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Integrating Population, Health, and Environment Programs with Contraceptive Distribution in Rural Ethiopia: A Qualitative Case Study

Lianne Gonsalves, Samuel E. Donovan, Victoria Ryan, and Peter J. Winch

In rural Ethiopia, environmental degradation and a shortage of arable land impose a major toll on the population. Population, health, and environment (PHE) programs, such as that of the Ethio-Wetlands and Natural Resources Association (EWNRA), have evolved to address these issues. This article examines the community-based distribution (CBD) of family planning commodities in rural Ethiopia through EWNRA's large, multisectoral PHE program. Participants indicated that the integrated program encouraged acceptance of family planning and reduced geographic barriers to access. Through peer education and collaboration across government ministries, EWNRA leveraged integrated population–environment messages to garner support for its network of CBD providers. These integration strategies are a model for PHE programs worldwide, especially amid the global response to climate change. Because of the complex nature of PHE organizations, researchers often find it difficult to effectively document and evaluate their programs. With this in mind, we propose a framework to assess PHE integration. (STUDIES IN FAMILY PLANNING 2015; 46[1]: 41–54)

In low-income countries like Ethiopia, public-sector family planning programs are either delivered as standalone services or are integrated into larger reproductive, maternal, newborn, and child health programs. Social marketing and distribution of contraceptives through private-sector providers and sales outlets often complement public-sector provision. In 1992, the Rio Declaration on Environment and Development called for integrated environmental and development programs that would take “demographic trends and factors” into account, an acknowledgment of the synergistic relationship between demographic dynamics and sustainable development (United Nations 1992). The 1994 International Conference on Population and Development reinforced the links between population and environment (Kleinau, Rosensweig, and Tain 2002; Kleinau, Randriamanajara, and Rosensweig 2005).

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Ethiopia, with an estimated population of 94 million (UNDESA 2013), has maintained an annual population growth rate of more than 2 percent, despite recent declines in the total fertility rate (World Bank 2007; CSA and ICF Macro 2011). For Ethiopians living in rural areas (approximately 85 percent of the population), large family size has resulted in decreasing per capita landholdings (Patterson 2007). When children are unable to further parcel out their parents' land, they often begin to farm on increasingly nutrient-poor and sloped land (Haile 2004), a trend that has resulted in widespread deforestation and soil erosion. Prolonged cycles of drought and increasing desertification in Ethiopia indicate that global climate change may be affecting the country's economy and landscape (You and Ringler 2010). When combined with environmental degradation and population pressure, damage caused by climate change could be devastating, as 40 percent of Ethiopia's gross domestic product derives from agriculture (CSA 2009).

Population, health, and environment (PHE) programs evolved from sector-specific interventions that took place in the early 1990s. Such programs recognize the interconnection between communities, livelihoods, and the environment. The result is an integration of previously unrelated sectors, such as family planning and conservation. The incorporation of a strong livelihoods component into PHE programs promotes income diversification and fosters economic development, which in turn increases the demand for such programs among potential beneficiaries. In addition to promoting activities that more directly address the cross-sector nature of problems experienced by rural households, PHE programs potentially reduce operating expenses by increasing efficiency (D'Agnes et al. 2010).

Notable PHE programs exist in several low-income countries, such as the Philippines and Nepal (Carr 2008). Programs are also expanding in sub-Saharan Africa (Bremner 2009), where flagship programs such as Blue Ventures in Madagascar are receiving international acclaim for integrating reproductive health services into coastal and marine conservation and livelihood projects (International Conference on Family Planning 2013; Mohan and Shellard 2014). Ethiopia participates in the largest number of programs in sub-Saharan Africa, and the national-level PHE Ethiopia Consortium—a coordinating body—counts nearly 50 member organizations.

This article presents a case study of the Ethio-Wetlands and Natural Resources Association (EWNRA), a wetlands and environmental conservation organization, founded in 2000, whose mission has broadened to encompass livelihood, agricultural, family planning, and health interventions. EWNRA operates in three regional states—Amhara; Oromia; and Southern Nations, Nationalities, and Peoples—using its grassroots experience in environmental, wetlands, forestry conservation, and agro-ecosystem improvement to intervene in related national-level policy issues. In 2013, the organization reported that since its establishment, it had directly benefited more than 150,000 individuals through programs that integrated environmental sustainability into efforts to address the health, economic, and social needs of individuals and communities (EWNRA 2013). EWNRA is funded by donor foundations, non-governmental organizations (NGOs), and individual countries' embassies and development agencies. EWNRA is one of Ethiopia's leading implementers of the integrated PHE strategy, one illustration of how development organizations have responded to the call for cross-sector integration. EWNRA's PHE programs, similar to those of a number of other organizations (Carr 2008; Anderson 2010; Bonnardeaux 2012), rely on community-based distribution (CBD)

as an effective strategy for disseminating family planning messages and providing contraceptive methods (Katz et al. 1998; Gazi et al. 2005).

