the villages are only connected by dirt track or footpath and about 40% of the villages are 5-15 kilometers away from the nearest market. Reduction in the high levels of poverty and food insecurity need to accompany improvements in family planning, maternal and child health, agriculture and natural resource management to result in health impact. (Kleinau et al., 2005:88-89)

In spite of such observations, economic activities seem to be more of an add-on to most PE projects rather than a central piece of them. In fact, there still seems to be significant ambivalence about addressing the economic needs of populations living near biodiversity hotspots. As one participant in the 2001 conference *Planting Seeds and Meeting Needs: New Partnerships for Community-based Resource Conservation and Reproductive Health* put it, “Economic development is really the key to giving people choices about their lives, but there is also the threat that when people are better off they tend to destroy their environment more rapidly than before” (Kleinau, quoted in Riesenberger, 2001:16). Other participants shared this ambivalence, expressing support for “specific economic activities that practice sustainable use” while resisting the identification of development as a formal PE goal, both because of the potential impact of development on the environment and also due to concerns that projects need to stay focused and can’t “fix everything” (Riesenberger, 2001:16).

Given that some of the roots of PE are in development methodology that looks to respond to community needs, this desire to set limits and

stay focused is troubling. In particular, concerns about the environmental impacts of improving people’s lives need to be challenged. In addition to the importance of economic development to human well-being, there is significant evidence that, rather than destroying their environment more rapidly, better-off communities will increase productivity and, in so doing, reduce pressures on the land (Sayer, 1995).

Are external actors being ignored?

Both in the literature about population and environmental linkages globally, and in specific PE projects on the ground, there is a tendency to ignore or quickly pass over the impacts of external forces on local environments, whether it be northern consumption and the role of multinational corporations, or the monopolization and extraction of natural resources by national elites.

Only a very limited number of PE programs seem to have addressed, or even made note of, issues of external corporate demands on resources or the impact of social inequalities on environmental degradation. One exception might be ProNatura, in Mexico, which addresses gender and land tenure issues as the root causes of deforestation. While promoting reproductive health education and natural resource management, “working to reform traditional land tenure policies in the countryside is [also] a primary focus of ProNatura” (Riesenberger, 2001:8). Another example where outside pressures on the land are acknowledged comes from Tibet, where the Peneba Program, run by local government councils in conjunction with the international NGO Future Generations, is credited with stopping work on a road “that would have allowed access to loggers” (Margoluis et al., 2001:18).⁴

In general, however, it is difficult to find evidence in the PE literature that these wider socioeconomic concerns are being considered or

addressed. A discussion of the success of CBPE programs in providing reproductive health services to hard-to-reach communities refers to “a project in India [that] works with members of oppressed castes and communities resettled to less productive land from their former home within a national park” (Vogel and Engelman, 1999:22). This single sentence raises a host of issues linking environment, human rights, health, and development in ways that might not prioritize reproductive health—issues of class, parks policy and land tenure, and connections between human health and access to productive land—yet there is no indication to suggest these issues are being addressed.

Examples from the Philippines

In order to better illustrate the importance of an environmental justice perspective, this section concludes with a brief discussion of PE linkages and projects in the Philippines. This island nation, with rapid population growth and internationally identified biological hotspots, has been held up as a powerful example of the challenges human populations pose for environmental and natural resource management (Creel, 2003). Save the Children, Path Foundation Philippines, and Conservation International, among others, are carrying out PE projects there (Mogelgaard, 2004). For all these reasons, the Philippines provides an interesting location to compare integrated PE projects with other integrated approaches to complex human-environment problems. This section looks briefly at two PE projects working with fishing communities on issues of coastal management, and compares and contrasts their assumptions, analyses, activities and outcomes with a third coastal resource management project which applies a community organizing and rights-based approach. These examples are not intended to provide comprehensive evaluation of the projects discussed. Rather, the goal here is to briefly raise some questions and highlight some concerns

regarding the risks and limitations of a PE approach.

In 2000, Save the Children initiated the Population and Environment Coexistence Development (PESCO-Dev) project with artisanal fishing communities in the West Visayas region of the Philippines (Layng, 2002; Layng 2003). Responding to rising populations and falling fish stocks, the project “strives to create a balance between local populations and the environment” and to “cultivate local acceptance and adoption of both reproductive health practices and sustainable coastal resource management practices” (Layng, 2002:6).

