

# **ECOHEALTH MIDTERM EVALUATION**

GORONGOSA RESTORATION PROJECT  
GORONGOSA NATIONAL PARK

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**USAID**  
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## Acronyms

ACIS	Commercial Association of Beira
AEW	Agricultural extension workers
ANC	Ante-natal care
APE	Community Health Worker ( <i>Agente polivilante elementar</i> )
AIDS	Acquired immunodeficiency syndrome
ARV	Antiretrovirals
BCC	Behavior change communications
BZ	Buffer zone
CB	Community-based
CEC	Community Education Center
CHASS-SMT	Clinical HIV/AIDS Systems Strengthening in Sofala, Manica, Tete
CF	Carr Foundation
CHW	Community health worker
CLC	Community leadership council
DPS	Provincial Health Directorate
FAO	United Nations Food and Agriculture Organization
FFS	Farmer Field School
FP	Family planning
GBV	Gender-Based Violence
GGE	Greater Gorongosa Ecosystem
GHI	Global Health Initiative
GRM	Government of the Republic of Mozambique
HAI	Health Alliance International
HIV	Human immunodeficiency virus
IGA	Income-generating activities
IPS	Integrated Package of Services
IPT	Intermittent preventative therapy for malaria
GNP	Gorongosa National Park
GRP	Gorongosa Restoration Project
LTA	Long-Term Agreement
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MINAG	Ministry of Agriculture
MMAS	Ministry for Women and Social Action
MNCH	Maternal, newborn and child health
MSGH	Mount Sinai Global Health
NASA	National Aeronautics and Space Administration
NGO	Non-Governmental Organization
NRM	Natural Resource Management
PSI	Population Services International
OVC	Orphans and vulnerable children
PEPFAR	President's Emergency Plan for AIDS Relief
PES	Economic and Social Development Plan
PHE	Population-health-environment
PLHIV	Persons living with HIV
PMP	Performance Monitoring Plan
PMTCT	Preventing Mother-to-Child Transmission

QA	Quality Assurance
RH	Reproductive Health
SDAE	District Services for Economic Activities
SDPI	District Services for Planning and Infrastructure
SDSMAS	District Services for Health, Women and Social Welfare
TB	Tuberculosis
TBA	Traditional Birth Attendant
USAID	United States Agency for International Development
USG	United States Government
WASH	Water, hygiene and sanitation
WLSA	Women and Law in Southern Africa

## Background

### Gorongosa Restoration Project (GRP)

Gorongosa National Park (GNP) is located in the central Mozambique province of Sofala, surrounded by 6 districts (Gorongosa, Nhamatanda, Cheringoma, Muanza, Dondo and Maringue). Historically known for its diverse plant and animal populations, the park and its wildlife were devastated by the country's many years of war. To help restore GNP's 400 sq. km and associated ecosystem to its former vital state, in 2008, the Gregory C Carr Foundation (CF), entered into a 20-year Long-Term Agreement (LTA) with the Government of the Republic of Mozambique (GRM) to undertake the Gorongosa Restoration Project (GRP), working hand in hand with the Ministry of Tourism. Mount Gorongosa is a critical component of the regional ecosystem and in 2010 this area was officially linked to the national park. Taking Mount Gorongosa into account, the number of residents in the overall BZ has been estimated at between 150,000– 200,000 people.

Key direct threats to the park, some interrelated (see below) include:

- Encroachment on protected areas
- Slash-and-burn agriculture
- Illegal logging
- Poaching
- Pollution from illegal alluvial gold mining

In addition to increasing population growth, important drivers of the above conservation threats include:

- High levels of poverty in the surrounding communities
- Strong reliance on natural resources <sup>1</sup>

GRP's vision is biodiversity conservation that is actively linked with human and economic development to ensure that conservation benefits are locally realized and sustainable. Correspondingly, GRP's core mission is the long-term protection of the Greater Gorongosa Ecosystem (GGE) for the benefit of its local residents. GRP's mission is being realized via two interrelated efforts: restoration of the Park and sustainable development of surrounding communities, in particular those in the park's Buffer Zone (BZ) (see Annex 1 for a map and boundaries of the Park including the 16 BZ communities).

Key objectives of Park restoration are: i) protection of the Park's biodiversity and natural ecosystem processes, and ii) regional poverty alleviation through ecotourism and other beneficial influences of the Park. The underlying assumption supporting these objectives is that a healthy, diverse ecosystem will provide an important foundation for economic and social development. Specifically, GRP is founded upon the belief that a sustainable tourism industry dedicated to maintaining ecological integrity within the Park and surrounding areas will stimulate economic growth, helping alleviate regional poverty. In this regard, successful management of the Park is viewed as a key economic catalyst for the region and country as

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<sup>1</sup> Both fires and poaching are due, in part, to conditions of local poverty as fires are generally started to clear new land (to plant food staples, sometimes because the old land is depleted due to over-farming and/or lack of crop rotation) or, to smoke out small animals to hunt and eat. Poached game meat is mainly for home consumption and small-scale local sale due to little availability of alternative meat-based protein sources.

a whole, and also a means of saving the region's ecosystem,<sup>2</sup> the key livelihood basis for residents in the park's BZ. To additionally promote sustainable development and poverty reduction of BZ communities, GRP aims to support various other social and economic interventions. To these ends, GRP organized itself into 7 component areas/Departments: Community Relations, Conservation Agriculture, Conservation, Scientific Services, Operations, Media and Communications (see Annex 2).

While all 7 Departments are considered critical to successfully achieving GRP's overall goal, each has its own focus. A key role of the Community Relations Department is to establish and maintain close relations between the Park and bordering areas and to help coordinate district planning with Park activities. The Department also coordinates with national and international NGOs that work or are interested in working with targeted communities. A Department responsibility directly linked to ecotourism and community development is helping to evaluate sustainable development projects implemented by BZ communities with the portion of Park revenue funds that they receive (see below). Communications with BZ communities and other areas throughout the region is facilitated through liaising with Provincial authorities. The Department meets its GRP responsibilities through four specific programs: Conservation Education, Economic Development, Conservation Agriculture and Ecohealth - the latter being the focus of this evaluation.

## Ecohealth Program

GRP's initial involvement with health was centered on the Park's clinic for employees that continues to function to date. GRP's early strategy included establishing clinics (and schools) all around the Park but given the resource requirements, this was modified. Instead, regarding health, the Project provided support for a mobile clinic to extend access to services in remote BZ communities, a key need identified after discussions with Provincial health officials. GRP also helped one BZ community, Vinho, establish a clinic in their community.

Provincial level data available at that time revealed that the biggest health problems in the area contributing to poverty were malaria, diarrhea, respiratory infections, malnutrition and HIV/AIDS. In 2009, Mount Sinai's Global Health (MSGH) Program joined GRP as a health partner, initially conducting focus groups in 9 BZ villages to identify local health priorities. That effort highlighted human animal conflict as a major community-felt issue, diarrhea and malaria as major community-perceived health problems, and access to healthcare as a major barrier to becoming healthy communities.

Based on focus groups findings and additional meetings with Provincial (DPS) and District (DDS) health officials (and NGOs working at that time in the Province), GRP and MSGH further fine-tuned the strategy for supporting health to replicate what other NGOs were doing elsewhere, i.e., addressing the health needs of communities by supporting and aiding implementation of the GRM's most recent national health policy<sup>3</sup>, plan<sup>4</sup> and implementation

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<sup>2</sup> The Greater Gorongosa Ecosystem (GGE) is defined as the Park and all of its surrounding areas of land that are connected to its landscape, in particular with regard to water resources, wildlife corridors, its economic activity and social and cultural affinities and community structures.

<sup>3</sup> The national health policy was inspired by the country's Action Plan for the Reduction of Poverty as well as its Economic and Social Plan. It focuses on strengthening primary health care, improving infrastructure and increasing community-level engagement.

<sup>4</sup> The goal of the plan was/is to improve the health status of the Mozambican population, targeting vulnerable groups, especially women and children through integration, quality, and expansion of access to health care

model. The latter involves an integrated package of services (IPS) at four levels. The community-level package includes health education messages about antenatal care (ANC) visits, early warning signs of complicated pregnancies (for immediate referral) and malaria case management; a minimal package at first-level health centers includes prevention of mother-to-child HIV transmission (PMTCT) services, family planning (FP), vaccinations and referral for complicated malaria and labor.

In 2008, the Park initiated a community-wide survey of the entire BZ to gather data for measuring change in poverty levels and community development over time, as a result of Project efforts in the area. That data collection effort became cost-prohibitive but the next year, in August 2010, MSGH initiated a comprehensive health and environment survey of 9 communities (6 in Gorongosa and 3 in Nhamatanda Districts), designated as “Ecohealth” communities within the BZ. Every woman age 15-49 years old in each of these 9 communities was asked to participate in the survey.<sup>5</sup> The purpose was to capture baseline data on indicators considered relevant for evaluating the impact of GRP support for their new health strategy, in particular, MSGH support for revitalization of the government’s Program for Community Health Workers/ *Agentes Polivalentes Elementares* (CHWs/APEs), considered by the MOH to be a community-level extension of the national health system.

MSGH funding at that time came from a number of sources including Bristol-Myers Squibb and private donors. A particular interest of the MSGH was/is improving maternal, neonatal and child health (MNCH) – important needs in the area as evidenced by the baseline findings and also priorities of the GRM (see below). To that end, MSGH provided support to “matrons”, formerly Traditional Birth Attendants, whose modified role under the national health plan focused on getting pregnant women to ANC services and delivering in a designated health facility.

To increase financial support for health activities, complementing CF, MSGH, and GRM inputs, in 2011 GRP worked with USAID to develop a Cooperative Agreement (No. 656-A-00-11-00075-00) entitled “HIV prevention and care services to the Park's buffer zone communities.” Details of the agreement derived in part from a 2008 joint GRP/USAID needs assessment conducted in BZ communities that targeted HIV/AIDs, a key health issue in the Province and focus of USG support. The new funding aimed to help achieve GRP’s goals in ways consistent with and contributing to the GRM’s conservation and development goals, as well as the USG’s Global Health Initiative (GHI) Strategy for Mozambique (2011-2015).<sup>6</sup> GRP was a good candidate for this funding source as GHI focuses on three provinces, including Sofala, that meet specific criteria.<sup>7</sup>

Reflecting GRP’s early history of funding for health, described above, Ecohealth continued to provide support to mobile services, matrons and APEs during its first year of USAID-funding, as a way of delivering the *community level* ISP package. In keeping with the MOH model, community workers, in turn, contribute to utilization of *first level* health center services.<sup>8</sup> Over time, Ecohealth evolved to more comprehensively contribute to GRM health goals by bringing additional primary level health services to BZ communities around GNP. Specifically,

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services. Of relevance to Ecohealth’s objectives, in 2009, the MOH developed a strategy to include gender equality in the health sector.

<sup>5</sup> The survey was completed in August 2012.

<sup>6</sup> GHI aims to contribute to the GRM priority goal of reducing maternal, newborn, and child mortality by 2015.

<sup>7</sup> Selection criteria included: i) Demonstrated MNCH and HIV need, ii) High disease, iii) Poor health infrastructure and few human resources, iv) Provincial capacity to respond, v) Existing USG platforms and potential for synergy, vi) Ability to demonstrate impact.

<sup>8</sup> Expanding first level facilities is a MOH goal, described elsewhere herein.

in November 2011, a Population, Health and Environment (PHE) technical advisor joined the team and has since then functioned as the Ecohealth Program Manager.<sup>9</sup> After assessing the original USAID proposal assumptions, availability at that time of local partners and results from the MSGH baseline survey, in December 2011, some useful revisions were made to Ecohealth's annual activities. A description of these changes, a newly developed conceptual framework and revised Program goal and objectives were included in Ecohealth's year 2 USAID workplan.

One major change was limiting the provision of community-level health services to Gorongosa District only, instead of operating in both Gorongosa and Nhamatanda Districts. This change avoided overlapping efforts as UNICEF had begun support for a health outreach program in Nhamatanda. This reduced Ecohealth's focal communities from 9 to the 6 from the baseline survey (Mbulawa, Nhanguo, Nhaengee, Nhancuco, Mussicadzi II and Massala). The population of these 6 in 2011 was estimated to be approximately 12,000, or about 10% of the BZ population.<sup>10</sup> An advantage of the reduced focus was that Ecohealth could work more intensively on building solid relationships with Gorongosa District health, social welfare and agriculture authorities for Program success and future sustainability.

A second significant change was reorienting Program activities more in keeping with an integrated PHE approach that supports cross-sectorial collaboration and coordination, linking population, health, livelihood and environmental conservation actions for positive outcomes in all, particularly in biodiversity-rich areas. Improvement of women's reproductive health (RH) is a key feature of PHE initiatives, always but not limited to support for FP interventions. The hope was that by emphasizing an integrated approach, this would lead to more active involvement of a broader segment of society of target BZ communities, as has been demonstrated in PHE initiatives elsewhere in the world.

To this end, the Program revised its conceptual framework to more clearly illustrate the linkages between lack of healthcare access and alternative livelihoods, food insecurity and women's disempowerment and how each of these was threatening achievement of Ecohealth's /GRP's overall goal (see Annex 3). In turn, the Program reorganized its major activity types to align with the new framework. The underlying logic of the new conceptual framework was that under conditions of food insecurity, communities are more likely to engage in unsustainable use of natural resources just to produce enough food to subsist. Furthermore, poor farming techniques reduce the quality of the soil that leads to further food insecurity. Also, natural resources may be used unsustainably to provide otherwise lacking income for basic necessities including food, medication and transport to markets and health facilities, among others.

## Ecohealth Goals/Objectives

In keeping with GRP's overall aim, the current vision of the Ecohealth Program is to achieve a vibrant Greater Gorongosa Ecosystem (GGE). The Program's stated goal is *"to reduce destructive human practices that are threatening the restoration of the Greater Gorongosa Ecosystem (especially poaching, logging, uncontrolled fires) by offering BZ communities alternative livelihoods, improving food security and increasing access to and utilization of*

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<sup>9</sup> The tour of duty of the current USAID-funded PHE technical advisor ends this month; her position will be taken up by the current Program assistant who will be aided technically by a new (Program-funded) PHE technical advisor.

<sup>10</sup> In these 6 communities, 1232 women of reproductive age were interviewed for the baseline survey.