CBD programs provide health commodities outside the traditional clinical setting, usually through trained community members who operate at the village level (Katz et al. 1998; Ande, Oladepo, and Brieger 2004; Gazi et al. 2005). Programs date as far back as the 1960s, when the first family planning CBD programs originated in Asia and quickly extended across the continent and into Africa and Latin America (Phillips, Greene, and Jackson 1999). By the mid-1990s, the German Technical Cooperation (GIZ), the United Nations Population Fund (UNFPA), and USAID funded contraceptive CBD programs (Phillips, Greene, and Jackson 1999). CBD distribution, along with education and counseling, helps community members overcome geographical, social, and educational barriers that prevent them from accessing family planning services. Programs rely on paid agents or volunteers, and on home visits or contraceptive depots (Phillips, Greene, and Jackson 1999; Janowitz et al. 2000).

Before examining the implementation of EWNRA's CBD program, we describe the family planning distribution system in rural Ethiopia, which has been largely revamped in the past ten years. In 2003, Ethiopia's Ministry of Health launched the Health Extension Program (HEP), a countrywide initiative to improve access to primary care in rural areas (Sebhatu 2008). District health offices recruit women for a yearlong training program and then deploy them to health posts as health extension workers (HEWs). By 2010, the Ministry's HEP had trained more than 30,000 government-salaried HEWs (MoFED 2010). HEWs are responsible for both service provision and outreach, implementing an ambitious program that incorporates four health categories: disease prevention and control, family health, hygiene and environmental sanitation, and health education and communication. Because of their critical importance to community-level health delivery, HEWs are key partners in all EWNRA health and family planning interventions, including the CBD initiative. Women have access to free contraceptives at their local health post, and oral contraceptives, injectables, and single-rod implants are available after an initial counseling session with a HEW (Halperin 2014).

In addition to government support for and promotion of access to contraceptive methods, another point of entry into the public sector in recent years has been facilitated by non-governmental organizations. During the time fieldwork was conducted for this study, DKT International, an NGO, was engaged in a countrywide social-marketing campaign for its line of contraceptives. "Sensation" condoms and intrauterine devices (IUDs) were promoted through television commercials, billboards, and fliers that were highly visible throughout the country, from the capital's busiest intersections to the walls of rural health posts. DKT, which imported more than 32 percent of Ethiopia's contraceptives in 2011, has arranged with the Ethiopian government to procure its contraceptive commodities for the Health Extension Program (Olson and Piller 2013) and has also provided the contraceptives used in EWNRA's CBD programs.

OBJECTIVES

This study contributes to the limited evidence base for integrated PHE programs through a detailed case study of the Ethio-Wetlands and Natural Resources Association. The hope is to demonstrate the effectiveness of PHE as a developmental strategy and to provide a better

understanding of how integrated programs are delivered. Our case study of EWNRA was developed as part of a larger process evaluation. Unlike an impact evaluation, which measures outcomes in households and communities as a direct result of an intervention, the goal of the process evaluation was to describe an organization's activities and elucidate specific strategies that contribute to its success in implementing those activities. The evaluation identified EWNRA's strategies for working across sectors and assessed the extent to which integration occurs in program implementation.

METHODS

Qualitative data were collected during in-depth interviews (IDIs) and small-group interviews (SGIs) conducted in Ethiopia between October 2012 and January 2013. IDI participants included EWNRA staff (in EWNRA's Mettu field site and its Addis Ababa national office), community-level implementing partners, and the staff of the PHE Ethiopia Consortium. SGIs were conducted with PHE program beneficiaries. Twenty-five IDIs took place in January 2013 in Oromia Region, either in Addis Ababa or during a two-week field visit to Mettu, the *woreda* (district) that is the primary locus of EWNRA's PHE activities. Additionally, 12 beneficiaries of PHE programs in Mettu participated in one of two SGIs during the field visit. While EWNRA operates in 24 *kebeles* (villages, the smallest administrative unit in Ethiopia) in the Mettu *woreda*, most participants were recruited from the three rural *kebeles* closest to Mettu district's eponymous capital town.

The research team used purposive and snowball sampling to identify participants, using referrals from key informants from the PHE Consortium (national-level stakeholders) and EWNRA's national office staff to gain access to regional and local implementers who provided insight into how the PHE projects operated. Participants identified using this referral-based sampling technique reflected the wide variety of professionals and community members who collaborate on EWNRA's activities, including: EWNRA staff, a health extension worker, a development agent (a government-salaried, community-based agriculture expert), an *iddir* leader ("iddirs" are powerful social organizations within many Ethiopian communities), "model farmers," women's savings group members, a school director, district-level ministry officials, a member of a community Water and Sanitation Committee, and PHE peer educators and providers. Researchers from the Johns Hopkins Bloomberg School of Public Health conducted the English-language interviews in Addis Ababa. In Mettu, two researchers from nearby Jimma University were trained to conduct interviews in Afan Oromo, the local language. For both IDIs and SGIs, the research team developed semistructured question guides that were tailored to the expertise of each participant or group of participants.