The following year, PATH Foundation Philippines, Inc. started the Integrated Population and Coastal Resource Management (IPOP-CORM) initiative, whose purpose is described as:

to encourage and support integration of population management and reproductive health strategies into coastal resource management (CRM) plans and projects in selected biogeographic zones characterized by high marine biodiversity, high population growth and young population age structure. (Path Foundation Philippines, Inc., 2005)

According to Castro et al. (2004), IPOP-CORM’s strategy “follows directly from the [national government’s] ICM [integrated coastal management] framework...for fish food security” which aims to reduce fishing efforts, stop illegal and destructive fishing practices, and protect and manage coastal habitats. The authors write that the “innovative element” is the inclusion of efforts to increase family planning into an environmental management program and they note that part of IPOP-CORM’s mission is to respond “specifically to the need to promote family planning practice in marine hotspot areas” (Castro et al., 2004:5).

Both projects were begun with grants from the David and Lucile Packard Foundation, a US-

based foundation whose population program is based on the premise “that the endangered species and related environmental problems cannot be dealt with in any adequate way without taking into account the population pressures and the economic well-being of the people who may be affected” (Packard Foundation, 2005a). “The goal of the Philippines subprogram is to slow population growth by increasing access of underserved individuals to family planning and reproductive health (RH/FP) options” (Packard Foundation, 2005b).

Both PESCO-Dev and IPOPCORM included in their work plan analyses intended to evaluate the PE links and guide program implementation. PESCO-Dev carried out an Environmental Site Assessment (ESA) to study the dynamics of concerns identified by project staff: namely unsustainable fishing practices by subsistence fisherfolk and depletion of fishing resources caused by growing numbers of people fishing (due, in part, to population growth). In addition to providing primary data to guide project development and to create a baseline for project monitoring and evaluation, the ESA also served to “build the capacity of coastal residents to analyze the relationship between coastal resources and population dynamics” (Layng, 2003:2).

IPOPCORM’s baseline ecological and population studies also were designed to document the links between population and environment. Survey results showed correspondences between environmental degradation and several human demographic characteristics: low levels of contraceptive use, high unmet family planning need, and high levels of malnutrition (D’Agnes et. al, 2005). Having begun with the premise that population growth is an important cause of environmental degradation, both projects were, in fact, able to document such a link and then use this research to guide their work on RH/FP, natural resources management, and community education on the population-environment link.

A third integrated program, also addressing the problems of declining fish catch and related issues of human well-being, offers an interesting contrast. Beginning in 1992, the Center for Empowerment and Resource Development, Inc. (CERD) worked with fishing communities in the Batangas coastal area to identify and address key issues in the region. Unlike the other two programs, CERD began not with a particular vision of the links between population and environment, but rather a commitment to a “bottom-up approach to development” (Bautista et al., 2000:153) and a vision of coastal communities “where the people, particularly the fishers, are entrusted with the control, use and management of the sea and its resources” (Melgar and Rodríguez, 1995:CERD’s Vision).

CERD’s research highlighted a series of complex, interlocking issues influencing both environmental and human health, many of them related to actors other than the poor fishing communities that PESCO-Dev and IPOPCORM focus on. First, wealthy people were making land claims and privatizing previously public lands where fishing communities resided, causing eviction of the fishers and demolition of their homes. Second, the government was failing to stop illegal quarrying of coral and sand or the cutting of mangroves to make way for resorts and fishponds. Third, large corporate fishing vessels were intruding on areas previously reserved for subsistence fishing folk and fishing with unsustainable methods. In addition, CERD found that poverty put subsistence fishermen at a disadvantage in their interactions with other actors: Lacking the funds to purchase their own fishing gear, they were dependent on the owners of the equipment who then took the major part of the profits. At the market end, dependence on middlemen again reduced income and made them extremely vulnerable. Finally, government development plans called for turning one local bay into a tourism and recreation area, and another into an industrial zone, with the result that both would be unavailable for artisanal fishing (Melgar and Rodriguez, 1995).