*essential health services and family planning.*” Under its USAID funding, Ecohealth has identified three specific objectives per each of two major components, outlined below:

### **Component 1: Prevention of HIV/AIDS**

- Increase access and utilization of HIV/AIDS preventative behaviors
- Increase access and utilization of reproductive health information, products and services
- Increase awareness of Mozambican child protection and domestic violence laws and sensitize communities to the benefits of empowering girls to continue their education and delay marriage

The Program is engaged in 6 specific activities (considered its “full package”) to achieve these three objectives:

- Matron Program
- CHW/APE Program
- Mobile clinics
- Co-management health committees (formerly CLCs)
- Prevention of gender-based violence
- HIV workplace prevention effort for GRP staff

Specific health interventions supported as part of the “full package” include HIV counseling and testing, FP, ante and postnatal care, counseling parents on danger signs for childhood diseases, and promoting facility-based births, mosquito nets and home water treatment.

### **Component 2: Serving Orphans and Vulnerable Children (OVCs)**

- Increase OVC and caregiver's access to preventative health services as well as community-based care and treatment of the most common diseases
- Improve OVC and caregiver's food security through introducing household vegetable gardens, animal husbandry, providing nutrition education and promoting conservation farming techniques to increase crop yields
- Provide OVCs and caregivers with income generating alternative livelihood techniques for economic strengthening

To achieve Component 2 objectives, Ecohealth supports another 3 activities:

- Improved food security and nutrition for vulnerable populations
- Economic strengthening for vulnerable populations through income-generating activities (IGA)
- Providing necessary health services to vulnerable communities

To achieve Program synergies and its overall goal, Ecohealth revised its workplan, integrating a number of otherwise vertically delivered rural health outreach and environmental conservation interventions. Specifically, in each of the 6 target communities, the holistic PHE package was to be provided including health, food security, alternative livelihoods, and women and girls empowerment activities, emphasizing the most vulnerable groups. The Program's behavior change communications (BCC) strategy was also integrated, incorporating FP and HIV with conservation farming and livelihoods messages, to the extent appropriate. The goal was to have each cadre of community-level volunteer involved in all PHE aspects of the Program so that messages would be continuously reinforced and the

benefits of integration continuously strengthened. To this end, Program-supported health workers were trained how to talk to others about the importance of conservation farming and alternative livelihoods. Correspondingly, GRP's environmental educators and other Community Relations staff were sensitized about the importance of FP, HIV prevention, facility-based births and the dangers of early pregnancy.

In 8 other communities (Dassa, Chitunga, Nhambirira, Muazunguni, Zualamambo, Muorombodzi, Chionde, Nhandemba) Ecohealth planned to support additional APEs, as requested by the MOH.<sup>11</sup> These areas also benefit from mobile clinics organized by the DDS, as well as participation in the prevention of gender-based violence (GBV) and prevention of early marriage activities.<sup>12</sup> Additionally, Ecohealth planned to produce and help sell local crafts for income generation for its trained matrons.



**Figure 1 Gorongosa district nurses during an APE review meeting at the PNG's Community Education Center.**

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<sup>11</sup> Recently, Djuchendje was added as an Ecohealth community in response to a MOH request to support an additional 5 APEs including from this community.

<sup>12</sup> No baseline survey data exist for these communities.

## Evaluation Purpose

This internal evaluation aims to highlight what Ecohealth has achieved to date; whether implementation is on track; how well it is being implemented; how it is perceived and valued and whether expected results are occurring (see Annex 4 for evaluation SOW). Specific questions the evaluation was designed to answer are:

1. To what extent is Ecohealth reaching its objectives?
2. Do any specific activities indicate a best practice?
3. Does Ecohealth have monitoring and evaluation (M&E) systems in place to measure whether at the end of its Program life intended results have been reached?
4. What is the most strategic way to incorporate issues of food security and nutrition into the second half of USAID Program funding?
5. How much of the BZ would Ecohealth need to cover to have desired environmental conservation and health impact?
6. What conservation measure should be used to measure the desired impact?
7. Is everything possible being done to ensure that Program efforts are sustainable in the future?
8. To what extent is Ecohealth leveraging existing opportunities for integrating PHE elements?
9. Is the Program spreading itself too thin by engaging in so many spheres in health?
10. Is there sufficient evidence to show potential donors that it is worth fundraising to scale it up to reach other districts and communities in the buffer zone?

The findings will be used as a basis for internal discussion and reflection regarding past performance, challenges, opportunities and future direction. It is an opportune time for such reflection as the tour of duty of the PHE advisor (Program Manager) ends in October 2013, a new Community Relations Director has just come on board; a new MSGH funding source may potentially become available; GRP's USAID Biodiversity grant is being evaluated and GRP's Conservation Agriculture Director has recently been hired. The latter in particular should increase potential for internal/cross-Department collaboration and enable Ecohealth to more actively engage in Component 2 activities.

## Evaluation Methods

The evaluation including report writing was conducted over a 2-month period using a mixture of data collection methods:

- Desk review of baseline survey findings (census of 9 villages);
- Desk review of project output data (from monitoring databases);
- Desk review of project reports/presentations;
- Group and individual interviews with beneficiaries and key stakeholder informants during a field visit (August 14<sup>th</sup> -23<sup>rd</sup>, 2013).

Key informant and group interview persons included:

- GRP staff from different Departments (Senior management, Conservation, Scientific Services, Community Relations)
- Government health officials (District and Provincial levels including the Chief Medical Doctor of Vila Hospital),
- Local health workers/representatives (health post staff, traditional healers in addition to APEs, matrons, water committee members and health co-management committee members);
- Community leaders (official and traditional);
- Other government representatives (GBV nucleus members including district police, district Registrar)
- Others involved in GBV prevention (agricultural extension worker, youth group members) (See Annex 5 for a detailed list of people interviewed).

The evaluation process was led by Dr. Lynne Gaffikin (evaluation consultant/EARTH Inc). The field-visit team included various Ecohealth staff and advisors:

- Current Program Manager (Corina Clemente)
- Current Program Assistant (soon to be Program Manager) (Lucas Jackson)
- Program Technical Advisor (Emily Hotchkiss)
- MSGH Training Program Director (Dr. Anu Anandaraja)
- MSGH (one year) Training Program Fellow (Katy Mimno)
- Program Clinical Supervisor (Pinho Murive)
- Program Crafts Coordinator (Pelagia Pita)



Figure 2 Leaders in the community of Nhanguo responding to midterm evaluation questions.

## Evaluation Findings

### Meeting objectives

*To what extent is the program reaching its objectives?*

As noted, Ecohealth aims to achieve its goal of reducing destructive human practices that are threatening the restoration of the GGE by offering BZ communities alternative livelihoods, improving food security and increased access to and use of essential health services and FP. Evaluation findings strongly support that the Program has and continues to meet the latter part of this goal in particular, i.e., “increase *access to and use of a number of important health services* and FP in BZ communities.” This is a common sentiment expressed by all stakeholders interviewed.

Specifically, among community members interviewed, the most widely recognized contribution of the Program is that it is increasing access to health services (and clean water in a number of needy communities). In turn, communities expressed that this is particularly helping in combatting diarrhea and malaria, key health issues in target populations. A well-appreciated Ecohealth-supported intervention is promoting and facilitating safe deliveries that community members say is helping to save women’s lives. Co-management committee members find that the newly-funded committee structure is particularly useful for increasing the communities’ voice about their health needs and getting health center messages out with a louder voice. For this they are very grateful to Ecohealth for supporting committee organization and periodic planning meetings.

MOH officials (district and provincial levels both) are grateful for and recognize Ecohealth’s assistance in extending health coverage to hard-to-reach and vulnerable communities – helping them achieve their health service coverage objectives. From the point of view of GRP/Park authorities, Ecohealth efforts are helping to build trust, open doors and increase Park visibility. Helping MOH authorities achieve their local and national health goals serves positively to underscore GRP’s commitment to local communities. That is, Ecohealth activities help convincingly demonstrate that the Park cares, is listening to community needs and is responding through support for quality health services, in keeping with government health plans. Conversely, collaborating with the Park gives advantages to the MOH. One such advantage has been increased access to, and commitment to access, remote communities especially around Mount Gorongosa that were not slated in 2011 to be early recipients of government-supported community-based health services. As GRP already had a presence there, through its reforestation activities, this opened the door for Ecohealth to include Massala, a remote mountain community, among its 6 focal communities.

Park authorities also recognize that over the long term, Ecohealth is contributing to improving human development in the area, as good health is requisite to economic development and poverty reduction. In the shorter-term, Ecohealth is contributing to environmental impact in two very specific ways: 1) incidents of poaching are reported to be less in communities where the Program is supporting CHWs, as CHWs are considered assistants to/an extension of the Park, contributing more “eyes and ears” regarding illegal activities; 2) where Ecohealth has supported water infrastructure, risk of human/animal conflict is reduced as community members do not need to access distant natural water sources (e.g., the river) for domestic/household use. This has a direct health impact in terms of reducing risk of death and injury due to animal attacks (e.g. crocodiles and hippos). It also confers a gender impact in terms of reducing the time females need to spend collecting water for household use.

Regarding MSGH as an Ecohealth partner, the overall aims of Mount Sinai's Global Health Program are "to improve the health of people around the world by building global partnerships in research, education, and patient care – in turn creating a forum for collaboration among the school's students, physicians, scientists, and trainees interested and involved in global health."<sup>13</sup> Two MSGH health goals of particular relevance to Gorongosa in Mozambique are:

- Reducing infant and child mortality
- Reducing deaths among women in pregnancy and childbirth

To date, MSGH's Training Program has been the most actively involved in Ecohealth. The specific goal of the Training Program is "to educate the next generation of medical students, residents, fellows, and faculty about critical issues in global health". MSGH Training program has a second objective: to "increase local healthcare capacity through training of local health workers", and the actual mission of the Training program is: "Training healthcare workers in the U.S. and abroad to tackle the health problems of the world's neglected and underserved populations". To that end, in Mozambique, in addition to Mount Sinai medical staff, medical trainees and students from its MPH program have visited and been involved with or provided varying types of assistance [e.g., clinical training, quality assurance (QA), health education/materials development, M&E system development]. To further achieve its goal, the Training Program is currently assessing the potential for GNP to be a site for more of its trainees to come for field experience.

In terms of its USAID-funded objectives, Ecohealth has been particularly successfully in increasing: i) access to and use of practices to prevent HIV/AIDS; ii) access to and use of RH (including FP) information, products and services; iii) access to preventative health services and community-based care and treatment of the most common diseases among vulnerable populations; and iv) awareness of Mozambican child protection and domestic violence laws. Through Ecohealth support to the GBV nucleus for Gorongosa District and a local youth theater group (JUNTOS), as well as its matrons, APEs and mobile clinic support, the Program is also helping to sensitize communities to the benefits of empowering girls to continue their education and delay marriage.

The Program has begun to address its USAID-funded objective related to "providing vulnerable populations with income generating alternative livelihood techniques" by helping the 32 trained matrons to produce and sell their hand-made products. As noted above, initial support for the matrons was provided by MSGH as a key means of improving MNCH but, unlike the APE activity, matrons are not a MOH initiative with funding. Thus, Ecohealth's income-generating support to the matrons also meets a second objective: enabling the matrons to continue to operate self-sufficiently in their communities, after Ecohealth funding ends.

In terms of Ecohealth's food security and nutrition objective, some nutrition education for pregnant women and newborns is being provided by the matrons and during ANC mobile clinic sessions and, to a lesser degree and to all community members, by the APEs. As a complement, such education is also being provided to school children by GRP's Environmental Education Department. Within Ecohealth, this objective has been the least-actively addressed due to a number of factors. Therefore, the Program needs to seize all available and upcoming opportunities to strengthen this technical area, especially given close linkages between food security and conservation threats to GRP (as illustrated in the

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<sup>13</sup> <http://icahn.mssm.edu/research/programs/mount-sinai-global-health/who-we-are>



conceptual framework). Ecohealth acknowledges this challenge and is moving in this direction, having already met with the newly-arrived Director of Conservation Agriculture to discuss potential collaboration on nutrition, food security and conservation agriculture/farming.

## Best Practices

*Do any specific Program activities indicate a “best practice”? <sup>14</sup>*

As an integrated, community-centered effort of conservation and development importance, Ecohealth has the potential to embrace and demonstrate best practices across and within multiple technical areas (HIV/AIDs, RH/FP, malaria prevention, nutrition, food security, WASH, conservation agriculture, environmental protection, among others). The following, multiple examples coming from Ecohealth’s comprehensive quarterly reports, is a list of some of the ways in which the Program is demonstrating the use of “best practices.” (More detailed examples of these practices are provided in Annex 6).

### *Partnering to maximize reach and results*

Ecohealth has developed partnerships with other organizations and/or stakeholder groups to more effectively achieve its targeted objectives. This strategy expands the scale (geographically, temporally, and/or technically) at which the Program can operate and also the potential for success. For PHE projects in particular, partnering is considered a key best practice as few organizations have expertise across multiple, sectorial domains.

### *Supporting existing structures/guidelines*

This approach helps engender local ownership and increases the likelihood of sustained momentum post-funding as what is supported is not unique to the effort nor its time-limited resources.



**Figure 3 District Health staff goes on a game drive after training on integrated management of victims of gender-based violence.**

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<sup>14</sup> A *best practice* is a method or technique that has consistently shown results superior to those achieved with other means.

### *Adaptive management through ongoing learning*

While looking to existing structures and programs to “ground” its efforts, the Program has strategically considered and explored various options before engaging in new activities, technical areas and/or partnerships. This approach has resulted in postponed implementation of some activities. However, the additional learning gained through a slower, more informed, decision-making process increases the likelihood in the long run of more successful implementation and results.

### *Data-based decision-making*

Related to adaptive management, following early data collection to set the stage<sup>15</sup>, Ecohealth has emphasized decision-making based on relevant and credible data. This practice has not only strengthened the basis for initial Program planning but also their M&E system (described elsewhere).

### *Worker skills development*

Ecohealth has supported worker skills development through a number of training-related “best practices” including: training of trainers, training practicums, training follow-up and periodic supervisory visits. The Program benefits in this regard from the background experience of its Program Manager and the training expertise of MSGH personnel. Strategically partnering with NGOs and technical units within the MOH has similarly aided in the uptake of these practices.

### *Support for context-appropriate incentives to maintain motivation*

Considerable evidence exists regarding the effectiveness of community-based volunteers in helping reduce disease occurrence and maintaining people’s health by extending health service access. A challenge common to initiatives involving such workers is how to reduce dropouts, maintain volunteer motivation and sustain “return on investment” in such worker cadres. Understanding this, Ecohealth has supported a number of events/ideas that recognize worker contribution and serve as an incentive to sustain motivation and productivity.

### *Increasing knowledge, changing attitudes and changing behaviors*

Over the years, strategies to effectively increase knowledge to change attitudes and behaviors - the ultimate objective - have been identified and variously tested. Some are more effective for certain age groups or genders and some work more effectively in urban versus rural environments. Peer education, especially among youth, is one such strategy that is being incorporated into Ecohealth’s Program. An approach that works well in rural communities is community mobilization through community drama/theater groups. A basic behavior change principle, after clarifying the specific change in behavior desired, is to articulate this simply, standardize the message and repeat it often, through multiple channels. This principle is being applied by Ecohealth for getting out its HIV messages in particular.