For SGIs, a group of men and a group of women were recruited from three villages closest to the town of Mettu. The women were all participants in one of EWNRA's women's savings groups; the men were "model farmers," those whose households are identified by kebele administration, development agents, and HEWs as "early adopters" of agricultural innovations. Both SGIs took place at the EWNRA office in Mettu and were conducted in Afan Oromo.

Approval for this study was obtained from the Institutional Review Board (IRB) of the

Johns Hopkins Bloomberg School of Public Health and the ethics review board of the Ethiopia Health and Nutrition Research Institute. Verbal consent was obtained from all participants, and all IDIs and SGIs were digitally recorded after obtaining participant permission. Interviews were de-identified and translated by hand into English by the data collectors, and translated transcripts were reviewed by the research team as a whole. Analysis involved writing summary reports highlighting salient themes emerging from each transcript. These reports were discussed by the study team, and common themes and key findings across transcripts were collected. The Johns Hopkins research team conducted all analysis, with clarification from the local research team as necessary.

FINDINGS

In this section, we document EWNRA's family planning and environmental programs, focusing on EWNRA's cadre of community-based distributors of contraceptives, known in the community as "PHE providers."

Organizational Overview of EWNRA

The size and scope of EWNRA's activities have steadily increased. The organization currently implements integrated livelihood, health, family planning, and environmental interventions in Mettu, ranging from technical assistance for government offices to direct commodity provision for community members. Working closely with government district offices, EWNRA provides training and technical expertise for a variety of programs. At the community level, EWNRA builds partnerships with government-funded extension workers, including health extension workers (HEWs) and agriculture-focused development agents (DAs). Emphasizing common goals, EWNRA encourages these workers to share outreach responsibilities, ultimately increasing coverage for both health and environmental programs. EWNRA's own family planning initiatives—namely their community-based distributors (PHE providers)—support HEWs and DAs by further broadening access.

When describing the work of HEWs in relation to PHE programs, one HEW noted the benefits of a shared workload:

We work together. Whenever we are not there in the kebele for different reasons, [PHE providers] can give services such as family planning methods. Because we work together, the community accepts them. [Their] involvement ... facilitates my work and contributes to success. (HEW 1)

EWNRA also trains DAs to work with HEWs on issues related to family planning. One DA provided examples of areas outside his usual expertise in which he had received training:

I did activities related with health. I do not mean giving injections, but I work on awareness creation. I share with communities my knowledge and experience with issues related with health, like utilization of latrines, contraceptives, hygiene, and sanitation. I did these activities with EWNRA. I mobilize youth and adults to use condoms, which are available at PHE providers. (DA 1)

From their training, HEWs understand the environmental implications of some of their health interventions (for example, sanitation campaigns) and are able to promote healthy practices and contraception uptake based on their effect on household economic security. Participants reported that HEW messages now include information on agricultural and environmental campaigns (for example, terrace construction to prevent erosion). When asked what, in addition to health issues, HEWs discussed during home visits, one participant (who also served on her community's water and sanitation committee) spoke of the collaboration:

They usually talk about health, but they also sometimes speak about beekeeping and saving to earn a living in relation to family planning. Use of family planning is good for saving and improvement of lifestyle. They [HEWs and DAs] do share an agenda. (Water and Sanitation Committee member 1)

Given the large number of households for which development agents and health extension workers are responsible, sharing one another's messages can increase the reach of key health, family planning, environmental, and agricultural information.

Beyond fostering connections between government ministries, EWNRA develops and supports complementary PHE programs. PHE providers, peer educators, and club members are selected by their villages (which is considered an honor) and asked to serve as volunteers in their communities. PHE providers receive training from EWNRA and are linked with relevant local government experts. All of the cadres are volunteer-based (though PHE providers keep a percentage of the proceeds from the contraceptives they sell), with EWNRA training sessions, branded EWNRA products (e.g., T-shirts and hats), and community prestige serving as incentives. Messages disseminated by PHE personnel concern family planning, the environment, agriculture, health, nutrition, education, gender empowerment, and livelihoods.