Conclusions and Recommendations

This suite of issues points to the role that wealth, class, and political power play in how natural resources are used and managed, preserved or damaged, and in who benefits from them. Such an analysis provides local communities with tools for addressing some of these issues—fishers used the results of CERD research to pressure the local government to create a Marine Reserve in the Calatagan area (Bautista et al., 2000). They were also empowered to form SAMMACA (the Association of Small fisherfolk in Calatagan) uniting 18 fishing cooperatives in work to protect both their rights and the environment (Stanton and Boyce, 2005)

The above is not meant to suggest that PESCO-Dev and IPOPCORM have focused exclusively on family planning. Both programs have relied on many similar strategies to those of CERD, ranging from promoting alternative livelihood projects, to replanting mangroves, to the creation and sustainable management of marine protected areas. Nor have they been unaware of the other causes of overfishing. Layng (2002), for example, mentions commercial fishing boats invading artisanal fishing areas as one of a number of factors affecting fishery decline. The differences are that CERD's rights-based approach identified a broader and more complex set of challenges to environmental protection and human development and more options for addressing them. Acknowledgement of such issues empowers local people and broadens our understanding of the linkages between human society and the environment. It also frees women to make their reproductive health and family planning decisions solely on the basis of personal health and individual needs rather than as part of a conservation strategy.

This review represents an initial attempt to look at the growing number of integrated projects that combine reproductive health interventions with biodiversity conservation, and to ask critical questions regarding the philosophy, agenda, and implementation of such projects. It has relied primarily on the published literature about PE projects and reports available from a small number of projects. The emphasis is on the broad vision of PE linkages, while drawing on the available documentation to understand how that vision is implemented in specific locations. Projects are being implemented in many different countries around the world, and are managed by a variety of conservation and health organizations. Such diversity creates challenges to writing about PE programs as a group, and may cause some to object to attempts to generalize or draw conclusions. Yet there are links that connect the projects and many similarities amongst them.

Several countries and regions are host to two or more PE projects run by different NGOs, a fact that highlights shared perspectives and goals. A number of NGOs also carry out PE projects in multiple countries—thereby bringing a similar approach to a variety of locations. There is a lot of cross-fertilization among PE programs, ranging from collaborations between implementing NGOs, to movements of staff and fellows from one organization to another. Crucially, most of the projects referred to in this paper are supported by USAID and a small group of private funders, and they have been formed and informed by the writings and advocacy of a small number of individuals and organizations.

As a group, PE projects, with their intertwined roots in development work, conservation, and population programs, seem to have inherited both some of the best and some of worst aspects of these different ancestries.

PE programs represent an important effort by conservation NGOs and others to address the needs of local communities living in and around conservation areas. There clearly exists a strong sentiment among many in the PE field that “the key partners are the local and indigenous communities in the target area” (Milne, cited in Parker, 2005). PE programs promote the idea that strengthening and empowering local communities are key to both improving lives and meeting conservation goals:

It is crucial that the people with whom NGOs and governments work with and serve are viewed as a resource rather than a threat to their environment. Local people, no matter how marginalized, possess the capacity to improve their lives. Investing in human capacity, especially through the empowerment of women at the community level, is the key to the long-term sustainability of both health and conservation programs. (Riesenberger, 2001:1)

This urge to take a pro-human approach is an essential corrective to exclusionary approaches to conservation. Yet it is undermined by the Malthusian narratives that underpin PE projects. Rather than presenting poor rural communities as legitimate managers of natural resources, such narratives present them as ignorant and destructive, in need of the expertise provided by northern NGOs to change their behaviors. They do nothing to educate the public in donor countries about the broader causes of environmental degradation nor do they empower people living in the target regions to defend their environment against multiple threats.

Participatory, community-based approaches are claimed as a central element of PE projects. Participatory methods have the potential to

increase local control over project activities and to give project beneficiaries tools to improve their lives and protect their environment. However, the approach is frequently weakened by *a priori* theories about community needs—specifically the assumption that community health needs will be

addressed through RH/FP services—as well as simplistic assumptions about human impacts on the environment. It appears that participatory methodologies used in PE projects are often limited to community activities in support of predefined project goals, rather than more open-ended approaches to identifying problems and local people’s ideas for solving them. In addition, by focusing narrowly on internal

community behaviors (child bearing, farming practices), PE projects risk disempowering poor rural people by discouraging them from responding to external causes of environmental degradation.