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<sup>15</sup> Early on, in 2008, GRP’s Community Relations Director and a USAID Special Projects Advisor jointly conducted a preliminary assessment for HIV service delivery in the BZ of the Park. Subsequently, MSGH conducted some focus groups by to conceptualize Ecohealth as a GRP program.



## *PHE Integration*

In keeping with other PHE projects, Ecohealth has cross-trained/sensitized various GRP-supported groups so that people representing different domains (e.g., health, conservation) all deliver the same integrated messages. Specifically, APEs, matrons, health co-management committee, GBV nucleus and theater group members have all been informed about conservation threats and the importance of sustainable environmental management (e.g., fires, deforestation). And, Ecohealth has talked to GRP staff in the Environmental Education and Community Planning Departments, among others, about key health issues (e.g., HIV testing, FP GBV) so that they, in turn, can communicate these messages to their target audiences (e.g., school children, community leaders, NRM committee members, etc). Ecohealth has also advocated strongly within GRP to develop integrated strategies/workplans.

## **Monitoring and Evaluation (M&E)**

*Does the project have the M&E systems in place to measure whether at the end of the program we have reached the intended results?*

As mentioned above, Ecohealth has focused considerably on its M&E system, conducting multiple focus groups and baseline surveys and developing and modifying data collection tools for routine monitoring. The system incorporates government/standardized tools and contributes to local and national databases, where possible. Ecohealth's system is not designed to be sustainable outside of the Program, rather it aims to 1) support ongoing adaptive management and 2) provide evidence of the Park's ability to successfully implement and deliver on a health initiative to help achieve GRP's -and the GRM's - goals for the focal area.

Two key components of Ecohealth's M&E system cover activities and outputs of APEs and the matrons. For APEs, there is a MOH standardized daily patient registry, monthly summary sheet and clinic-level summary sheet that lists type of patients treated and referred. There is also an Ecohealth form (introduced with MISAU and DPS approval) for recording APE educational efforts in groups and during home visits. The matrons use an Ecohealth individual patient registry to record and update data on various key MNCH indicators. There is also a form for recording the matron's MNCH educational activities. A community summary form, broken down by sub-programs (e.g. immunization, postnatal care, outpatient visits) is used during mobile clinics.

Not uncommonly, there were initial problems with correctly filling out the forms mentioned above and timely flow of completed forms to higher levels (within the government system or to Ecohealth). The Program has thus spent a lot of time trying to improve data quality and overall system functioning including meeting with local, district and provincial health authorities to identify and clarify any discrepancies between data sources, and revising and providing update training on the data collection tools. Specifically, as matrons are not all literate, the Program redesigned their forms to include pictures and to follow the woman's reproductive progress from pregnancy to the first year of the (newborn) child's life. However, before introducing any system-wide changes, the Program pilot tested proposed modifications. While the new form is easier for the matron to use, tracking individual women throughout their pregnancy/delivery makes it difficult to report on, on a monthly basis – as requested by district health officials.

Responsibility within Ecohealth for ensuring timely data collection is shared among the Program's various staff members, according to their area of technical expertise. The Program collects summary APE data (summarized by referral health center) from the MOH on a trimester basis. On the other hand, matron data are collected and entered by Ecohealth. Some data are entered into an Excel spreadsheet. Detailed data including gender and age breakdowns (for USAID indicator reporting) are entered directly into EpiInfo databases, designed with assistance from MSGH. Ecohealth now employs two temporary staff to enter the data, under supervision by Ecohealth's Program Technical Advisor.

Pre-programmed data analysis routines provide Ecohealth with data outputs that are periodically reviewed to check on data quality, to monitor Program progress and as the basis for stakeholder reporting, in particular to meet USAID quarterly and annual reporting requirements. In December 2012, with MSGH assistance, Ecohealth drafted a comprehensive Performance Management Plan (PMP) including a results framework and Performance Indicator Reference Sheets with indicator targets. Assumptions used for calculating the latter are well spelled out. The Program understands that a number of the indicator assumptions need validating – this is currently in process, now that Ecohealth has accumulated approximately a year's worth of monitoring data as the basis for validation. The evaluation team reviewed the Performance Indicator Reference Sheets in detail as part of the interim evaluation process and agreed on some wording and definition clarifications, candidate indicators to delete and some data source modifications. These changes will be incorporated into an updated PMP. Additionally, alternative strategies were discussed for calculating person rates (differentiated from visit rates) from available sources for USAID-required indicators with this requirement.

In terms of any future outcome evaluation, it was agreed that repeating MSGH's very comprehensive baseline (census) survey would not be practical.<sup>16</sup> Besides the issue of survey feasibility, the Program's support extends -to varying degrees - to other communities (than the focal 6) for which there are no baseline data. A sample survey (versus census) of a much-reduced list of questions in the 6 communities may yield useful information for assessing change over time, if the questions were very specifically selected to reflect Ecohealth's interventions over the course of its Program implementation; and/or the survey intention was to provide evidence to support scale up. In terms of the latter, repeat data collection (through a sample survey) in the other 3 baseline communities as "controls" – located in Nhamatanda District – could potentially yield additional survey value-added. However, as other things besides involvement or not in the Program differentiate the 2 districts, the validity of using these communities as controls is questionable.

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<sup>16</sup> In the end, the data collection process involving a 24 page questionnaire took two years to complete as only one trained person who could speak Portuguese, English and the local language remained as an interviewer.



Figure 4 Routine matron field supervision in the Mt. Gorongosa community of Nhankuco.

### Meeting environmental goals

*What conservation indicators should we use to measure the desired impact?*

As noted, key GRP objectives are Park protection and regional poverty alleviation. Protection of the Park requires monitoring of its biodiversity and natural ecosystem processes as well as close attention to and reduction of key conservation threats. Measures for all these are recorded by two GRP Departments: Conservation and Scientific Services.

The Department of Scientific Services coordinates research and analysis of measures of biodiversity and ecosystem state. For example, fire data are downloaded on a weekly basis from a NASA-supported system.<sup>17</sup> The Department also monitors vegetation composition, structure and productivity via permanent plots established in 2010 (i.e., the health of the rangelands in terms of grazing and browsing capacity) and compiles data on rainfall. In addition to animal censuses, the Department maintains other animal reports including detailed information on gender, age etc., of animals seen. Animal game counts have covered many species in the past but will focus specifically in the future on specific species of concern (i.e., < 100 in number). Previously, water indicators were monitored on major rivers (depth, flow, width, PH, temperature) but this is not currently ongoing due to equipment issues. The Department has the capacity and periodically assesses deforestation rates. To additionally support biodiversity monitoring, the E.O. Wilson Laboratory is conducting a series of comprehensive, in-depth surveys of biological diversity of the park in all its ecological zones, habitat types, and the most important biological communities.<sup>18</sup> The Conservation Department routinely collects data on conservation threats (e.g., poaching incidents, snares, kg of meat confiscated, convictions made, gold mining instruments or fish nets found, etc.) using 5-6 different forms and ranger scouts posted strategically in or along the Park boundary. This information is entered into a customized database on a monthly

<sup>17</sup> Previously, the Department was using the South African Modis system which identifies a larger proportion of fires (90% versus 60% with NASA data) but use of this source requires its own server.

<http://rapidfire.sci.gsfc.nasa.gov/firemaps/>

<sup>18</sup> <http://eowilsonfoundation.org/biological-exploration-and-monitoring/>

basis. Every quarter, a summary of this information is provided to GRP Senior Management to share with the Ministry of Tourism.

Opinions regarding the relative importance of the various conservation threats varied among GRP evaluation informants interviewed, in part depending on their respective responsibilities. For example, according to Community Planning staff, fires are the biggest threat, highlighting the need to increase fire control in problem areas. Fires are associated with poaching incidents as well as slash and burn agriculture. Department of Scientific Services staff shared that the biggest issue is encroachment within Park boundaries to establish new fields (*machambas*) and/or settlements (i.e., land transformation). Others expressed that deforestation in the Mt. Gorongosa area of the Park is, in fact, the most critical threat as the mountain's river system directly influences the Park's flood plain - the "life line" for GNP's wildlife and thus potential for ecotourism and associated economic development.<sup>19</sup> Mountain deforestation rates are known to be on the increase, especially in the area between the Park waterfall and forest margin. Others note that fire on the mountain is the biggest conservation threat. The two are intimately related as on the mountain, trees are burned down and the ash is used as fertilizer.<sup>20</sup> Apparently, one driver of this increase in deforestation is people living outside the area who are paying local people to cut the trees (and are providing them with the inputs to do so). To offset this trend, working with local community members, GRP establishes tree nurseries and plants new trees. However, very recently, a large majority of the planted trees were destroyed by fire. For a number of reasons, Park rangers are no longer patrolling the mountain area, which is possibly why fires and deforestation are on the rise there.



Figure 5 Recent deforestation on Mt. Gorongosa.

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<sup>19</sup> A recent GRP workshop focused specifically on ways to improve economic conditions for people living on or near the mountain.

<sup>20</sup> Livestock-raising is not a major activity near the Park due to the presence of tsetse flies (wildlife has adapted to the flies but livestock have not). Consequently, there is a lack of organic fertilizer as well as local domestic animals as a meat source.



Ecohealth includes the negative effects of tree cutting, poaching and uncontrolled fires as part of their training for the co-management committees and matrons. This is also an intrinsic part of the support to APEs who consider themselves an extension of the Park. The youth group (JUNTOS) supported by both Ecohealth and the Environmental Education team also conveys environmental messages related to these threats in their community theater productions. Ecohealth M&E tools include a section for recording whether matrons and APEs, in turn, pass environmental messages learned during training on to the patients/clients in the community. The extent to which such education translates into behavior change is indirectly measured via the ranger reports collated by the Conservation Department.

A framework to consider that might more directly link environmental goals and Ecohealth support is that of “ecosystem services.” There are multiple Park-related services that benefit communities in the BZ and beyond, and of the 4 major categories (supporting, provisioning, regulating, cultural), a GRP focus has been ecotourism –considered a recreational experience under *cultural* ecosystem services.<sup>21</sup> From the community’s perspective, while they depend upon many of the other services (supporting and regulating), their daily survival depends upon two key *provisioning* services:

- food (including game, fish, crops, and wild foods)
- water (for crops and domestic use)

As noted, water-related indicators have been monitored in the past by the Department of Scientific Services and illegal game and fish off-take is routinely monitored by the Conservation Department. Of relevance, food and water security for BZ communities falls within Ecohealth’s scope of work. However, as noted throughout, activities in these two domains are just gaining momentum. On the other hand, this provides a good opportunity to clarify food and water measures/indicators that are most relevant to measure and also which GRP Department is in the best position to take responsibility for indicator measurement (and also indicator monitoring, to feed into adaptive management). Important considerations related to choosing the most relevant indicators include i) how water and food-related interventions for which Ecohealth (or comprehensive GRP) funding is available are likely to change indicator values, and ii) temporal and spatial dimensions of the selected measure(s). These considerations also feed into discussions regarding how Ecohealth can maximize both conservation and health impact, summarized below.

## Going to scale

*How much of the BZ needs to be covered in order to have the desired environmental conservation and health impacts?*

Currently, Ecohealth is supporting interventions with varying intensities in 14 villages in one district, Gorongosa (see Table 3). Community planning, environmental education and conservation informants report working in 16 BZ communities around the whole Park (in 6 districts). These differences in part reflect differences in the definition of “community” and how geographic areas are currently and historically spatially defined or categorized. As part of the evaluation process, a useful discussion took place between Ecohealth and GRP/Community Planning staff to clarify spatial overlaps between the two Programs and future priority areas for consideration by Ecohealth to maximize its impact.

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<sup>21</sup> [http://en.wikipedia.org/wiki/Ecosystem\\_services#Four\\_categories](http://en.wikipedia.org/wiki/Ecosystem_services#Four_categories)

The discussion focused on differences between systems for classifying geographic areas. The official system is organized hierarchically as: District, Administrative Post, *Localidade*, *Aldeias*, *Bairros*, *Quarteirões e Blocos*. According to the 2005 Gorongosa Profile, Gorongosa District has 3 administrative posts: Gorongosa, Nhamadzi-Canda, Vanduzi. Relevant to Ecohealth, the MOH organizes its activities according to health system levels, taking into considering the government's official administrative boundaries. In Gorongosa District, there are 11 referral Health Centers covering 14 communities, 9 related to Ecohealth's work (See Table 2). Each Health Center covers various villages in their "catchment area", determined according to population numbers and distance to health services.

The traditional system is organized according to *Regulado*, *Povoação*, *Povóado*. Each of the 16 *Regulados* in which GRP's Community Planning Department works around the Park has a natural resource management (NRM) committee. Eight of the *Regulados* fall within Gorongosa District (see Table 1), the first four of which surround the Mt. Gorongosa area of the Park. The rule for GRP support is that they can work with a *Regulado* if 50% or more of the area falls within the Park's designated BZ area. They are not supposed to work with areas that fall completely within the Park,<sup>22</sup> or with any *Regulado* that falls completely outside the BZ.<sup>23</sup> For a few of the APEs trained by Ecohealth, part of their geographic area falls within the Park but 50% or more falls within the BZ so they qualify under GRP criteria. However, apparently at least 1 APE operates fully outside the BZ and was trained by Ecohealth based on request by the MOH.

Extension of some Ecohealth efforts beyond the BZ points to a challenge intrinsic to initiatives with stakeholders from different sectors. Initiatives targeting people as beneficiaries (e.g., health programs) use official administrative areas/boundaries as their operational unit (in this case, complicated by the existence of both traditional and official systems that do not completely overlap). For initiatives targeting biodiversity and/or ecosystems, their focal area or boundaries are customarily defined according to natural processes. This is reflected in the Park's boundaries and different zones within the Park identified for management. Finally, for biodiversity conservation initiatives in which benefits to humans and change in human behavior are also objectives, as with GRP, target areas are often defined according to both (e.g., communities within GNP's BZ).

For the MOH, a key objective is complete health system coverage in terms of its 4 levels. APEs represent the Ministry at the community level and function as the official liaison between the community and their designated Health Center. The strategic decision by Ecohealth to provide support to APEs in 14 communities (now 15) helps the MOH meet its APE /Health Center coverage objective that, in turn, helps maximize relations with key government health partners. On the other hand, it also reduces available resources for health interventions in other geographic areas of priority to the Park and for meeting GRP conservation threat reduction objectives.