PHE Providers' Appeal to Adolescents and Unmarried Individuals

Interview participants noted that many community members initially associated contraceptive access with the government-run health posts, where a broad range of family planning methods are available at no cost. Therefore, the introduction of community-based distributors (CBDs) who were selling contraceptive supplies was viewed with skepticism at first. PHE providers keep 50 percent of the proceeds from the sale of contraceptives, which are heavily subsidized. Some shop owners who were selected to be PHE providers spoke about this initial skepticism:

From the early beginning, before I got trained, I feared that people may not come to my shop. But what happened is not the same as what I feared. We did awareness creation on contraceptive use and its advantages in relation to health and population. People [now] come and ask me for condoms and pills. (PHE provider 1)

PHE providers collaborate with PHE peer educators and local HEWs to encourage both married and unmarried individuals to obtain subsidized contraceptives. Simultaneously, PHE providers educate community members on the connections between family size, community health, and environmental sustainability. All of these activities are sanctioned by the local government and social institutions, with which EWNRA collaborates closely throughout project planning and implementation. When PHE providers encounter more complex health problems,

they refer individuals to local HEWs to whom they regularly report. PHE providers appeal particularly to their community's younger, unmarried members. As one PHE provider said:

Adolescents buy condoms, even at night. The other thing is emergency pills that prevent pregnancy, which serve for 72 hours. [Married] women sometimes use emergency, but mostly unmarried young females use it. These unmarried women come here to buy emergency because they fear going to the health post, though it's free there. (PHE provider 2)

Although free contraceptives are provided at health posts, adolescents and unmarried women were hesitant to visit these locations, since going to a health post can signal to the community that they are sexually active. Thus, PHE providers offer a more confidential alternative for younger and unmarried individuals. Because most PHE providers had established their shops before they began participating in CBD programs, they are viewed as a private source for obtaining contraceptives. Watchful community members have no way of knowing whether a customer is buying contraceptives or some other commodity. PHE providers are generally no older than their mid-30s, thus ensuring that young people feel comfortable approaching them for assistance. As one PHE provider mentioned:

Particularly adolescents come to me for condoms and emergency pills. This is because of fear and stigma. The other thing is they don't fear me. They consider me their counselor. They ask me what to do if they engage in unprotected sex. Usually, boyfriends come to buy emergency for their girlfriends. (PHE provider 2)

After our research was completed, the research team learned through communication with EWNRA staff that reports were circulating about incorrect use of emergency contraception in the community. In response, Mettu's district health office discontinued provision of emergency contraceptives by both PHE providers and government HEWs to allow time to evaluate the reports.

PHE Providers' Relevance to Married Individuals

The perceptions of PHE providers as a secondary resource from whom married women could obtain contraceptives were mixed. In a small-group interview consisting of married mothers who also belonged to EWNRA-funded women's microcredit groups, participants viewed PHE providers as a welcome family planning resource, specifically for adolescents:

We don't need that [emergency contraception]. Adolescents need it. It is just for adolescents who want to hide themselves in this regard. They [PHE providers] give condoms, but we don't need condoms. Adolescents use condoms. But we like that it exists, because rather than seeing the suffering of our adolescents from transmittable diseases like HIV/AIDS and abortion, it is better to teach them emergency contraceptives and condoms and provide them too. But not for us, as we want to visit HEWs for such services. (Participant 7, female SGI)

A group of married male model farmers who, as a result of EWNRA's integrated family planning/environmental programs, had been educated about family planning and family-size issues, offered another insight. The men praised the PHE providers as a convenient means of accessing contraceptives closer to home, rather than having to travel to a health post. One farmer commented:

We were trained about family planning, also from a PHE provider. If we need to use these methods, we do not need to walk far on foot. They are nearby to our home as well, and different methods are there. We have condoms, pills, emergency pills to use. So, EWNRA told us all the advantages of family planning, and also provided us with the services nearby to our houses. (Participant 1, male SGI)

PHE providers were also seen as a safe source for married women seeking to replenish their supply of oral contraceptives at a more convenient location.

Finally, the experiences related by PHE providers and peer educators identified a category of married women for whom the PHE kiosks were especially helpful. Married women whose husbands were opposed to contraception or who resisted their wives' use of contraception could discuss and access contraceptives discreetly through these providers and educators.

Integrated Messages: PHE Peer Educators and Clubs

A large cadre of PHE peer educators support EWNRA's efforts at community-based distribution. Elected during village administrative meetings, these male and female peer educators are trained by EWNRA to promote family planning and to connect interested community members with PHE providers, encourage sustainable grazing practices, discourage deforestation, and educate individuals on a number of other topics. Their methods for message dissemination originate from standardized USAID training modules; however, the messages they deliver are adapted to Mettu's specific context, and emphasis is placed on drawing strong connections between family size, livelihoods, environmental degradation, and health.