PE programs emphasize gender equity and support women’s participation in conservation, economic development, and community decision making. Yet here again, the focus on women’s fertility as a source of environmental degradation and of poverty undermines such efforts. Additionally, “empowering women at the community level” is insufficient if the community itself is not empowered *vis-à-vis* the broader society.

The critiques of PE programs offered in this paper are in no way intended to suggest opposition to provision of RH/FP services to isolated rural communities. It is essential that women throughout the world be given access to RH/FP services, but it is both ineffective and potentially dangerous to focus narrowly on reproductive health in regions where basic health services of any kind are lacking. If the goal is really improving women’s health, then care must be taken to insure that health interventions are broad enough to

Rather than presenting poor rural communities as legitimate managers of natural resources, such narratives present them as ignorant and destructive, in need of the expertise provided by northern NGOs to change their behaviors.

address all community health needs. And the risks, as well as the benefits, of family planning interventions need to be assessed honestly. This can only happen if the provision of reproductive health services is de-linked from anticipated population outcomes and related conservation goals.

In sum, while integrated approaches to conservation offer real opportunities to treat local people as partners and meet human needs and conservation goals simultaneously, the specific and narrow focus on links between population and environment undercuts many of the benefits of the integrated approach and creates its own problems. This is true both of generalized linkages between population and biodiversity loss on a global or regional scale, and of narratives explaining problems of environmental degradation locally as due to high birth rates.

Conversely, there seems to be little reason for integrated projects to be focused so narrowly or to be so dependent on specific linkages between population and environment. The same synergies that are frequently cited as the benefits of PE projects—ranging from savings obtained by sharing costs and resources between sectors, to advantages provided by drawing connections between the condition of human communities and their environment—can be obtained in broader or more open-ended integrated projects. Just as environmental factors influence and are influenced by human health and population, so too do they interact with people's economic condition, their political status, and more. Conservation NGOs willing to approach integrated projects in a more truly participatory way, without an *a priori* population agenda, are likely to discover a variety of potential new entry points to engage local people on issues of conservation. No doubt local women *will*, in many cases, request RH/FP services along with help addressing other pressing health concerns. But they will likely also have other needs that merit the help of those who seek their collaboration in protecting biodiversity. And, if given the opportunity, they may also educate the conser-

vationists about causes of environmental degradation or obstacles to conservation that they have overlooked.

In closing, it is worth noting that PE programs are evolving, and a number of the NGOs and funders involved are currently carrying out their own studies and evaluations to collect lessons learned so far with an eye toward refining the work in the future, correcting weaknesses and building on strengths. Hopefully, this paper can offer some useful lines of inquiry for evaluating PE projects and contribute to the dialogue defining future integrated conservation projects. The following recommendations offer some specific ways to build on the strengths and enhance the rights-based, participatory aspects of PE programs:

- Organizations promoting the funding and provision of RH/FP services in the global south should refrain from using environmental and population arguments to promote their goals. The distortions of Malthusian arguments cannot be justified simply because they are effective in winning partners or funding; they need to be replaced with rights-based arguments in favor of making RH/FP available to all women.
- One of the strengths of early PE linkages was that they developed in response to requests from women in the communities being served. Community initiative and local needs should remain central to project planning and PE program implementation dependent on genuine demand elicited through a participatory process that offers alternative possibilities as well.
- PE programs can avoid some of the risks described in this paper if evaluations consider the following questions: (a) Are opportunities for local participation real and effective throughout all stages of the project? (b) Are RH/FP approaches safe and comprehensive and is there adequate health care available to

provide screening and follow-up as well as other basic health services? (c) Are the full range of causes of environmental degradation recognized and does the project support the economic and political empowerment that poor communities need to be able to protect their environment?