As described throughout, while working to some extent in 14 (now 15) communities, Ecohealth has focused its "full package" efforts in only 6 communities. The rationale behind this decision was that by focusing, the Program would be better able to effectively implement and thus realize and measure meaningful results. This experience and solid results would, in turn, provide the basis for expanding over time to additional BZ

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<sup>22</sup> As the aim is to encourage those living within the Park to relocate outside the Park boundaries where they can more readily access health, education and other services.

<sup>23</sup> In a few places, GRP does work with such communities due to special conditions.

communities in need. Based on positive results thus far, Ecohealth has been encouraged/requested to expand its “full package” to all communities within the District and to other districts, as possible, within the Province to further meet MOH needs. Competing Ecohealth demands include whether to i) add more health topics in the same sites, ii) add more integrated activities in the same sites that more directly address conservation threats, iii) extend the minimum PHE package or any health support to new sites to help meet DDS/DPS coverage objectives, iv) extend health support to new sites that are priority for GRP in terms of conservation threats in other new districts. *The Program is thus at a critical decision point regarding where it should operate and which interventions it should support to maximize both health and environmental impacts.*

In terms of where, in discussions with various GRP Departments, the evaluation team learned that of all Park areas, the northeast is the most difficult to manage as there is no road network there (currently or historically). On the other hand, for Community Planning, it is hard to work in the south near Vinho or Cataemo as there are no other initiatives providing social services (health/education) in the area that can be offered as an incentive for people to move *out* of the Park (their focus). In Djuchendje, there is a problem of people encroaching on the park and health services are far way. In Madhangua, human/animal conflict is problematic and Vinho clinic is the closest for health services. In short, there are health and conservation threat rationale for working in a multitude of areas /communities around the Park.

However, considering GRP’s overall goal and the relationship between the Mt. Gorongosa ecosystem, the Park’s flood plains, wildlife abundance, ecotourism and ecotourism-based economic development, there is general consensus that the most *critical geographic area for GRP is Mt. Gorongosa*. Focusing in this geographic area may not increase percent coverage of BZ communities as much as other expansion strategies would, but it would meet dual objectives of contributing to a key conservation target area and increasing MOH coverage in this hard-to-reach corner of the District. In this regard, quantity of coverage may be less critical than quality of area covered (in terms of conservation importance and challenge to health service access). The question of which interventions should be supported by Ecohealth to maximize both health and conservation objectives are considered below.

### Integrating Food Security and Nutrition

*What is the most strategic way to incorporate issues of food security and nutrition into the second half of the program?*

In early documents, GRP described livelihood activities geared toward assisting farmers to increase their agricultural output using agricultural conservation techniques. Specifically, a proposed action (under the Cooperative Agreement Activity 3: To promote general community health and well being in an ecologically-friendly manner) was to improve production systems, food security and livelihoods through the participatory approach of Farmers’ Field Schools (FFS). The FFS model is an agricultural extension program advocated by the Ministry of Agriculture (MINAG) and District Services for Economic Activities (SDAE). Under this model, each community selects candidate volunteers (facilitators) to be trained by SDAE in new agricultural techniques, communication skills and ways to monitor increased agricultural output. Provisioned with a start-up kit include farming equipment (e.g., hoes, axes, machetes and seeds) a bicycle and a small stipend, the facilitator then meets with the community, identifies community participants that, as a group, then selects a plot of land on which to work and a crop to sow and maintain.

The “field school” component involves the facilitator meeting with the farmers on a regular basis to discuss techniques and problems specific to their respective area, teaching new ways to improve community farming skills and addressing any difficulties the farmers might be having. GRP aimed to provide each facilitator with the basic equipment and supplies necessary to begin FFS activities with the ultimate aim of multiplying the number of beneficiaries through participants starting their own schools to pass on new technologies and experiences to a greater number of fellow community members. Many areas in the country have agricultural extension workers (AEWs) employed by MINAG who have more training and experience than facilitators. However, at Program start, no such workers were regularly working in any of the target communities. To incorporate this important cadre, initial ideas were for AEWs from other areas to visit and support Program-supported facilitators in the BZ by joining mobile clinic teams and making use of the transportation provided for that health activity.

However, before initiating any agriculture-related activities in support of food security (linked to nutrition) and income generation, Ecohealth planned to hire a dedicated agriculture extension officer with expertise in these content areas. In the interim, the Program visited Zambia to explore alternative approaches. Additionally, it conducted a food security survey including questions on food diversity and women's empowerment, targeting the agriculture cooperative in neighboring Vinho that had support from GRP starting in 2008. The study included additional women in the same community, not members of the cooperative, as well as women in a neighboring community as “comparative controls.” The specific purpose of the study was to evaluate the ongoing agriculture and income generating activity in the Park's BZ in order to inform Ecohealth's plans for improved food security among vulnerable populations.<sup>24</sup>

Another early action taken by Ecohealth was participating in the first meeting of the Nucleus Against Hunger, organized at the district level by the nutrition lead at Gorongosa's Vila Hospital. Other invitees included representatives from agriculture, education and infrastructure segments. The meeting objective was to review the new national 5-year strategic plan against hunger and to strategize how the district would implement activities in keeping with the plan. One action proposed at that meeting was for the Park, the Foundation Against Hunger and other participating NGOs to support the government's “*Mãe Modelos*” (Model Moms) Program.<sup>25</sup>

During evaluation interviews, the District repeated its request for Ecohealth to support the Model Moms program to address nutritional and food security deficiencies in the area. As part of this program, the MOH is not looking at specific micronutrients but rather promoting a “balanced nutrition”.<sup>26</sup> The Provincial MOH Director also shared that now, as historically, nutrition is a key issue for the province. While there is a lot of food production in the province, there are still high rates of nutrition-related conditions.<sup>27</sup> Based on available

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<sup>24</sup> As mentioned elsewhere, this objective was revised to focus on all vulnerable populations in the target area, not just OVCs and caregivers, for a number of reasons. For one, findings from the baseline revealed that focal communities could all be considered vulnerable in their entirety. Secondly, a cultural tradition in the area is for family members to absorb “orphans” and the Ministry of Women and Social Work confirmed that there was no registry of OVCs in the target communities. Thus, identifying OVCs for this activity could be complex and introduce the risk of stigmatizing.

<sup>25</sup> [http://www.unicef.org/mozambique/pt/child\\_survival\\_4637.html](http://www.unicef.org/mozambique/pt/child_survival_4637.html)

<sup>26</sup> In some places protein is a particular issue, linked potentially to illegal game/fish poaching, a GNP conservation threat.

<sup>27</sup> In 2008, chronic malnutrition/stunting was 43% in the Province and in 2011 the rate had gone down to 38%. Movement is thus in the right direction - in 3 other provinces the rate increased over the same timeframe.



statistics, chronic malnutrition (stunting) seems to be the bigger issue versus acute/severe malnutrition (wasting) although the latter also exists in pockets in the province. Apparently, Gorongosa District is one of these pockets.

The evaluation team heard that UNICEF is (still) providing support to the Province in this health topical area, working in collaboration with MINAG. Other partners include: HAI, CHASS-SMT, Foundation Against Hunger and ComuSanas.<sup>28</sup> At the Director's invitation, before departing the Provincial MOH offices, Ecohealth team members paid a visit to the office coordinating nutritional interventions to become a partner and establish that relationship. Aligning efforts with those of the government has been an Ecohealth strategy and "best practice" all along. Thus, the Program should continue to maintain and nurture relations with these two MOH initiatives to further progress related to its nutrition and food security objectives.

While not (yet) officially part of the Model Mom program, Ecohealth already does incorporate nutritional education to some degree within its ongoing activities, including demonstrations of what is good nutrition during supervisory visits. Additionally, GRP's Environmental Education Program provides nutrition education as part of its school-based efforts. The latter Program also works with FFS and Farmer's Associations to help set up "demonstration plots" at participating schools, linked to environmental education on fire control, nutrition and other relevant/interrelated conservation and development topics. Those GRP partnerships, together with the fact that the Environment Education Program also works with official and traditional leaders and NRM committees, among other influential groups in the community, provide an opportunity for greater collaboration between the two Community Relations Programs to jointly address nutrition and food security. This could serve to help GRP more effectively achieve Program-specific objectives as well as GRP's overarching/common goal.

Many of the schools currently part of the Environmental Education Program fall within Gorongosa District. If any of these schools fall within Ecohealth's 6 focal communities, a pilot effort could be to involve Ecohealth staff, matrons and APEs in GRP's school-based nutrition and demonstration-plot efforts. This follows the suggestion from a recent GRP/Mt. Gorongosa workshop to "invest in the children and youth to change minds." APEs and matrons could follow-up participating students during their home-based visits to help diffuse key nutrition and farming messages to all household members. To link efforts, these households could in turn potentially become candidates for "Model Moms", in support of that MOH Program.

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However, even though there has been improvement over the years, the Direct says that efforts must continue to effectively tackle this issue.

<sup>28</sup> <http://www.hilfswerk.at/hwa/english/projects/africa/mozambique/mozambique-comusanas-a-project-for-women-but-not-only>



**Figure 6 Matrons during a cooking demonstration on how to make fortified children's food.**

As the Environmental Education Program works in all BZ communities surrounding the Park, having Ecohealth staff involved in school-based activities in more communities than just its focal 6 could serve as an initial (resource-limited) way of expanding Ecohealth efforts to other BZ communities. Criteria for Environmental Education Program support include that the community poses risks to Park conservation goals. By working collaboratively in this way in select communities posing high risk, Ecohealth could increase its potential to reduce conservation threats, a part of its overall goal. As suggested elsewhere, a focus for such a pilot could be mountain communities which have expressed that they value the education support they are receiving from GRP. In this way, this effort could help contribute to the larger GRP objective of increasing trust among these communities, a requisite for GRP collaboration on alternative livelihoods and income generation in this critical area of the Park.

A recent step forward in terms of Ecohealth's nutrition and food security objectives was completion of a "terms of reference" for recruiting an Ecohealth Nutrition and Conservation Agriculture Coordinator. GRP just hired a Director for its Conservation Agriculture Department and the evaluation team was able to meet with him to begin sharing ideas regarding how to coordinate efforts to achieve Conservation Agriculture objectives and Ecohealth's nutrition, food security and income generating objectives.

The team learned that an overarching GRP Conservation Agriculture strategy is to find ways to improve livelihoods and other conditions on the plains areas that will incentivize people to move off the mountain/out of Park areas and reduce new people settling on the mountain. The strategy includes rendering land on the plains (flats) that has been burned more usable while also providing schools/health services as a strong incentive to settle in those areas. Conservation tillage is one approach being considered for the former with the aim of helping reduce burning of trees for fertilizer. Offering nutrition interventions on the flats towards which other GRP efforts will be directed would help maximize efforts to get

people to want to move to those areas while also improving nutrition outcomes in those areas.

During an evaluation visit to a mountain community, community members said that the issue in their area was not food security but rather food diversity, i.e., having food that is more palatable and to their liking.<sup>29</sup> They indicated that not everyone can grow the same foods but a variety of foodstuffs are generally available in local markets. However, families do not have income /money to buy this food. This ties into the IGA activities initially considered for Ecohealth (e.g., honey production, guinea fowl farming, vegetable gardening and mat-making), to be introduced using a “value chain” methodology. Ecohealth has introduced handicraft making as an IGA for its matrons. However, a combined Conservation Agriculture/nutrition/food security approach ideally would not only increase the ability of communities to grow better crops (increased crop yield) but also to increase the ability of families to feed themselves *and* get income to pay for items that they do not grow but that someone else grows and can be found in their area.

### Leveraging Opportunities

*To what extent is the project leveraging existing opportunities for integrated PHE program elements? Are there any possible high-yield integrated opportunities that the project should consider leveraging in the second half of the program?*

A number of opportunities for leveraging are presented in the “Opportunities” section of this report; others are noted under the “Integrating Food Security and Nutrition” question as a key leverage opportunity concerns food security. Another important leverage opportunity to consider relates to the USG “Feed the Future” Program that aims to help over 200,000 vulnerable women, children and family members—mostly smallholder farmers—reduce hunger and poverty.<sup>30</sup> Other aims of this effort (USG’s Global Health and Food Security Initiative (GHFSI)) include improved income and nutritional status, both of which are very consistent with Ecohealth objectives and overall GRP objectives (e.g. mountain ecosystem conservation and conservation agriculture). Another common value between this USG initiative and GRP is Mozambique’s natural resources, biodiversity and unique ecosystems as a foundation for long-term economic growth.<sup>31</sup>

Another agency involved in reducing poverty and food security while improving nutrition and NRM is FAO (active in Mozambique in this domain area since 1979). Of additional relevance to Ecohealth, FAO supports the following strategic areas taking into consideration *gender and HIV/AIDs*:

#### **Food Security and Nutrition**

- Food Production, Animal and Plant Health and Production.

#### **Rural Development**

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<sup>29</sup> Of note, the food security index used during Ecohealth’s food security Vinho assessment included questions on adequacy of food available as well as quality of their food. There were notable differences between communities surveyed. Some scored low in terms of the number of months for which they had food available; others had enough food but not the kind of food they preferred. These findings may also reflect differences between nutritional adequacy (in terms of a balanced diet) and food security (enough calories) -both Ecohealth objectives.

<sup>30</sup> <http://www.feedthefuture.gov/country/mozambique>.

<sup>31</sup> [http://www.usaid.gov/mz/doc/misc/moz\\_food%20security\\_07-15-08.pdf](http://www.usaid.gov/mz/doc/misc/moz_food%20security_07-15-08.pdf)

- Extension, Agricultural Services and Systems, Trade and Markets, Post-harvest Losses Reduction.

#### **Institutional Development**

- Policy, Legislation, Training and Capacity Building.

#### **Environment and Natural Resources**

- Sustainable Land, Water, Forestry and Fisheries Management, and Pesticides Management.

#### **Disaster Risk Management**

- Preparedness, Prevention, Mitigation, Emergency Response and “Building Back Better” (the transition to development).

At least one relevant FAO-funded project is currently operating in Sofala Province “Protecting and Improving Household Food Security and Nutrition in HIV/AIDS Affected Areas in Manica and Sofala Province.” While not specifically targeting GRP BZ communities, the fact that FAO has a history of relevant involvement in the Province offers a potential opening for future engagement.

As mentioned, UNICEF is providing support to the Sofala DPS that presents another opportunity on a number of fronts.<sup>32</sup> Of the interventions UNICEF has been supporting in Mozambique, community-based nutrition is of particular relevance.<sup>33</sup> This includes the promotion of good nutrition practices among households (and caretakers) to correct infant and young child feeding practices - incorporating training of community health workers, breastfeeding promotion, nutrition education and vitamin A supplementation, among other activities. Communication and social mobilization about nutrition are considered important aspects of their community approach, focusing on the empowerment of mothers, families, communities as well as service providers – all consistent with Ecohealth’s basic approach.