The manner in which these educators approach family planning—as a reflection of households' goals of educating their children and being “food secure”—makes discussions about these topics less taboo and easier to relate to for a broader audience. A model farmer talked about how “integrated messaging” had opened an equitable dialogue on family planning between husbands and wives in his community:

Before EWNRA worked on these issues, there was no clear decision between husband and wife. Now that is already changed. They discuss together and they decide to use family planning together.... Now there are no families that plan to have six or seven children. Rather, they plan to have up to two or three children only. (Participant 2, male SGI)

Another young man, who serves as both a PHE provider and PHE peer educator, credited education and awareness-raising with creating a positive environment for family planning in his village:

There is no shame at all to buy condoms from a shop. At the beginning, some people felt ashamed to call it a condom, and instead they called it by names like “sock,” “boots,” and some said “pastels” [plastic bags]. But, nowadays, there is great transparency. They come to my shop and say “give me a condom” without any fear. Now, even girls are also coming to my shop to buy a condom. All changes came after we did awareness creation. (PHE provider 1)

The work of peer educators is complemented by PHE clubs, comprised of small groups of volunteers who deliver integrated messages through dramas presented at village meetings. Family size is often a topic of interest in these dramas. As described by one PHE club member:

According to the drama, I had eight children. We had inadequate terrain for plowing. Then, we were engaged in wood cutting to widen our plowing land, made charcoal to sell as an energy source, plowed on wetlands and drained them away. We couldn't afford to send our children to school. At the conclusion of the drama, we stated that we shouldn't deplete our forest, and we should keep our wetlands and have few children so we can afford to cover their life expenses. (PHE club member 1)

The themes of this drama reflect a perceived link among participants between small family size, environmental conservation, and household economic security. Indeed, livelihoods and "planning ahead" financially play a critical role in nearly all Ethiopian PHE programs. Responding to community demand, EWNRA and many other organizations fund microcredit groups and support income-generating activities, delivering PHE messages along with economically focused training sessions. As one PHE Ethiopia Consortium (EC) staff member acknowledged:

Most people when you talk to them in Ethiopia, the reason they want fewer kids is because they want to be able to pay for their kids' schooling, they want to be able to feed them properly, they want to give their children land inheritance, and if they have many then they don't really have enough to give them a significant enough parcel that they could sustain themselves. They're a lot of times concerned with economics and inheritance. (PHE-EC staff 1)

PHE clubs raise family planning issues for public discussion, and community members may feel comfortable approaching PHE club members, peer educators, or providers because these individuals have been selected by the community. As one club member recalled:

Some mothers will experience excessive bleeding following use of contraceptive methods such as pills or Depo Provera.... I remember one family with such experience. She told me that because of her bleeding, her husband hated her. She came to my home after the drama. We advised her to start using condoms because she has excessive bleeding because she uses Depo. She stopped taking Depo and replaced with condoms. Then, she gave witness to me that she is now in peace with her husband too. (PHE club member 1)

DISCUSSION

EWNRA's use of community-based distribution (CBD) capitalizes on a strategy of contraceptive distribution long familiar to the family planning community. Our findings provide compelling evidence that the integrated population, health, and environment (PHE) strategy has facilitated acceptance of CBD as a family planning resource in the communities in which EWNRA works. Effectively documenting and evaluating this approach poses some challenges, however, as a result of complexities in programs and partnerships that arise from multisector project implementation.

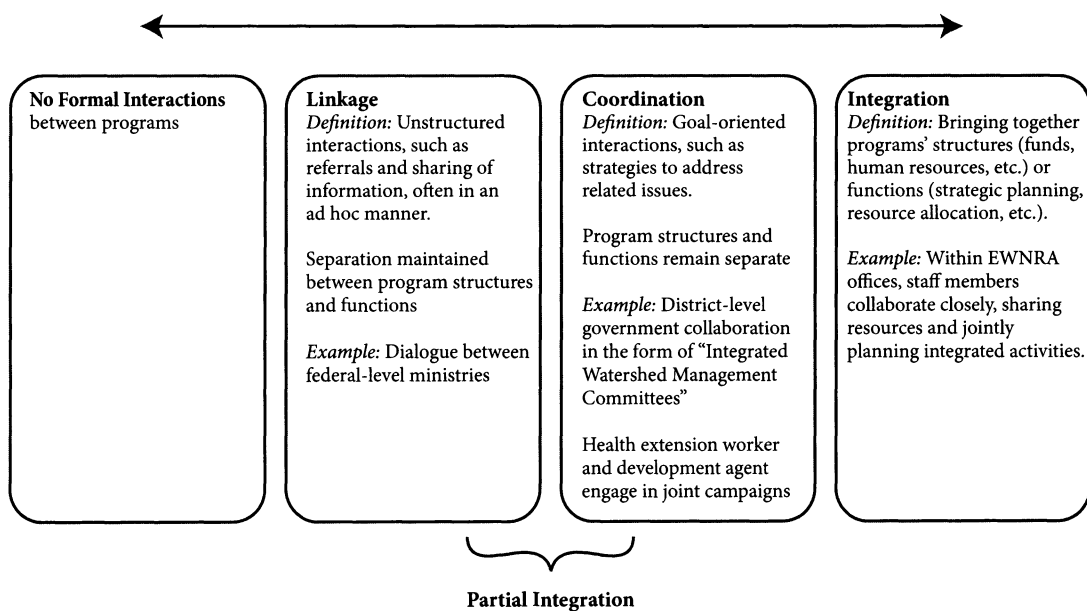
These multisector efforts—occurring at multiple levels within and between different organizations—are broadly characterized as "integration." EWNRA's integrated programmatic model is especially difficult to conceptualize, incorporating community-based distributors as PHE providers and peer educators, as well as government and nongovernment employees in the environmental, health, and livelihoods sectors. With this in mind, we reviewed the wider public health literature for useful frameworks that assess integrated programs. By adapting one