- Poor rural populations need to be heard, and their needs addressed, as a matter of right, and not just when and if their needs correspond with conservation goals. As powerful actors in remote rural areas, conservation organizations need to acknowledge this right at the highest level and make partnering with the local residents in the regions where they work a core part of their mission.
- Funders interested in supporting integrated projects need to have a broad enough vision

to allow NGOs to respond to locally defined needs rather than simply implement predefined objectives. Funders should be willing to have project success based at least in part on criteria provided by beneficiary communities. In particular, programs need to avoid narrow interpretations of success based on family planning measures like contraceptive prevalence or couple-years of protection, and instead focus on broad health and human welfare objectives.

- Funders and implementers need to provide integrated projects with timeframes that are sufficiently long to allow for a genuine participatory process and for meaningful outcomes both for human well-being and conservation goals.

NOTES

1. Building on the work of ecologist Norman Myers, CI's global hotspots are places in the world with at least 1,500 endemic plant species and where CI has determined that at least 70% of the original vegetation has been lost. Twenty five hotspots were originally identified in 2000; CI has recently revised the list and now describes 34 hotspots (CI, 2005c).
2. As DeSouza et al. (2003:22) have noted, reforestation has its limitations and replanted forests are not equivalent to original or old-growth forests in terms of ecological diversity. However, the discussion regarding how to interpret the Chinese and Indian experiences remains pertinent since much of the forest-cover data used to draw attention to environmental destruction in countries targeted by population organizations hides the poor state of forests in the north by ignoring this distinction.
3. USAID funds a host of projects linking population and environment, including CI's Healthy Families Healthy Forests project, WWF's Population, Health, Gender and Environment Program, Path Philippine's IPOPCORM, and the Environmental Health Project's work in Madagascar with Voahary Salama. USAID also funds the University of Michigan Populations Fellows Programs and, through them, the Environmental Change and Security Project (ESCP) at the Woodrow Wilson Center. CARE was the sponsor of 17 of the 42 CBPE projects featured in Population Action International's publication *Plan and Conserve* (Engelman, 1998b) and although CARE has rejected the CBPE label (Engelman, pers. comm., April 20, 2005) and their projects no longer figure in PAI's CBPE database, their work clearly has served as a model for other organizations developing PE linkages. CARE currently partners with CI to provide health services for that organization's PE program in Cambodia (CI, 2004b; Parker, 2005).
4. While representing a rare but welcome recognition in the PE literature that pressures on the environment come from other than poor local residents, this outcome raises other questions about the extent to which project interventions really address local needs: transportation was identified as one of three community priorities in village surveys, along with energy and health, and one wonders what impact stopping road construction would have on meeting villagers' needs.

BIBLIOGRAPHY

- Bautista, C., Angeles, L., & Dionisio, J. (2000). Philippines. In McGee, T.G., Angeles, L., Bautista, C., Daud, S., Hainsworth, G., Scott, S., Setiawan, B., Suksiriserekul, S., & Anh, V.T., *The Poor at Risk: Surviving the Economic Crisis in Southeast Asia*. (Draft). Centre for Southeast Asian Research, Institute of Asian Research, University of British Columbia. Retrieved 12 September, 2005, from <http://www.iar.ubc.ca/centres/csear/SSN/ch4.pdf>
- Bird, K., Hulme, D., Moore, K., & Shepherd, A. (2002). *Chronic poverty and remote rural areas*. Chronic Poverty Research Centre Working Paper 13.
- Buff, J. (2003). *Planting seeds, meeting needs: Measuring progress in community-based conservation and reproductive health*. 2002 Meeting Report. Washington, DC: Population Action International.
- Castro, J. R., D'Agnes, L. A., & Aquino, C. A. (2004). Mainstreaming reproductive health and integrated coastal management in local governance: The Philippines experience. Paper prepared for the Coastal Zone Asia-Pacific (CZAP) Conference: Cebu, Philippines.
- Castro, J. & D'Agnes, L. (no date). *Integrated population and coastal resource management initiative: A cross-sectoral model for food security*. (IPOPCORM, PATH Foundation Philippines Inc.).
- Caudill, D. (1998). "Integration of population and environment: World Neighbors' people-centered, capacity-strengthening approach." In Caudill, D. (Ed.), *Lessons from the field: Integration of population and environment*. Oklahoma City, OK: World Neighbors.
- Cincotta, R. P. and Engelman, R. (2000). *Nature's Place*. Washington, DC: Population Action International.
- Cocks, T. (2005, March 16). Madagascar to spend \$110M US aid on land reform. Reuters. Retrieved 11 September, 2005, from Planet Ark Website: <http://www.planetark.com/avantgo/dailynewsstory.cfm?newsid=29955>
- Conservation International (CI). (2004a). Meeting population and conservation needs in Mexico's Selva Lacandona: Final report to the David and Lucile Packard Foundation. Grant #2000-13045. January 26, 2001 - April 30, 2004.
- Conservation International (CI). (2004b). Healthy families, healthy forests: Combining reproductive health with biodiversity protection for effective programming. Year 2 (FY04) annual results report. Associate Grant No. GPH-G-00-02 under Leader Associates Cooperative Agreement No. LAG-A-00-00-00046-00.
- Conservation International (CI). (2005a). Meeting population and conservation needs in Mexico's Selva Lacandona: Interim report to the David and Lucile Packard Foundation. Grant #2003-25653. May 1- December 31, 2004.