UNICEF also works to increase water and sanitation coverage to reduce waterborne diseases such as diarrhea that remain a significant health problem in BZ communities. UNICEF works on water and sanitation with the Ministries of Public Works and Housing and Health in both urban and rural areas of the country that have low coverage and high incidence of waterborne illnesses and HIV and AIDS – GNP BZ communities meet all the latter criteria.

In terms of leveraging funds, a 2012 Action Against Hunger report analyzed the major investors in nutrition, considering both direct and indirect (nutrition-sensitive) interventions. UNICEF ranked second among direct intervention donors, second to Canada that ranked highest as an indirect nutrition donor, second to the EU.<sup>34</sup> Meeting nutrition needs in BZ communities through integrated efforts requires both direct and indirect interventions and thus Ecohealth should consider this as it develops its Food Security linked to Conservation Agriculture strategy for the future.

An organization that addresses poverty and food security through a “business solutions” approach is TechnoServe - mentioned by GRP’s new Conservation Agriculture Director as an entity working in the GNP area from which GRP could gain valuable lessons learned.<sup>35</sup> Their approach involves creating a competitive and sustainable commercial agricultural sector to

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<sup>32</sup> As noted in the background, one of the key reasons why Ecohealth focused on just one district was because UNICEF was providing support to the DPS elsewhere.

<sup>33</sup> [http://www.unicef.org/mozambique/child\\_survival\\_4895.html](http://www.unicef.org/mozambique/child_survival_4895.html)

<sup>34</sup> [http://www.actionagainsthunger.org.uk/fileadmin/contribution/0\\_accueil/pdf/Aid%20for%20Nutrition%20low%20res%20final.pdf](http://www.actionagainsthunger.org.uk/fileadmin/contribution/0_accueil/pdf/Aid%20for%20Nutrition%20low%20res%20final.pdf)

<sup>35</sup> <http://www.technoserve.org/our-work/where-we-work/country/mozambique>

generate opportunities for small-scale, rural producers (and suppliers) and new jobs for the rural poor. This is very consistent with GRP's goal of helping develop an "engine" for development (through ecotourism) around the Park and throughout the Province. Combining direct nutrition interventions, like Model Moms, with more indirect food security efforts that address sustainable agriculture and jobs, partnering with organizations like TechnoServe, could serve as a good model for Ecohealth integration. Funds could be leveraged either from donors that support an integrated approach or by combining funding from donors targeting complementary approaches.

## Sustainability Approaches and Challenges

*Are we doing what we can to ensure that this program is sustainable in the future?*

From Program start, government health partners (DDS/DPS) have argued that sustainability is critical to defining success. This position derives in part from past experiences with raised expectations that could not be met as a result of time-limited, NGO partner activity. As a commitment to sustainability, the Program initially planned for involvement of Secure the Future, a Bristol-Myers Squibb philanthropy program that focuses on replicating sustainable community outreach and education approaches including community-based HIV/AIDS treatment targeting vulnerable populations.<sup>36</sup> Subsequently, at the MOH's request, Ecohealth agreed instead to support the APE revitalization efforts (through training and 2 years of support to APEs in select communities) as a government-led, community-centered health initiative. The fact that the government is providing support to APEs elsewhere in the district, province and throughout country, as an important component of their IPS strategy, lends weight to the likelihood of sustained support for this component of Ecohealth's Program.

On the other hand, experience to date with the APE component suggests that, subsequent to Ecohealth's 2-year commitment, APE support from the government will likely be at a reduced level. Evidence for this comes from the fact that during these initial 2 years, a government responsibility has been to provide APEs with their medical kits. To date, however, the kits have not been reliably delivered to Ecohealth-supported communities, limiting APE ability to fill their IPS role. Additionally, health staff (from the 9 corresponding facilities) tasked with monthly supervising APEs in the field to monitor and ensure service quality have not consistently assumed this responsibility. This is due, in part, to long distances between some health facilities and where APEs are posted, transportation issues and/or lack of per diem monies. Ecohealth has attempted to reduce some of the barriers to scheduled supervision including support for transport, when possible. However, given the area's remoteness, limited infrastructure including roads and persistent budgetary constraints, these challenges are likely to continue, potentially reducing sustained APE Program effectiveness over the long term.

As mentioned throughout, an Ecohealth strategy strongly advocated for by MSGH (to improve MNC health) in BZ communities has been support to matrons (training, supervision and later, income generation). The potential for matrons to promote and facilitate facility-based births and improve MNCH outcomes is widely acknowledged by all Program stakeholders. Ecohealth's experiences to date are providing convincing evidence in this regard, to the extent that the Program was asked by local health authorities (SDSMAS) to increase the number of matrons Ecohealth supports, to include areas currently not covered.

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<sup>36</sup> <http://www.securethefuture.com/>



The government historically funded efforts to strengthen the skills of traditional birth attendants but, as noted, the existing policy is rather to promote and facilitate facility-based births. Further, while there is a new government Maternal/Infant Health Program, there is no ongoing funded government effort that focuses specifically on this cadre of community volunteer. Thus, the potential for sustained momentum of this Program component without continued support is unclear. Ecohealth has long recognized this challenge and has attempted to address it through IGA targeted specifically at this group, allowing them - in principle - to operate self-sufficiently in the future.

Program IGA support to matrons has included specific skills training (e.g., making placemats/bags), ongoing mentoring and skills improvement (through periodic site visits by Ecohealth's Crafts Coordinator); price setting; identifying and establishing various product markets/points of sale; facilitating sales; advance purchasing and distributing sales monies. Product quality has improved over time and matrons are being rewarded by increased income. However, "proof of principle" regarding how this IGA can/will result in self-sufficiency remains to be established. Currently, matrons use some of their income to purchase more material to make additional items. Also, some of the monies are set aside to invest in new skills development/training. Importantly, the Program plans to provide support to help the matrons establish and maintain savings and loans groups.

In addition to evaluating how effectively these groups function, an important question for the Program to consider is how matrons end up dividing their time between generating income and supporting maternal health. General consensus is that the matrons will continue to support maternal health as they currently do, as something highly valued by the community and an important part of their self-identity. A separate question is how to sustain the quality of matron efforts in the absence of Ecohealth support for periodic supervision. District nurses have been identified to help in this regard but to date, their participation has been sporadic. As with APE supervision, given the area's remoteness, limited infrastructure and persistent budgetary constraints, these challenges are likely to continue, potentially reducing matron effectiveness over the long term.



Figure 7 Matrons admiring their hand-made crafts for sale at the Chintengo tourism gift shop.

Mobile clinics are conducted as another government strategy to address gaps in access to health services. In communities where Ecohealth has agreed to support mobile clinics, costs are currently shared; the Gorongosa SDSMAS provides the medical equipment and supplies as well as nursing staff and Ecohealth provides the transportation and per diem monies for the nursing staff. To date, however, service quality has occasionally been compromised due to missing equipment and lack of important supplies such as malaria tests, contraceptive methods and sufficient supplies of clean water and soap. In such instances, whenever possible, Ecohealth has helped provide needed medical equipment/supplies but this is not a sustainable strategy over the longer-term.

Where Ecohealth supports mobile clinics, supervisory visits are conducted every 45 days. Due to the same resource constraints mentioned above, mobile clinics in other communities supported solely by the district government take place on a less frequent basis, sometimes once every 1-4 months. In discussions with District MOH officials including the Chief Medical Doctor, their proposed minimum supervision standard was at least once every 3 months. For sustainability of this component, the Program needs to consider aligning its mobile clinic support to better match government ability to sustain the service in the future. The 6 “full package” communities are currently used to an every 45-day clinic so to maintain good relations, any “realignment” in terms of reduced frequency should ideally take place over an extended time period, not suddenly.

To additionally help improve and ensure mobile service quality, the Program currently contributes technical assistance via an in-country Training Fellow (physician), funded for a year by MSGH as part of their support to GRP/Ecohealth. One of her responsibilities is helping to implement improvements suggested during a MSGH-supported QA assessment. However, a challenge to implementing these improvements to mobile clinics is that these services are delivered by rotating local hospital staff, so often there are new people participating each week. It is thus hard to organize a QA workshop for staff representing all health topics (vaccinations, acute care, maternal and child health, oral health, HIV) involved in mobile clinics. The presence full-time of the Training Fellow will help greatly in transferring knowledge and skills but the decision regarding which QA modification to introduce should be done in very close collaboration with the Chief Medical Doctor, so service quality improvements can be feasibly sustained and extended system-wide.

Ecohealth has supported the organization and internal development of a GBV “nucleus” for Gorongosa District comprising representatives from a variety of important offices /departments including the police, justice (Registrar), education, youth, agriculture and health, among others. They seem very motivated about helping to sensitize community leaders and communities in general about a number of issues, in particular about abuse of children (labor, early marriage) and appreciate the value of working as a team. A key challenge experienced by Ecohealth to date has been resistance from office directors to delegate participation in the nucleus to another staff member. As directors are busy and already stretched with their current responsibilities, they have limited time to work on implementing “next steps.” To gain momentum on this important activity, Ecohealth staff have facilitated much of the nucleus coordination and planning but for the group to effectively function in the future, additional office/department staff will need to be identified to participate.

The government idea behind health co-management committees is to further fill health system gaps, lending support to the APEs, matrons and health clinic staff via a group of 10-14 members (including APEs, matrons, clinic nurses, village leaders and traditional healers)

that meet periodically to identify i) priority health issues needing to be addressed; ii) what they can do themselves versus iii) what needs to be taken to higher levels. An additional rationale for these committees is that this mechanism can help higher levels access the village level more easily for e.g. vaccination campaigns. Ecohealth has successfully helped establish 4 co-management committees (representing their 6 focal communities) to come together, discuss and agree on group objectives and plan actions for the committee as a whole. Committee functioning is supervised by Ecohealth in conjunction with two nurses from the district. Committee members seem enthused about the group idea and potential for increased advocacy and action via a group voice, including from the smaller communities. Not all committee members can attend meetings however due to the long distances. Similarly, given District MOH transportation challenges, without Ecohealth support, it is unclear how often committee supervisory visits could be carried out. Over time, if functioning successfully, supervisory visits may be less critical to maintaining committee momentum. This is an unknown that the Program could help the MOH determine within its remaining funding period, so that investment made in this important community health structure is better sustained.



**Figure 8: Health Co-Management Committee training with APEs and matrons participation at the Mueira Health Center.**

#### **Evidence of success: scale up or focus in?**

*Do we have evidence to show potential donors it is worth fundraising to scale it up to reach other districts and communities in the buffer zone? Are we spreading ourselves too thin by engaging in so many spheres in health (maternal and child health, water and sanitation, HIV prevention, vaccinations, nutrition), population, livelihoods (crafts) and gender?*

As required, Ecohealth routinely submits a quarterly report to document how well it is performing in terms of conducting planned activities and producing agreed-upon deliverables. Where the Program has not been able to reach or exceed planned targets, explanations are provided which include lack of staff, lack of transportation, lack of partner



input and/or continued search for an appropriate partner, among others. This evaluation yielded other sources of information to help Ecohealth tell its story and make the case for integration to simultaneously meet health, other development and conservation needs. The latter evidence comes in many forms: testimony, anecdotes and some hard data. Whether this suffices to convince donors of the “worthiness” of scale-up depends on donor respective goals and objectives.

The MOH is a key Ecohealth stakeholder. As described under the “Meeting Objectives” section, the Ministry sees the Ecohealth Program as an agent for extending their programs and interventions. Initially, the MOH/central level was not convinced that the Park, through Ecohealth, was qualified to support Ministry initiatives e.g. revitalizing APEs. This is no longer in question; to the contrary, both SDSMAS and DPS consider Ecohealth and the Park important partners and look to Ecohealth to help them expand or strengthen a variety of health initiatives (e.g., Model Moms, Mobile Clinics, etc). Their confidence and desire for continued engagement provides strong evidence that Ecohealth is functioning successfully and contributing in meaningful ways to achieving district and provincial, and by extension national, health objectives.

Over time, the Province has seen reductions in mortality and malnutrition rates in < 5 year olds. Similarly, there has been an increase in rates of immunization, sleeping under a bednet and Vitamin A supplementation (within the last 6 months) in the same age group. Among pregnant women, facility-based births and HIV counseling /testing at ANC visits have increased and access to clean water for all community members has improved. According to the latest statistics, Sofala Province is better off and has improved more since last surveyed on most if not all of these indicators, compared to the country as a whole.

The extent to which Ecohealth has contributed to the above improvements is not easy to determine as the population size of Ecohealth’s focal communities is small relative to overall provincial population sizes. The same holds for the district. That is, despite successful implementation of Ecohealth activities and local impacts, the effect of Ecohealth’s efforts in terms of rate changes at higher (aggregate) levels is not clearly evident. A key example of this relates to change in the facility-based birth rate. For Ecohealth communities, data suggests the rate has increased considerably. Specifically, in the baseline survey (of the 6 Ecohealth communities), the rate was 16% (for any birth within the previous 2 years), a little higher among the mountain community women sampled (18%) than women in communities in the flats (12%). In Ecohealth’s March 2013 quarterly report to USAID, the facility birth rate among all matron clients was 49% (n=315 deliveries) – a 200% difference.

The two measures are not directly comparable however as the boundaries of the baseline census included community boundaries that do not correspond to the matrons’ real catchment areas (estimated to be 2.5 times greater than the baseline). Additionally, the accuracy of matron (self-reported) statistics has not been counter-validated. On the other hand, the evaluation team heard from many sources that previously, everyone delivered at home whereas now, the message has been successfully transmitted and many women attempt to deliver at a facility. This suggests that there has been an increase in facility-based births in Ecohealth focal communities, enough to make an impression on a multitude of stakeholders. Importantly, the team heard that husbands are now encouraging this practice, in part as the community leaders are encouraging the husbands to be supportive.

However, as noted above, as these communities represent only a fraction of the overall district population, the contribution to change in the overall district facility-based birth rate

may be limited. Currently, the district rate is 67% compared to the district goal of 80%. Given this reality, Ecohealth's most likely *quantifiable* impact contribution to date is expanding access to different important health interventions, measured as increased geographic (spatial) coverage.

On the conservation side, while Ecohealth incorporates environmental education (e.g. fire control, anti-poaching, anti-logging) as part of their support to various health activities (e.g., APE/matron training, health co-management committee, GBV nucleus, JUNTOS theater group), conservation threats exist throughout the BZ. Currently, measurable change in a specific threat cannot be directly linked to Ecohealth for multiple reasons including data limitations and the time lag between cause and effect. On the other hand, there is widespread belief that offering communities health interventions, and delivering reliably on these health activities, is helping establish trust between the Park and these communities. Trust is a critical ingredient for the two partners, together with others, to work collaboratively to increase livelihoods and local development while reducing conservation threats. This is especially the case in some communities, e.g. on and around the mountain, which have historically been Renamo (opposition party) strongholds. In this regard, GRP including Ecohealth serves an especially important role in expanding access to these remote, vulnerable areas because Park-affiliated interventions like health are welcomed and government involvement, while intrinsic, is not politicized. The value of this cannot be quantified but is anything but inconsequential.