of these frameworks to EWNRA's context, we hope to improve understanding of EWNRA's programmatic model, allowing for replication and providing insight into the external factors that mediate EWNRA's success in implementing PHE programs.

In the literature, the term "integration" is used to explain the relationships within and between various complex systems. Specific definitions, however, are as diverse as the relationships they attempt to describe. Contandriopoulos and colleagues (2003) describe health-sector integration as a "common structure between independent stakeholders." Leutz (1999) views cross-sector integration as the effort to connect one system (health) to other "human service systems" in order to improve outcomes. Despite the cross-sector relevance of Leutz's definition, we find the extensive analysis by Shigayeva and colleagues (2010) most applicable to PHE programs in Ethiopia.

Shigayeva and colleagues' (2010) framework examines integration in the context of tuberculosis and HIV-treatment programs. Most useful from this analysis is a framework for assessing integrated health programs, complete with a spectrum of interdependence. Program components can fall into one of four categories along a continuum: (1) no formal integration, (2) linkage, (3) coordination, and (4) integration. Figure 1 is a diagrammatic representation of this continuum, modified to fit EWNRA's programs. This continuum offers a useful scale for qualitatively assessing the extent of integration within EWNRA and the extent of integration that EWNRA promotes between external ministries. Within EWNRA, there is full integration between several in-house programs: EWNRA's own staff members collaborate closely with one another, sharing financial and human resources and jointly organizing project planning and

FIGURE 1 Integration continuum indicating range of program components from "No formal interactions" to full "Integration"



SOURCE: Adapted from Shigayeva et al. (2010), with programmatic examples from the work of the Ethio-Wetlands and Natural Resources Association (EWNRA).

evaluation. At the community level, PHE peer educators and providers are educated across multiple areas as a result of these efforts at integration.

Although full integration occurs within EWNRA's district office, the organization facilitates a different level of collaboration between outside government offices. Efforts to unite the work of these external programs result in "coordination" as defined by Shigayeva and colleagues (2010). Coordination incorporates some responsibility-sharing and pre-planned common activities. At the district level, for example, EWNRA's support of Integrated Watershed Management Committees brings together leaders in agriculture, education, government, and health. At the village level, several stakeholders reported that EWNRA-sponsored training encourages health extension workers and development agents to participate in joint projects and deliver messages that would traditionally fall outside their sector-specific responsibilities.

In EWNRA's integration efforts, the PHE message of "healthy communities and a healthy environment" serves as the shared vision around which previously disparate programs build what Shigayeva and colleagues (2010) call "goal-oriented interactions." EWNRA uses this approach when training development agents to deliver family planning messages to male farmers, reaching a population that would traditionally have little interaction with the health sector. Further, the incorporation of environmental and livelihood themes into family planning messages results in greater acceptance by male heads of household, who are traditionally reluctant to accept family planning. PHE providers, who themselves coordinate with both health extension workers and development agents, reinforce these integrated messages and boost demand for family planning services.

Full integration in EWNRA's programs was most often apparent at the household and individual levels, where implementers and beneficiaries alike have a more direct dependence on their local environment and where the practical linkages between population, health, and environment are readily visible. Continuing up through village, district, regional, and national administrative levels, full integration shifts to collaboration and then linkage, with targeted coordination across offices serving as a more natural mechanism for interaction. EWNRA's success in promoting integration stems from an ability to promote, at each administrative level, the most effective strategy between government sectors that were previously separate. To implement their programs effectively, these offices do not have to fully integrate, but rather collaborate on what is necessary to improve services for users and enhance the efficiency of providers.

Study Limitations

Several limitations are inherent in this study's design. Researchers gained a clear picture of EWNRA's complex intervention model, including key actors, communication strategies, technical assistance, and commodity provision, but this broad programmatic focus meant that impact was not comprehensively measured. Financial information—including NGO and government budgets, beneficiaries' income, and regional economic data—were not included. This was because any meaningful statements regarding "cost-effectiveness" would require a much larger-scale assessment of impact, which fell outside the scope of our process evaluation. Efforts are underway to devise research tools that could be used in a comprehensive impact evaluation of EWNRA's population, health, and environment programs, and research from our study has provided key information that will aid in those efforts.