- Conservation International (CI). (2005b). Healthy families, healthy forests: Combining reproductive health with biodiversity protection for effective programming. Year 3 (FY05) Semi-Annual Results Report. Associate Grant No. GPH-G-00-02 under Leader Associates Cooperative Agreement No. LAG-A-00-00-00046-00.
- Conservation International (CI). (2005c, Winter). "The new hot spots." *Conservation Frontlines*. 7-11.
- Conservation International (CI). (2005d). Conservation programs: Population and environment. Retrieved 11 September, 2005, from <http://www.conservation.org/xp/CIWEB/programs/population/>
- Corrêa, S. (2001). "Forum: Is there a population implosion?" *Environmental Change and Security Project Report*. 7, 107-109.
- Creel, L. (2003). *Ripple effects: population and coastal regions*. (policy brief). Washington, DC: Population Reference Bureau.
- Dabelko, G.D. (2004). "The next steps for environment, population, and security." *Environmental Change and Security Project Report*. 10, 3-7.
- D'Agnes, L., Castro, J., & Aquino, C. (2005). *Enabling communities to create environmentally sustainable human populations: The IPOPCORM experience*. (Draft). Makati City: PATH Foundation Philippines Inc. (PFPI).
- De Souza, R., Williams, J., & Mayerson, F.A.B. (2003). "Critical links: Population, health, and the environment." *Population Bulletin* 58 (3). (Population Reference Bureau).
- De Souza, R. (2004). "An agenda for population, health, and environment." *Environmental Change and Security Project Report*. 10, 30-35.
- Engelman, R. (1998a). "Environmental concerns and reproductive desires: Linking services related to population and to natural resource conservation in communities." In Caudill, D. (Ed.). *Lessons from the field: Integration of population and environment*. Oklahoma City, OK: World Neighbors.
- Engelman, R. (1998b). *Plan and conserve: A source book on linking population and environmental services in communities*. Washington, DC: Population Action International.
- Environmental Health Project (EHP). (2002). *Integration of health, population, and environment programs in Madagascar: Midterm progress report*. Activity Report 115. Retrieved 16 May, 2005, from http://www.ehproject.org/PDF/Activity_Reports/AR115-Madagascar.pdf
- Feldacker, C. (2004, Spring). "Serving the stewards: Improving reproductive health and protecting the Amazon rainforest." *PECS News*. Issue 9. (Woodrow Wilson Center, Environmental Change and Security Project).
- Foundations of Success. (2004). *Monitoring PHE projects in the context of adaptive management*. Report from the USAID Healthy People, Healthy Planet workshop, November 16-18, 2004.
- Gardner-Outlaw, T. & Engelman, R. (1999). *Forest futures: Population, consumption, and wood resources*. Washington, DC: Population Action International.
- Geisler, C.C. (2002, May/June). "Endangered humans: How land conservation efforts are creating a growing class of invisible refugees." *Foreign Policy*. 80-81.