Similarly, Ecohealth's ability, with MSGH support, to contribute meaningfully to achieving health outcomes has increased government trust in GRP in terms of its commitment to local development. While ecotourism from a restored and functional Park is conceived as the main "economic engine", GRP appreciates that other, complementary, interventions are required to meet critical social needs like health and education. The MOH has seen and now believes in GRP's dedication to the latter. The value of this is also hard to quantify but Park Senior Management understand its positive impact.

While some support has extended beyond the 6 focal communities, for various reasons Ecohealth is targeting these 6 and emphasizing development of its "full package" in these areas. In considering "scale up" and evidence in support of scaling up, an important question is whether scale up would involve Ecohealth promoting the "package" in more places, focusing on improving package effectiveness in the 6 communities, reducing the "package" interventions or some other configuration? As transportation is one of the key barriers, thinking practically, any Ecohealth scaling should consider only what can be supported given the resources on hand. This means that without a substantial increase in number of vehicles, Ecohealth cannot expand geographically to many new places. *Another key scale question is whether it is more important to GRP to extend MOH relations to a new district (e.g., Nhamatanda, where the survey baseline was conducted, Ecohealth trained some matrons and various conservation threats exist) or to maintain and strengthen relations with the Gorongosa SDSMAS, but focusing in on strategically sensitive areas and needy communities (e.g., around the mountain)?*

As the mountain sector of the Park is within Gorongosa District and this sector is critical to GRP's conservation goals, linked to ecotourism and development goals, *focusing Ecohealth attention in this geographic area seems a strategically prudent scale up option.* Adequate evidence exists that offering health interventions in these communities could "open doors" and begin to establish or strengthen trust – a critical initial step.

In terms of which interventions, health needs in most communities are many and considerable evidence (e.g. published studies) exists regarding which health interventions have proven to be the most cost-effective worldwide. Of these, the MOH has its priorities and all are important for different reasons. On the other hand, funding sources often mandate, or strongly suggest, which interventions can be supported. During this mid-term assessment interlude, taking into consideration these evaluation findings, it is suggested that GRP/Ecohealth *identify the range of health interventions possible and consider which will best contribute, in the long-term, to achieving GRP's overall goals*. That analysis would help inform future decisions regarding any scale-up.

Based on Ecohealth activities to date, a reasonable strategy might be to *continue basic support, but at a reduced level over time, to key MOH programs* (e.g., APEs, mobile clinic, health co-management committees) to maintain good MOH relations and contribute generically to improving health outcomes in the district, in particular in BZ communities in Gorongosa District. Maternal, women's and child health interventions such as facility births, HIV testing, IPTs, bednets and family planning are obvious candidates to maintain as a health focus.

This could be complemented by *more intensive, targeted support to a select number of health activities, in select locales*, that also directly and verifiably reduce conservation threats, e.g. nutrition linked to food security, conservation agriculture and water. The latter could be limited initially to a few communities around the mountain, increasing over time as documentation verified the value of linked interventions to achieving health/nutrition, development and conservation goals. MSGH could play an important role in this regard, helping establish solid "operations research" efforts to validate the impact of linking these interventions in time and space. Scientific Services offered to share datasets and collaborate on any analyses. Pairing MSGH health/medical trainees with natural science counterparts on such studies should be considered, as should incorporating Mozambique students from these domains.

## Gender Equity

*How much are women and girls at the community level benefitting from Ecohealth activities? Are there any special efforts being made to advance gender equity?*

### Internal

Equity is an important focus of Ecohealth's efforts, in particular gender equity. Attention to gender equity includes staff balance within the Program as well as ways in which Ecohealth directly contributes to community health and well-being. Within Ecohealth, the Program Manager and Assistant positions represent both genders (female and male, respectively). The gender balance will remain when the Assistant assumes the Manager position as there is now also a Technical Advisor position (female). Additionally, there are two clinically-related positions (clinical supervisor and clinical advisor) that also represent both genders as do visiting MSGH staff and trainees. Within GRP overall, to date all Department directors have been male. Recently, a new female Director of the Community Relations Department has come on board that begins to balance inequities in GRP senior management.

## *Program Support*

As mentioned elsewhere, initial plans were for there to be two CHWs per community with a 50/50 gender balance. When Ecohealth agreed to support the MOH and its community strategy (rather than its own), the selection of APEs fell to communities themselves. Despite Ecohealth encouragement of an APE gender balance, in the end, most APEs selected were male. On the other hand, all matrons supported by the Program (and traditional birth attendants historically) are female. The two cadres work in complementary ways in focal communities and between the two, there is good gender balance.

The one health co-management committee visited reported that, despite the desire for gender balance, there are only 3 females out of 12 committee members. The GBV nucleus includes teachers, a youth group representative and someone from the Domestic Violence Unit Cabinet as well as representatives from the Departments of Health, Education, Justice, Agriculture and Social Welfare. Overall there are six female members. As mentioned elsewhere, the team was informed that the majority of community NRM committee members (a complementary target audience for other Programs within GRP's Community Relations Department) are male, in part because many are conservation officers who are male. Of the few female members, none occupy president positions.

## *Evaluation Interviews*

Among the evaluation group meetings and interviews held, the following gender balance was observed: among district and provincial MOH key informants, the director position represented both genders and among interviewees, 2 were male and 4 female.<sup>37</sup> This reflects GRM attempts to balance gender in senior management positions. For the health co-management committee meeting, 4 members were present, none were whom were female. The females including matrons live in more remote areas covered by the committee so could not make it to the interview. This is an important observation for the Program to consider in terms of not only ensuring female membership but also active participation of females in group decision-making. For the GBV nucleus interview, of the 5 members present, 1 (agricultural sector) was female.

The male/female breakdown of attendees in the 3 community interviews conducted during the evaluation is provided below. In all communities visited, both traditional and official leaders were present – in all cases they were all males. When asked, the team was informed that the policy is for there to be at least one female representative within leadership at a higher (*nfumo*) level. For the 2 plains communities visited, there was good representation of a variety of community members and groups, including water users, at the meeting and thus of males and females. At the mountain community meeting (Nhancuco) given larger distances, only a select group was present including community leaders and the two health cadres supported (APEs and matrons). The team did not specifically interview community NRM committees although some members were present during community interviews.

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<sup>37</sup> The District MOH Director for Gorongosa is male and the Chief Medical Director is female. The other District key informant present representing Health Promotion and Disease Prevention is female. The Provincial MOH Director for Sofala is female, the HIV/AIDs Response informant also female and the International Cooperation Unit Chief is male.

Community	APEs		Matrons (all F)	Leaders (all M)	Others		Comments
	M	F			M	F	
Nhancuco	1	1	3	4	-	-	No other community members
Mbulawa	1		5	3	11	12	Multiple community members, including 4 women with children
Nhanguo	3		5	4	17	11	Multiple community members, including 3 women with children

### *Program Beneficiaries*

In terms of community beneficiaries, women are an Ecohealth focus. This is reflected in Program support to matrons who specifically target maternal health via e.g., facility- based births, ANC/PNC, RH/FP etc. Ecohealth is piloting their IGA with the same group. Not only does this improve sustainability of matron activity via improved economic security but this also presents a positive model of income generation for other females in the community. Everyone benefits from APE and mobile clinic efforts including infants that benefit from mobile clinic growth monitoring and immunization. Mobile clinics also emphasize maternal health through their ANC (including HIV testing and referral), RH/FP and PNC services.

Women in particular will benefit from reduced domestic violence -a focus of the GBV nucleus -that often occurs during pregnancy. Young girls of reproductive age are a particular target for the GBV nucleus that aims to reduce child abuse of all kinds, including early daughter marriage. Matrons promote extending the age of marriage, or sexual debut, in their communities through discussions in house to house visits and group meetings regarding the health risks of youth pregnancy/delivery. As suggested elsewhere, an important strategy for extending age at pregnancy is keeping young females in school. Information sharing and ensuring availability of FP services to young females are two other key strategies.

Gender equity is a basic principle of the PHE approach that Ecohealth assumed as its Year 2 framework. PHE initiatives aim to engage multiple stakeholders: women and men, young and old, farmers and others, etc. so that there is greater buy in and momentum for social change, including improved gender equity, in the context of sustainable development. This is a prerequisite for improved community development overall which is one of GRP's key goals. Ecohealth's past support to water conservation and future support to conservation agriculture and nutrition contributes in this regard, over and above its clear contribution to improved health in the area.



Figure 9 Youth theater group, Juntos, during a community event in Mbulawa.

## Challenges and Opportunities

### Challenges

Various challenges have been mentioned throughout this report in the context of responses to specific evaluation questions. Some are repeated below together with other challenges highlighted during the evaluation process. Opportunities presented by some of these challenges are presented in the next section.

### Access

Large distances, poor roads and lack of transportation are major issues limiting Ecohealth (and GRM/MOH) impact. Ecohealth has 1 motorcycle, a vehicle and 1 ambulance, recently acquired, to support all its efforts (including its support to the MOH). While there are other vehicles available within GRP, it can be a challenge to coordinate and access them.

The ambulance was purchased to provide emergency transportation for GRP. When not in use, the vehicle will be used to support mobile clinics and/or supervisory visits. While emergencies are a major community need, the ambulance is not intended for community emergencies as this would supersede capacity. Thus, community access to transportation for health emergencies (in fact, for use of health services in general) remains a major obstacle.

The MOH readily acknowledges that it does not have enough resources to reach everyone to meet their health needs. The Ministry, and by extension, Ecohealth, has tried to fill access gaps at the local level through its APE program, mobile clinics and support for health co-management committees. Ecohealth has further extended this to better cover women and child health needs by supporting matrons.

Despite these efforts, gaps remain. Coverage areas for both the APEs and matrons are often large. In one area visited, some houses are 15 km + away and therefore the APE responsible for the area has not yet reached all houses during this first year. One of the Ecohealth-supported matrons lives there so is able to “cover” some households but she mainly addresses health needs of women and children.<sup>38</sup>

Community members interviewed including leaders unanimously expressed their desire for more APEs and matrons and many leaders shared a desire for their mobile clinic structures to be made into clinics. In the mountain community visited, as both the mobile clinic and hospital are far away from many communities (requiring walking up and down hills for ANC/PNC visits and some women that don’t leave early to go to the maternity hostel end up delivering on the road), the leaders strongly voiced the need for a car if they could not have their own clinic with a maternity ward. Even where there is a partially-functioning clinic (Nhanguo), community members say it is too far away thus it only sees a few patients/day (i.e., it is not being used to capacity).

From the conservation perspective, APEs are also considered an important vehicle for helping reduce threats, by serving as additional “eyes and ears”. *In this regard, geographic coverage by APEs is considered too low* because the APEs in other districts are not supported by Ecohealth and have therefore not received environmental education. In one Nhamatanda district Ecohealth supported the training of matrons but is not involved in implementation and follow-up. In all other 4 BZ districts, Ecohealth has no reach.



Figure 10 APEs getting a ride home on the Ecohealth project car after a quarterly statistics review.

<sup>38</sup> In another community visited, with 3 APEs, all houses have been visited 2-3 times already, revealing inequities among communities in ability to reach community members with community-based health services.



### *Clinic-based services*

A key goal for Sofala Province is to expand access to health services through increasing the number and distribution of service delivery structures, i.e., health centers. Specifically, the DPS plan is to build 3 new health centers/year (up from 2/year).<sup>39</sup> Criteria used historically for determining where to place a new health center were that there should be one for every 7,000-15,000 people and that everyone should have access to a health center within 10 km.<sup>40</sup>

As noted throughout, the MOH appreciates that there is a major gap in the health system in terms of community level access that NGOs help fill through support to the local level. Pre-Ecohealth, GRP considered addressing the need for more health facilities by supporting clinic construction. A clinic was built at Park headquarters in Chitengo that continues to operate to date. And, when the CEC was established, GRP included a small clinic there. Early on, GRP supported the construction of another clinic in Vinho and, with the community's share of the 20% Park revenue, GRP helped Nhanguo community construct their own facility.

Since Ecohealth began, support to the Park clinic in Chitengo has fallen under the Program's portfolio. However, the clinic is distant to Ecohealth headquarters (at CEC) and the nurses posted there have operated for a long time independently (i.e., pre-Ecohealth). This dynamic presents challenges to effectively supervising services at this clinic. And, despite having a clinic at CEC since being built, there was no health care provider assigned there to give services until just recently. When MSGH staff visit Gorongosa, clinical issues are brought to their attention but this is not within their official scope of work.<sup>41</sup> Also, MSGH's on-site Training Fellow recently assessed the clinic for adequacy and noticed that it is lacking some important basic medications (e.g. aspirin).

Vinho health center is not located in Gorongosa District and thus falls outside of Ecohealth's current geographic focus. Thus, while constructed with Park support, it does not continue to serve as a platform for health system strengthening by Ecohealth. In terms of the Nhanguo health clinic, as noted, the NRM committee of that community decided to build its own clinic using its Year 1 distribution of 20% Park revenues. GRP helped subsidize this effort by providing additional labor, transportation, materials and equipment. However, there was not enough money in the first distribution to complete the facility as designed (i.e., lacking an office for the NRM committee to use) and thus the community is waiting for their 2<sup>nd</sup> distribution to complete construction. Additionally, as noted in the footnotes, the government no longer supports (i.e., posts a provider at) lower level facilities. Unfortunately, the Nhanguo facility does not meet the criteria for MOH support as a CSIII as it lacks a maternity ward and a place for (2) posted nurses to reside on-site. Thus, while the Nhanguo facility represents a good-will effort on the part of the community and GRP to support community involvement in and ownership of their own development, benefitting from ecotourism and their share of Park revenues (a key GRP goal), it has been only partially successful as the clinic is not fully functioning.

As government nurses are not (yet) posted to the clinic, the community APEs take turns operating out of the clinic (1 APE at the clinic and the 2 others working in the community, on

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<sup>39</sup> For a number of reasons, the government no longer supports CSII level facilities any more – just higher level ones (CSIII's) that have a maternity ward and at least 2 providers (one to do deliveries and 1 to do home visit).

<sup>40</sup> The Provincial Health Director shared that these criteria need updating to match current realities.