CONCLUSIONS

The effects of a community's rapid population growth on the surrounding environment are most immediately felt by the local population, often through adverse effects on the household economy and food security as a result of overfishing, land exhaustion, or deforestation. Integrated population, health, and environment (PHE) programs offer the opportunity to tackle this negative cycle from both the population and environment angles, taking measures to promote the health of communities by providing adequate family planning resources and simultaneously promoting environmental health through conservation and alternative income-generating activities. For women, men, and young people in hard-to-reach areas, the community-based distribution (CBD) of PHE programs can enhance access to contraceptives. Moreover, in communities where contraceptive use is less accepted, the environment is a common denominator that connects family size and health with the household economy. In particular, addressing household economic security is a powerful tool for building support for family planning among men. In rural settings where economic security is tied to the land, environmental-rehabilitation programs that operate in conjunction with family planning initiatives can holistically and collaboratively overcome a community's obstacles to development. This understanding of the links between population and environment, already widely accepted at the community and individual levels, must now be reflected among development implementers and federal ministries.

Recognition of and enthusiasm for integrated programs are building. At the 2013 International Conference on Family Planning in Addis Ababa, PHE innovator Blue Ventures (a conservation-focused NGO) was presented with an Excellence in Leadership for Family Planning (EXCELL) award by the Bill and Melinda Gates Institute for Population and Reproductive Health for its work in Madagascar on integrating reproductive health services with conservation and livelihood projects (International Conference on Family Planning 2013). Renewed global interest in climate and environmental issues offers an opportunity for family planning implementers to collaborate with colleagues from other sectors to build partnerships and offer programmatic support. At the same time, global initiatives like Family Planning 2020's (FP2020) commitment to addressing women's and girls' unmet need for contraception present an opportunity for innovation in family planning as countries and implementers seek to provide an additional 120 million new users with voluntary access to family planning by 2020 (Brown et al. 2014; Potts 2014). Population, health, and environment programs creatively integrate established family planning strategies, such as community-based distribution of family planning commodities, with other programs for community development, resulting in healthy, climate-resilient communities and ecosystems. Implementers and donors have sought to effectively evaluate these broad programs, drawing attention to the need for further research and documentation of best practices. This article represents an important step toward a more robust method for evaluating PHE programs.

REFERENCES

- Ande, Oluyinka, Oladimeji Oladepo, and William R. Brieger. 2004. "Comparison of knowledge on diarrheal disease management between two types of community-based distributors in Oyo State, Nigeria," *Health Education Research* 19(1): 110–113.
- Anderson, Maren C. 2010. "History and future of Population-Health-Environment programs: Evolution of funding and programming." Minneapolis: University of Minnesota.
- Bonnardeaux, David. 2012. "Linking biodiversity conservation and water, sanitation, and hygiene: Experiences from sub-Saharan Africa." Washington, DC: Conservation International and Africa Biodiversity Collaborative Group. https://www.k4health.org/sites/default/files/ABCG%20Conservation%20and%20WASH_final.pdf. Accessed 23 September 2013.
- Bremner, Jason. 2009. "Population, health, environment networks: East Africa PHE network." Population Reference Bureau presentation.
- Brown, Win, Nel Druce, Julia Bunting, et al. 2014. "Developing the "120 by 20" goal for the Global FP2020 Initiative," *Studies in Family Planning* 45(1): 73–84.
- Carr, David. 2008. "Population, health and environment in Africa and Asia: An evaluation of WWF's USAID and Johnson & Johnson-supported projects." Washington, DC.
- Central Statistical Agency (CSA) [Ethiopia]. 2009. "Statistical abstract of Ethiopia." Addis Ababa, Ethiopia.
- Central Statistical Agency (CSA) [Ethiopia] and ICF Macro. 2011. *Ethiopia Demographic and Health Survey: Preliminary Report*. Addis Ababa, Ethiopia: Central Statistical Agency, and ICF Macro: Calverton, Maryland. <http://dhsprogram.com/pubs/pdf/PR10/PR10.pdf>. Accessed 6 August 2014.
- Contandriopoulos, André-Pierre, Jean-Louis Denis, Nassera Touati, and Charo Rodriguez. 2003. "The integration of health care: Dimensions and implementation." Working paper. Montréal, Canada: Université de Montréal.
- D'Agnes, Leona, Heather D'Agnes, J. Brad Schwartz, Maria Lourdes Amarillo, and Joan Castro. 2010. "Integrated management of coastal resources and human health yields added value: A comparative study in Palawan (Philippines)," *Environmental Conservation* 37(4): 398–409.
- Ethio-Wetlands and Natural Resources Association (EWNRA). 2013. "Outcomes and Impacts of the EWNRA Mettu and Alge-Sachi Woredas' Integrated Watershed Management Project (2005-2013)." Addis Ababa, Ethiopia.
- Gazi, Rukhsana, Alec Mercer, Jahanara Khatun, and Ziaul Islam. 2005. "Effectiveness of depot-holders introduced in urban areas: Evidence from a pilot in Bangladesh," *Journal of Health, Population, and Nutrition* 23(4): 377–387.
- Haile, Sahlu. 2004. "Special report: Population, development, and environment in Ethiopia," *Environmental Change and Security Program Report* (10): 43–51.
- Halperin, Daniel T. 2014. "Scaling up of family planning in low-income countries: Lessons from Ethiopia," *The Lancet* 383(9924): 1264–1267.
- International Conference on Family Planning. 2013. "Blue Ventures, United Kingdom." Addis Ababa, Ethiopia. <http://www.fpconference2013.org/program/excell-awards/blue-ventures-united-kingdom-for-its-work-in-madagascar/>. Accessed 13 January 2014.
- Janowitz, Barbara, Jane Chege, Andrew Thompson, Naomi Rutenberg, and Rick Homan. 2000. "Community-based distribution in Tanzania: Costs and impacts of alternative strategies to improve worker performance," *International Family Planning Perspectives* 26(4): 158–160, 193–195.
- Katz, Karen R., Caroline G. West, Fode Doumbia, and Fatoumata Kane. 1998. "Increasing access to family planning services in rural Mali through community-based distribution," *International Family Planning Perspectives* 24(3): 104–110.
- Kleinau, Eckhard, Odile Randriamanajara, and Fred Rosensweig. 2005. "Healthy people in a healthy environment: Impact of an integrated population, health, and environment program in Madagascar." Washington, DC: Environmental Health Project. https://www.k4health.org/sites/default/files/w09_Kleinau_madagascar-phe.pdf. Accessed 13 November 2012.
- Kleinau, Eckhard, Fred Rosensweig, and Fran Tain. 2002. "Integration of health, population and environment programs in Madagascar." Washington, DC: Environmental Health Project. https://www.k4health.org/sites/default/files/crc02_EH_MadagMidtermRep.pdf. Accessed 13 November 2012.