- Gibbs, S.L. (1998). "The global population nexus: A U.S. foundation perspective." In Caudill, D. (Ed.). *Lessons from the field: Integration of population and environment*. Oklahoma City, OK: World Neighbors.
- Gibbs, S.L. (2003). "Population and environment: A review of funding themes and trends." *Environmental Change and Security Project Report*. 9, 41-57.
- Guha, R. (1997). "The authoritarian biologist and the arrogance of anti-humanism: Wildlife conservation in the Third World." *The Ecologist* 27(1), 14-20.
- Hartmann, B. (1995). *Reproductive rights and wrongs: The global politics of population control*. (2nd edition). Boston: South End Press.
- Jeanrenaud, S. (2002). *People-oriented approaches in global conservation: Is the leopard changing its spots?* London: International Institute for Environment and Development (IIED) and Brighton: Institute for Development Studies (IDS).
- Jarosz, L. (1993). "Defining and explaining tropical deforestation: shifting cultivation and population growth in colonial Madagascar (1896-1940)." *Economic Geography*. 69 (4), 366-379.
- Kleinau, E. & Talbot, J. (2003, Spring). "When the whole is greater than the sum of its parts: Integrated indicators for population-environment programs." *PECS News*. Issue 8. (Woodrow Wilson Center, Environmental Change and Security Project).
- Kleinau, E., Randriamananjara, O., & Rosensweig, F. (2005). *Healthy people in a healthy environment: Impact of an integrated population, health, environment program in Madagascar*. Final Report (Draft).
- Lalasz, R. (2003, Spring). "Conservation, population, and health: A conversation with Jane Goodall." *PECS News*. Issue 8. (Woodrow Wilson Center, Environmental Change and Security Project).
- Layng, R. (2002, Spring). "Supporting livelihood and food security in coastal Philippine communities through population-environment programming." *PECS News*. Issue 6. (Woodrow Wilson Center, Environmental Change and Security Project).
- Layng, R. (2002/2003, Winter). "Strengthening formative environmental research through the inclusion of population variables." *Population-Environment Fellows Newsletter*. (Population-Environment Fellows Program, University of Michigan.)
- Margoluis, R., Myers, S., Allen, J., Roca, J., Melnyk, M., & Swanson, J. (2001). *An ounce of prevention: Making the link between health and conservation*. Washington, DC: Biodiversity Support Program.
- Melgar, M. & Rodriguez, M. (1995) *Formation of CRM council for the CBCRM of Pagapas Bay, Western Batangas*. Rome: UN FAO. Retrieved 11 September, 2005, from http://www.geocities.com/cbcrm_rc/CBCRMLibrary/CaseStudies/melgar.htm
- Mettermeier, R.A. (2005, winter). "The fascinating land of the lemurs." *Conservation Frontlines*, pp. 12-13.
- Mogelgaard, K. (2003). *Helping people, saving biodiversity: An overview of integrated approaches to conservation and development*. Washington, DC: Population Action International.

- Nash, J.G. (2001). *Healthy people need healthy forests—population and deforestation*. (policy brief). Washington, DC: Population Reference Bureau.
- Nations, J. (2002/2003, Winter). “CI’s integrated PE program.” *Population-Environment Fellows Newsletter*. (Population-Environment Fellows Program, University of Michigan.)
- Neumann, R.P. (2001). “Disciplining peasants in Tanzania: From state violence to self-surveillance in wildlife conservation.” In Peluso, N. & Watts, M. (Eds.), *Violent Environments*. Ithaca, NY: Cornell University Press.
- Oliver, A. & Dukhanova, D. (2005, Spring). “Depo-Provera: Old concerns, new risks.” *DifferenTakes* 38. (Population and Development Program, Hampshire College).
- Packard Foundation. (2005a, February 4). Population program. Retrieved 11 September, 2005, from <http://www.packard.org/pop>
- Packard Foundation. (2005b, February 4). Population program guidelines. Retrieved 11 September, 2005, from <http://www.packard.org/index.cgi?page=pop-philippines>
- Parker, M. (2005). Conservation and care in Cambodia’s Cardamom Mountains. Event summary. Retrieved 6 September, 2005, from http://www.wilsoncenter.org/index.cfm?fuseaction=events.event_summary&event_id=143331
- Path Foundation Philippines, Inc. (2005). Integrated population and coastal resource management (IPOPORM). Retrieved 11 September, 2005, from <http://www.pfpi.org/ipoporm.html>
- Population Action International (PAI). (2004). *Finding balance: Forests and family planning in Madagascar*. (DVD). Washington, DC: Population Action International.
- Population Action International (PAI). (2005a). *U.S. government funding for community-based projects linking reproductive health and natural resource management*. Washington, DC: Population Action International.
- Population Action International (PAI). (2005b). *Community-based population and environment: CBPE Projects Database*. Retrieved 7 April, 2005, from http://www.populationaction.org/resources/data_and_graphs/cbpe/index.php
- Ratner, B.D. (2004, Spring). “Environmental rights as a matter of survival.” *Human Rights Dialogue: “Environmental Rights”*. Carnegie Council on Ethics and International Affairs. Retrieved 12 September, 2005, from <http://www.cceia.org/viewMedia.php/prmTemplateID/8/prmID/4440>
- Riesenberger, J. (2001). *Planting seeds meeting needs: New partnerships for community-based resource conservation and reproductive health*. Washington, DC: Population Action International.
- Risby, L.A., Blomley, T., Kendall, C., Kahwa, I., & Onen, M. (2002). “Environmental narratives in protected area planning—The case of Queen Elizabeth National Park, Uganda.” *PolicyMatters* 10, 40-49.
- Sayer, J.A. (1995). *Science and international nature conservation*. Jakarta: Center for International Forestry Research (CIFOR) Occasional Paper No. 4.