<sup>41</sup> During the time of the evaluation, Ecohealth discussed this issue with senior management and they agreed that a nurse, coming from Chitengo, would be posted at CEC.



a rotating basis). The matrons help the APEs and are doing a good job at keeping the clinic clean, following MOH standards. However, the clinic receives a drug kit only half the time it is supposed to from the government and when the evaluation team visited, they were missing key medications (e.g., for pain/fever and to treat worms and antibiotics).<sup>42</sup>

Of note, one of the APEs shared their preference for working in the community (versus at the clinic) and reasons for this. For one, apparently community members have to pay for medication (e.g. 5 meticaïs) if obtained at the clinic whereas if the APE gives it to them at home, it is free. This and distance factors result in only a few patients/clients attending the clinic each day. Whereas the APE may provide services to an average of only 2 people/day in the clinic, he services 10-15 in the community - why he prefers working in the community. Also, the APEs appreciate that they can educate the whole family when they are visiting households, promoting health and disease prevention that they consider more effective/efficient than focusing on just patient treatment at the clinic. The above begs the question of the most effective combination of APEs, mobile clinics and health centers to prevent, promote and treat in order to optimize health outcomes at the community level. For GRP, the question also includes contributing to improved conservation and overall development outcomes.

### *Mobile clinics*

Mobile clinics function as a way for the MOH to bridge the gap in community access to health services from a *clinical provider*. As noted, the schedule for Ecohealth support to mobile clinics is once every 45 days. For communities where Ecohealth isn't providing transportation support, mobile clinics are likely to be less frequent – a disparity in access. According to the MOH, there is currently no standard for how often mobile clinics should be offered (quantity) nor what services should be included (quality).

Related to quality of care, as noted, which providers join the mobile teams is not fixed, i.e., they join on a rotation basis. This protocol helps ensure there is adequate coverage in static facilities, e.g., Vila Hospital, but makes it difficult for Ecohealth, through its MSGH Training Fellow, to systematically help address quality issues identified through its QA assessment. Additionally, where Ecohealth and the MOH partner to provide mobile services, sometimes the MOH has not been able to deliver on its contribution e.g., medications, soap, water, etc. This is likely to be the case also for communities where Ecohealth is not providing support. Finally, in communities with Ecohealth-supported matrons, the idea was for there to be follow-up and coordination between pregnant women identified in mobile clinic and the matrons who do home visits. To date this is not working, in part as it difficult in practice to reconcile the two registries.

### *APEs*

Despite Ecohealth commitment to serving BZ communities, in response to MOH requests, not all APEs supported by the Program operate within the BZ. And, the MOH has asked for Ecohealth to provide support to another 12 APEs so that all district communities will be APE covered. It is acknowledged that APEs serve a very useful role – in terms of both health and

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<sup>42</sup> Sometimes the APEs request important medications using the alternative drug requisition system but they don't always receive them via that system either. In some cases, this is due to a stockout in the whole district, e.g., mebendazole.

conservation outcomes - and APEs cost only \$50/month to support. However, a few of the communities needing new APEs may not be located within the BZ.

As described elsewhere, initial GRP thoughts for Ecohealth were that community health volunteers would be identified and supported by the Park. Part of this plan was for there to be (at least) 2 APEs/community, one male and one female to ensure gender balance. After discussions with the MOH, this idea was revised to support the Ministry' APE revitalization program. Under the latter, APEs are selected by the community –an important ownership protocol. Despite Ecohealth attempts, communities did not necessarily identify 2 APEs nor ensure a gender balance however in who they proposed. Even in cases where a female was proposed, the length of APE training could have been a deterrent for involvement by some. In at least one known case, a husband did not allow his wife (selected by the community) to assume the APE role as he did not want her to be away from the house for so long (5 months including a practicum).<sup>43</sup>

MOH policy calls for a monthly full-day, on-site supervision of APEs by referral health center staff, complemented by periodic supervisory visits by district and other MOH representatives. This involves accompanying the APE on their household visits throughout the community. However, due to time, distance/transportation and other resource constraints, such supervisory visits have been difficult to conduct. In fact, there is no evidence that the APE supervisory policy is being well implemented in any locale. To this end, during the evaluation, SDSMAS asked Ecohealth for additional support for district clinicians to supervise 2 new communities, once a month. Their rationale was that supervision must include a clinical person as APEs are providing some clinical services. Given the resources required and logistical challenges of conducting such supervision, an important question to consider is what explicit health gains are realized through supervisory visits. Engaging the MOH in addressing this question will help ensure that the frequency and focus of such visits leads to maximum gain.



**Figure 11: Provincial supervision of APEs in the community of Chitunga.**

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<sup>43</sup> Fortunately, in this case the woman was able to stay involved and serve as a matron.

## Matrons

The key role of the matrons is to improve maternal and child health, in particular by encouraging and facilitating women to have a facility-based birth and attend ANC/PNC visits. To help address distance issues, maternity waiting hostels have been established at rural health facilities (with support from other NGOs).<sup>44</sup> The “policy” is for pregnant women to go to the hostel 3 weeks before their due date but matrons generally don’t know the correct date. This is due, in part, to inaccuracies in the clinical estimation provided to the woman but also because some women are hesitant to share the clinically-determined due date because of superstition (i.e., bad luck that sharing this information could bring to the newborn).

In one of the distant, Ecohealth-supported mountain community, matrons accompany women to the waiting hostel at the hospital as soon as the woman says she thinks she is due, which could be a month or more in advance of delivery. This puts a strain on the health system as well as the pregnant woman’s family as she will be away for an extended period. Visits by family members including husbands to provide food and company require a long journey – all of which could act as deterrents to other women/couples to seek a facility-based birth. In this community, the matrons travel to the hospital at least 1/week to accompany pregnant women for various reasons, including delivery. This involves considerable time and effort on the part of these health volunteers themselves, including time away from their own families and away from routinely attending to other pregnant women and infants in the community.

As mentioned, while respected in the community for their important work, sustainability of Ecohealth’s matron activities is questionable in the absence of a funded MOH program for this cadre. The Program is trying to ensure self-sufficiency of this cadre through a supervised IGA activity. Considerable effort has been put into identifying 1+ products, training the matrons in making the product(s) and marketing them to Chitengo’s gift shop and some zoos. To date, initial payment to the matrons has come out of Program funds as “proof of principle” that the process can work. However, the repayment scheme from zoo and gift shop sales has not yet been fully worked out – an important aspect of the self-sufficiency model. Based on demand and sales to date, it is envisioned that the matrons could make 3,000 meticaïs/month – a good sum of money for them. However, this is more than the APEs get for their community health care role (1,200 meticaïs) that could present an equity problem.

## HIV

### Testing

Sofala Province is considered a high HIV rate/risk area due, in part, to two main transport routes within the province; the route from Beira to Zimbabwe (EN6) passes near the GNP as well as the main north-south route of Mozambique (EN1). However, the average test+ rate to date in Ecohealth communities has been relatively low (1%) compared to 6% for the district overall. This may reflect that the main target for mobile clinic HIV testing, until very recently, has been pregnant women in remote, non-urban, communities. MOH policy is to encourage couples testing but male partners do not usually accompany their pregnant wives to mobile clinic sessions.

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<sup>44</sup> e.g. ComuSanas

## Follow-up of test positives

The DPS has 2 ambitious HIV goals: 1) for 80% of HIV test-positives to successfully enroll in ARV treatment and 2) to reduce vertical transmission from 11% to 2%. Currently, only 45% of test+ children are on ARVs and 60% of test+ adults.<sup>45</sup> Community members, especially pregnant women, get tested at the mobile clinic and sometimes at static health facilities, where available. If results are positive, it is up to the people themselves to sign up/ enroll in an ARV program. Matrons routinely talk about PMTCT and encourage HIV testing, enrollment in ARV treatment and adherence to treatment; and, both APEs and matrons encourage treatment enrollment during home visits and community/group talks. However, as noted above, test positives do not always tell even their spouses and so neither the matrons nor APEs know if any HIV+ cases exist in their communities.<sup>46</sup> As HIV testing status is confidential, if test positive persons decide not to take action, there is currently no easy way to assess “loss to initial HIV testing.”

Furthermore, while access to HIV testing has increased, there are still only a limited number of ARV treatment centers in the district. For Ecohealth communities, treatment is only available at Vila Hospital. This poses an access issue to test+ community members. The intent by the MOH is for all health centers to ultimately serve as ARV treatment sites -to get ARVs closer to patients -but currently this is not the case.

In the original proposal, GRP proposed that “activistas” would help increase ARV treatment/compliance rates. Activistas follow-up with patients enrolled in ARV programs who do not come on time for their treatment medications. However, they do not know who tests positive but does not register for ARVs. In the past, CHASS-SMT trained activists to identify treatment drop-outs. CHASS was/are willing to share their strategies, training/education materials and assist Ecohealth to train cadres targeted by the Program. Unfortunately, however, activists operate only in certain areas (e.g. near Vila Gorongosa), not in GRP BZ communities. In the absence of funding specifically for new activists, this potential strategy for reducing treatment drop-out has not (yet) been extended to Ecohealth focal communities.

## Home-based care

While there is some NGO support for home-based HIV/AIDS care in/near Vila Gorongosa, there is currently no government program or NGO supporting home-based HIV/AIDS care in GRP BZ communities.

## Other diseases

### Tuberculosis (TB)/Leprosy

Upon request by the MOH, Ecohealth supported TB/Leprosy training for APEs as district TB testing targets were not being met. TB was mentioned in one community as an important disease among males requiring additional health care attention. And, as TB infection is

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<sup>45</sup> Of note, the capacity to conduct CD4 counts is currently only available in Vila. To meet treatment and health goals, the DPS expressed their desire to have all test-positive pregnant women be eligible for ARV treatment, without a CD4 count. This would help reduce the MTCT rate to 2%.

<sup>46</sup> If people travel to the hospital frequently for medication, they assume they may be HIV infected.

frequently higher among HIV+ patients, this fits under Ecohealth's objective to increase access among vulnerables to preventative health services (as well as community-based care and treatment) of the most common diseases. However, as something managed by the MOH, the extent to which APEs are using the skills acquired during this training is not under Ecohealth control.<sup>47</sup> This is an example of Ecohealth responding to a MOH request, important to maintaining Ministry support, but without the ability to assess the health effects of such support, or contribution to GRP conservation goals.

## Malaria

Malaria is one of the diseases considered a priority by community members visited. The other is diarrhea. Malaria prevention for pregnant women is a focus of mobile clinics including IPTs and mosquito net distribution. The Ministry recommends 5 ANC visits to ensure coverage of the 3 IPTs.<sup>48</sup> As the majority of pregnant women are not getting their 3<sup>rd</sup> IPT dose (the district rate is only 13%), additional strategies are needed to increase coverage rates. During the evaluation, a community-wide distribution of mosquito nets was being planned by district authorities. However, interviewees shared with the team that families are known to use mosquito nets to cover their sorghum as well as for fishing.<sup>49</sup>

## Immunization and childhood preventable diseases

The DDS shared with the evaluation team that an important issue is the lack of follow-up after vaccination among children 3-5 years. The MOH goal is to follow all children through age 5.

## Burns/cuts/infected thorns

These conditions were cited by community members as frequently experienced and that APEs are currently not capable of adequately addressing. The policy is for APEs to clean any wounds with soap and clean water and then to refer the patient, to avoid the condition worsening (as they do not have sterile supplies to adequately treat). In many cases, however, the referred patient does not seek additional care as the distance to a health facility is too far. Their condition worsens as the patients ignore the wound or treat it themselves. In addition to worsening health, the community feels their expressed need for community-based care for such conditions is not being considered by the health system.

## Zoonoses

GRP's Conservation Department shared that Ecohealth needs to be careful in terms of what is introduced as an alternative protein food source to avoid zoonoses or risk of domestic animal-wildlife disease transfer (e.g., disease that could be transferred between domesticated chickens and wild guinea fowl). The latter could result in unanticipated morbidity/mortality and negative ecotourism/economic consequences.

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<sup>47</sup> In a recent "balanço" with the APEs, Ecohealth learned that APE efforts related to this training were not being well monitored/managed by the district that has been addressed. To help with activity monitoring, Ecohealth just added this activity to the APE form.

<sup>48</sup> The team discussed that 4 visits would likely suffice to meet the 3 IPT dose goal.

<sup>49</sup> To address this, Ecohealth just added mosquito nets APEs find being misused to the new APE form and APEs will now counsel families about this – an example of continued learning and adaptive management.

## Family Planning

Despite SDSMAS acknowledgement of the importance of FP and the interrelationship between malnutrition, child spacing and FP, the range of contraceptive methods available in BZ communities through the health system is limited. Depo-Provera is sometimes but mostly not available in mobile clinics and for IUDs or implants, women have to go to elsewhere.<sup>50</sup> Consequently, the major method used is pills.<sup>51</sup> Additionally, contraceptive stocks are based on last year's demand that was much lower compared to this year (as a result of APE, matron and mobile clinic FP promotion).<sup>52</sup> Such stock-outs result in part from a "push" versus "pull" contraceptive supply system. DKT and PSI are both involved in strengthening FP efforts in the country but they mainly work in urban areas. Ecohealth BZ communities are too rural /distally located for these two organizations to lend support without additional targeted funded.<sup>53</sup>

There are a number of missed opportunities for promoting FP including during missed ANC/PNC visits. However, many women will not make a decision regarding contraceptive method uptake without their husband present and the latter do not routinely attend ANC or PNC visits. Of importance to consider, a sentiment expressed during the evaluation is that Ecohealth needs to better address FP as a male not just a female issue. In the 6 focal communities, diseases like malaria and HIV are more visibly being addressed than FP. However, the team was told that generating demand and meeting unmet need for FP needs to be done with care, emphasizing health/empowerment benefits, as sensitivities remain from colonial times regarding dialogue about population growth.

## *Rights/Gender*

### Early marriage

In BZ communities, first menstruation among females signals that they can reproduce and females are encouraged to "marry" and reproduce, starting from this age. Ecohealth baseline results showed that the average age of marriage among those surveyed was 15. While the legal age for marriage is now 18 years, parents can legally have a female "emancipated" without her consent so she can be married off before she is 18. This can be done without the female child's consent. On the other hand, community leaders shared with us that these days it is both the youth themselves as well as parents that desire to "marry" young.<sup>54</sup>

### Child rights

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<sup>50</sup> When Ecohealth's Program Manager enquired about IUD/implant uptake from the hospital over the previous year, there were no implants inserted and < 10 IUDs, meaning long-term method uptake in the area is very minimal.

<sup>51</sup> In communities relatively close to Vila, matrons report some women are now using IUDs or implants.

<sup>52</sup> In particular, there is not enough stock of Depo-Provera to meet demand.

<sup>53</sup> Additionally, despite high fertility rates, community population sizes are relatively small and communities geographically disperse. This means that impact in terms of number of new users per dollar/effort spent to enroll could be less than more populated, densely spaced e.g. urban areas. On the other, from an equity perspective, all communities/couples deserve adequate access to FP.