- Leutz, Walter N. 1999. "Five laws for integrating medical and social services: Lessons from the United States and the United Kingdom," *The Milbank Quarterly* 77(1): 77–110.
- Ministry of Finance and Economic Development (MoFED) [Ethiopia]. 2010. "Ethiopia: 2010 MDGs report: Trends and prospects for meeting MDGs by 2015." Addis Ababa, Ethiopia. http://www.phe-ethiopia.org/pdf/MDGs_Report.pdf. Accessed 10 September 2012.
- Mohan, Vik and Tess Shellard. 2014. "Providing family planning services to remote communities in areas of high biodiversity through a population-health-environment programme in Madagascar," *Reproductive Health Matters* 22(43): 93–103.
- Olson, David J. and Andrew Piller. 2013. "Ethiopia: An emerging family planning success story," *Studies in Family Planning* 44(4): 445–459.
- Patterson, Kristen P. 2007. "Integrating population, health, and environment in Ethiopia." Washington, DC: Population Reference Bureau. <http://www.prb.org/pdf07/phe-ethiopia.pdf>. Accessed 10 December 2012.
- Phillips, James F., Wendy L. Greene, and Elizabeth F. Jackson. 1999. "Lessons from community-based distribution of family planning in Africa." Working Paper No. 121. New York: Population Council.
- Potts, Malcolm. 2014. "Getting family planning and population back on track," *Global Health: Science and Practice* 2(2): 145–151.
- Sebhatu, Alula. 2008. "The implementation of Ethiopia's Health Extension Program: An overview." Addis Ababa, Ethiopia: Ethiopia Good Practice. <http://www.ppdafrica.org/docs/ethiopiahep.pdf>. Accessed 10 September 2012.
- Shigayeva, Altynay, Rifat Atun, Martin Mckee, and Richard Coker. 2010. "Health systems, communicable diseases and integration," *Health Policy and Planning* 25(Suppl. 1): i4–i20.
- United Nations (UN). 1992. "Agenda 21." Rio de Janeiro, Brazil: United Nations Conference on Environment and Development. <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>. Accessed 2 December 2012.
- United Nations Department of Economic and Social Affairs (UNDESA). 2013. *World Population Prospects: The 2012 Revision*. New York. <http://esa.un.org/wpp/>. Accessed 14 January 2014.
- World Bank. 2007. "Capturing the demographic bonus in Ethiopia: Gender, development, and demographic actions." Report No. 36434-ET. http://www-wds.worldbank.org/external/default/WDSContentServer/WDS/IB/2007/08/31/000310607_20070831093651/Rendered/PDF/364340EToptmzd.pdf. Accessed 10 September 2012.
- You, Gene Jiing-Yun and Claudia Ringler. 2010. "Hydro-economic modeling of climate change impacts in Ethiopia." Discussion Paper No. 00960. Washington, DC: International Food Policy Research Institute.

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