- Simsik, M. (2003). *Priorities in conflict: Livelihood practices, environmental threats, and the conservation of biodiversity in Madagascar*. Doctoral Thesis. University of Massachusetts at Amherst.
- Stanton, E.A. & Boyce, J.K. (2005). *Environment for the people*. Amherst, MA: Political Economy Research Institute (PERI), University of Massachusetts.
- Swiss Federal Statistics Office. (2005). Country portraits: Germany: Key Data. Accessed 11 September, 2005, at: <http://www.bfs.admin.ch/bfs/portal/en/index/international/laenderportraits/germany/blank/kennzahlen.html>
- Tiffen, M., Mortimore, M., & Gichuki, F. (1993). *More people, less erosion: environmental recovery in Kenya*. Chichester: John Wiley.
- University of Michigan Population Fellows Program. (2005). Population-Environment Fellows Program: Overview. Retrieved 11 September, 2005, from <http://www.sph.umich.edu/pfps/pe/overview-pe.htm>
- Veit, P.G. & Benson, C. (2004). "When parks and people collide." *Human Rights Dialogue: "Environmental Rights"*. Carnegie Council on Ethics and International Affairs. Retrieved 12 September, 2005, from <http://www.cceia.org/viewMedia.php/prmTemplateID/8/prmID/4449>
- Vogel, C.G. & Engelman, R. (1999). *Forging the Link: Emerging accounts of population and environment work in communities*. Washington, DC: Population Action International.
- Weissman, A. L. & Freudenberger, M. S. (1998). "World Wildlife Fund's Population Dynamics and Resource Conservation Initiative: Forging Constructive Linkages Between Population and Conservation." In Caudill, D. (Ed.). *Lessons from the field: Integration of population and environment*. Oklahoma City, OK: World Neighbors.
- Whyner, D. (2001, Fall). "Collaborating for more effective population-environment interventions: Lessons from Madagascar." *PECS News* 3(2). (Woodrow Wilson Center, Environmental Change and Security Project).
- Williams, J. (2001, Spring). "Integrating population into environmental field projects." *PECS News* 3(1), 4-5. (Woodrow Wilson Center, Environmental Change and Security Project).
- World Neighbors. (1999). *Lessons from the field: Integration of population and environment II: Ecuador case study*. Oklahoma City, OK: World Neighbors.
- WWF and National Geographic. (2005). *Wild world*. Database accessed 11 September, 2005, at <http://worldwildlife.org/wildworld/>
- WWF Conservation Strategies Unit. (2002). *Mapping the connections: Population-environment lessons from Madagascar*. Washington, DC: WWF.
- WWF_US. (no date). *Reproductive Health and Gender*. Program summary sheet. WWF_US, Washington, DC office.
- Zinn, F. & MacKie-Mason, J. (1999, Fall). "University of Michigan Population Fellows Programs." *PECS News*. 1(1), 4-5. (Woodrow Wilson Center, Environmental Change and Security Project).