<sup>54</sup> In these areas, marriage is less likely to be officially sanctioned but rather reflects when a man and women begin to live together (in union).



In these rural communities, children are still considered the household work force. Children work hard in the communities and a priority is for children to work on family “machambas” (farms) to collect water and to care for younger children. Community members don’t consider that using children to do this kind of work is “abuse” as children are considered a means of getting income. Thus, an important challenge is to help community leaders understand new child laws including those pertaining to child labor. The new laws are based on understanding that children are still developing and it is not good for their development to continuously work and not eat well. Community members also do not appreciate that domestic fighting in front of children can be psychologically damaging.

## GBV

Previously, GBV cases were only identified via the hospital emergency rooms. Thus, the number of cases identified reflected just the tip of the GBV “iceberg.” The GRM, with USAID support, is actively trying to strengthen case identification and management and Ecohealth is engaged in this process through a number of activities (e.g., GBV nucleus). GBV monitoring is based at the hospital however and the package of GBV interventions around GNP is only currently available at Vila Hospital. This is an access problem especially in terms of providing HIV prevention medication in time (as the GBV assessment has to be conducted within 72 hours of sexual abuse). Current policy dictates that a woman who suffers abuse should be monitored for 6 months. However, a woman may not return to the hospital after being abused for many reasons. This reduces overall effectiveness of GBV monitoring.

## Food security

Food security is considered an issue in most BZ communities. The extent of and factors contributing to food insecurity in a number of BZ communities were documented in an Ecohealth study. According to that study, some communities do not have adequate food supplies whereas in other communities, the issue is more a lack dietary diversity.<sup>55</sup> Ecohealth’s USAID funding covers food security interventions among vulnerable populations but there has been limited capacity to date within Ecohealth and GRP as a whole to address this issue.

The DPS and SDSMAS both concur that there is a persistent problem with malnutrition in the area. One intervention they need help with is supervision of their Model Mom Program. This would require more support for transportation - already a challenge for Ecohealth with its current portfolio.

## Water

Ecohealth supported the establishment of wells in 3 communities, with one more planned, where lack of access to clean water was identified as a major issue during the APE community assessment. However, of 3 completed, 1 is not working as Renamo soldiers took it over (it is a traditional structure as the consulting group involved could not locate a water source for the well despite many attempts). Additionally, where the wells are working, they are waiting for training by the government and parts to fix the waterspout.

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<sup>55</sup> For example, on the mountain, certain foodstuffs grow in some places but not in others. Overall, there is a good diversity of food available but community members need money to buy foods they themselves don’t grow, so the food tastes better and is more nutritious.

The MOH shared that they need 12 more wells for adequate safe water coverage in the district. However, in addition to Gorongosa District, there is a lack of good access to water in communities from other districts around the Park. Irrigation systems divert water and pollution comes from ore mining but there is little intervention at the district/provincial level to ensure water quality. As there is no government entity regulating the water, GRP has undertaken this task.

Where wells are in place, people drink from them and the health system also distributes "certeza" or bleach to purify people's water. Apparently however many community members do not routinely use their "certeza", rather, they store it until a health worker visits the household and then they use it. Additionally, often people go to the river to clean their clothes, to fish or just to have fun and sometimes they consume dirty water that way. For this reason, diarrhea cases still persist as a common community problem.



Figure 12 Inauguration ceremony for a new well in the community of Mbulawa.

### Conservation

In the recent workshop about the Park's mountain sector, GRP recognized that a higher level of trust needs to be developed between the Park and community members if Park restoration and conservation goals are to be achieved. There are people living on Mount Gorongosa (often growing corn for subsistence and as a cash crop) and others are encroaching on Park lands to engage in cash crop production (mainly corn but also other crops). There is interest in promoting responsibly grown coffee but there are also some "red flags" with coffee: a) agrochemicals may be a problem; b) when wet processing, there can be heavy contamination of the water sources.<sup>56</sup>

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<sup>56</sup> The new emphasis in certification often incorporates this as a desirable safeguard.

On the mountain there is no good transportation, schools or clinics. On the flats there is an issue of water. Labor in both places remains a critical problem. Complicating things is that some of the local land is set up as plantations owned by e.g. Portuguese who hire local workers to cut down trees, and also spray pesticides (against banana disease). GRP recognizes that land tenure is a major concern that somehow needs to be considered when developing its Conservation Agriculture interventions.

Many tree seedlings have been planted by GRP but recently the nursery was burned and previously some of the grown trees have been cut down. An ecotourism event in communities is to visit the forest/indigenous trees. However, various tourists have expressed how upset they were when they visited the waterfall as they saw trees cut down/burned. Meaning, deforestation and burning is not only having negative ecological impacts but is also becoming a deterrent to ecotourism – the opposite intention of GRP’s model. In terms of the former, levels of understanding about the “ecological tipping point” differ between the scientists, community members and others. Thus, there is thus a critical need to educate about this without discouraging or “disasterfying.”

On the flats, the NRM committees indicate that they do not know who is burning as they just see the paths going through their villages. GRP’s rangers have limited communications with headquarters when they are on patrol so information about who and when burning is occurring is not happening on an effective “real time” basis. Regarding poaching as a threat, while less poaching is being reported where Ecohealth is supporting APEs, this could mean that the activity is just happening in more clandestine ways or that poachers are accessing the Park different ways. *More integrated and frequent analysis of disparate GRP datasets would help clarify this.*<sup>57</sup>

While ecotourism aims to be an economic engine for the area/province, there has only been 2 distributions of Park revenue funds to BZ communities, and none this year. The team was told that all Park revenue first goes via the Ministry of Tourism and that for some reason this has been a bottleneck in terms of subsequent distribution. Also, currently, the 20% return to BZ communities from Park ecotourism revenue is not “performance-based.” GRP is in the process of developing and testing (in 3-4 communities) contract conditions to render revenue receipt by communities contingent on meeting select contract criteria. While a good idea, as currently worded, the contract conditions are likely to be difficult to “operationalize”, both in terms of collecting the required data as well as using the data to determine eligibility for revenue funding.

### *Coordination/Relationships/Partners*

Partnering is an Ecohealth “best practice” and because Ecohealth has worked so well/closely with the MOH, the Ministry considers the Program their agent.<sup>58</sup> While this increases ownership, trust AND visibility, all positive outcomes, it also means that the MOH will logically ask the Program to go places considered a priority for the MOH – not necessarily GRP focal area- and add topics considered health priorities for the MOH – not necessarily topics that could also contribute to reducing conservation threats. This occasionally puts

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<sup>57</sup> GRP rangers don’t (yet) use GPS units to show where their *controlled* burns are which would need to be excluded to adequately conduct burn analyses.

<sup>58</sup> On the conservation side, MINAG is not as actively involved/engaged as the MOH (or the Ministry of Tourism/Ministry of Economic Affairs) although that Ministry manages the BZ land.

Ecohealth in the difficult position of having to reconcile requests.<sup>59</sup> On the other hand, some mountain communities consider Ecohealth as representing the Park, not as agents of government entities. And, APEs in GRP- supported areas are dually considered health workers that also serve as Park agents.

Internally, there is room for improved coordination across GRP Departments including with Environmental Education and Community Planning to optimize GRP efforts. Regarding MSGH trainees, historically it has been difficult to find things for junior medical students to do as there are not a lot of clinical opportunities. Other issues involved providing the trainees with adequate support and logistical support for projects without adversely drawing on Ecohealth resources. As suggested throughout they could help with M&E, as some have to do, but this may not meet requirements/interests of MSGH's program nor the trainees themselves. Additionally, the MSGH Training Fellow is posted on-site to help support public health aspects of Ecohealth's work. To date, however, a considerable portion of her time has been spent addressing more clinical issues, in part as there was no nurse yet posted to the CEC clinic.

## Data

Ecohealth obtains a rollup of the APE health statistics from the DDS (not directly from APEs). This is a good practice as it avoids duplication of effort for the APEs. On the other hand, the quality of data (including completeness/timeliness/accuracy) on APE activity is subject to the challenges of the official MOH information system. The MOH told the evaluation team that it does not have good numbers for health planning (e.g. they don't have an accurate denominator for pregnant women to calculate % of facility-based births). Ecohealth directly manages matron data on this indicator but the two are not directly comparable (as the matron denominator is among her clients only).

In order to evaluate Ecohealth's impact on key indicators over time, data from its focal communities could be compared from the baseline survey supported by MSGH. However, that survey took a very long time to implement (two years) so the tool and procedures would need to be very much streamlined to make the effort worthwhile. Currently, Ecohealth does not have the ability to access the geo-referenced aspect of the baseline data and a general need is for place names (where operational) need to be better coordinated between the Conservation Department (ranger data), Community Planning (NRM committees) and Ecohealth datasets.

## Opportunities

### Clinic-based services

Given that SDSMAS would like to see the Nhanguo clinic become an official health center, and the preference of the APEs working there is to remain within the community, Ecohealth could collaborate with other GRP Departments to help complete this effort – initiated as a community-driven project with their share of Park returns. *This would help establish a positive model of how a restored Park and vital ecosystems can yield ecotourism income, in turn, serving as an engine for local development – GRP's overall goal.*

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<sup>59</sup> E.g., the MOH wanted Ecohealth to support another co-management committee but the communities there weren't part of the Ecohealth program so the Program indicated they couldn't.

Related to this, given persistent resource constraints, as the APEs routinely work house to house in the community, a potential question to raise with the MOH is whether only 1 (not 2) providers need to be posted to Nhangou by the government, at least initially, to reduce costs. As an alternative model, one of the 3 APEs could step in to help at the clinic, as done currently, on an “as needed” or permanent basis. This idea could be presented to the MOH as a “pilot alternative” to current CSIII requirements, to help the Ministry meet their health center coverage goals. Potentially, a MSGH student could assist in monitoring and evaluating how well the clinic works under this alternative staffing model, to help the MOH consider the value of such an alternative.

Within GRP, a nurse has recently been identified for posting (from Chitengo) to the CEC clinic. *The on-site presence of MSGH’s Training Fellow is an opportunity to work together to establish a model clinic at CEC that can be used, as appropriate, during Ecohealth trainings.*

### *Mobile services*

As there is currently no MOH standard for mobile services, *Ecohealth could work to help the MOH balance policies related to quantity and quality of the mobile visits.* This would help minimize disparities among communities in terms of access to quality care and promote a model that could realistically be implemented, over time, by the MOH. *Specifically, MSGH’s Training Fellow could work with the District Chief Medical Doctor to agree on improvements identified through the recent QA assessment that are critical for quality care but also feasible and therefore sustainable.* Further, Ecohealth could help introduce appropriate QA changes through trainings and/or modeling and mentoring during mobile clinic sessions.

### *APEs*

As mentioned throughout, APEs are considered by many as a particularly successful cadre for a number of reasons: 1) they are well respected by men in the community (in part, as many are male themselves) so can influence male opinions and practices; 2) this can lead to improved health outcomes among all, including women, if males are convinced that certain practices are important to embrace e.g., facility-based births and FP; 3) this also includes practices in other domains e.g., use of natural resources and fire setting which relate to sustainable development - a GRP goal; 4) the relationship between Ecohealth-supported APEs and the Park helps reduce conservation threats as APEs in the communities serve as additional “eyes and ears” to identify illegal activities such as poaching.

Ecohealth agreed to support a number of APEs for 2 years, after which the responsibility was to return to the MOH. This process could put a strain on limited MOH resources – especially considering that the DDS recently asked Ecohealth to support 12 additional APEs. The DPS Director shared that UNICEF is providing health support in the province and she wants to ensure that ongoing APE efforts can continue and/or expand, to take advantage of these monies. As attention to transitional support was one of the key MOH requests from the beginning (to reduce gaps in intervention support after NGO funding ends), Ecohealth is supporting the making of a documentary with Save the Children and World Vision to lobby for both more donor support and for the MOH to allocate funds for APEs to become sustainable.

In terms of new APEs, the DPS indicated that there are plans to train more APES but potentially in districts other than Gorongosa. This presents an opportunity for Ecohealth to

identify and *suggest communities around the Park where APE presence (MOH supported) could contribute in many ways: to achieving health, development and conservation goals, regardless of where Ecohealth itself is operating or plans to in the future.* GRP's Community Planning team shared with Ecohealth where they are trying to develop incentives for people in the Park to move outside. Having access to health services, including through APEs, is one such incentive.

Recently, the MOH trained 5 new APEs in less than the usual 24 weeks. This sets a precedent for reducing training time that could be advantageous if training time is a barrier to females serving in this role. *Ecohealth could explore conditions under which reduced training is acceptable* (e.g. if the APE selected previously functioned in this role, or as a traditional birth attendant, as they already have some experience) to potentially help reduce this barrier to APE service.

The above effort could be linked to the question of APE supervision as the two are related. Currently, the model for APE supervision is not working as it involves transporting clinical providers from their facilities (e.g. in Vila) to remote communities to accompany APEs during house-to-house visits. *Ecohealth could help the MOH determine how often, for how long and how APEs need supervising to inform the development of a feasible, post-training follow-up plan.* For example, APEs could be supervised when they visit the health center on a monthly basis, (providing services to facility patients and their families and/or through model simulation or role plays) using a checklist containing key skills the MOH feels need to be monitored. *MSGH's Training Fellow could help develop such a checklist, if not already in use, and MSGH trainees could potentially be used to pilot a revised APE supervision protocol to provide evidence of its value.* Post-training follow-up could be targeted more to ensure skills acquisition and subsequent, less intensive supervision could focus alternatively on site issues (versus clinical ability) that negatively affect skills application, e.g., availability of medications and educational materials. Any revised protocol for supervision frequency, which also serves to maintain APE motivation, should be organized to match clinical need with resource availability.

## Matrons

The matrons work hand in hand with APEs but focus more on women and child health. People respect them and some feel that they function like nurses. However, coverage is low and many stakeholders expressed that their numbers should be increased. Ecohealth's idea for sustaining matrons is to help them develop their own savings and loan association using the income generated through their handicraft sales. To help ensure greater balance between matron and APE income, *a proportion of the matron's income could be set aside to contribute to overall community needs that also reduce conservation threats.* This would further serve to link this Ecohealth effort back to GRP's development-related goal. If the self-sustaining matron model proves successful, Ecohealth could consider providing "seed" support (including training, supervision and IGA assistance) to additional matrons in other, strategically sensitive areas. *MSGH trainees could be used as a resource to help document the model and evidence of its self-sustaining success.*

A major challenge to matrons, especially in remote, mountain communities, is the long distances they need to travel to serve their patients, including accompanying them to the hospital for their delivery. Long distances are also obviously a challenge to the women themselves as is the long time spent away from home waiting to facility-deliver. *Ecohealth should consider use of available new technology, including mobile phone applications, to*



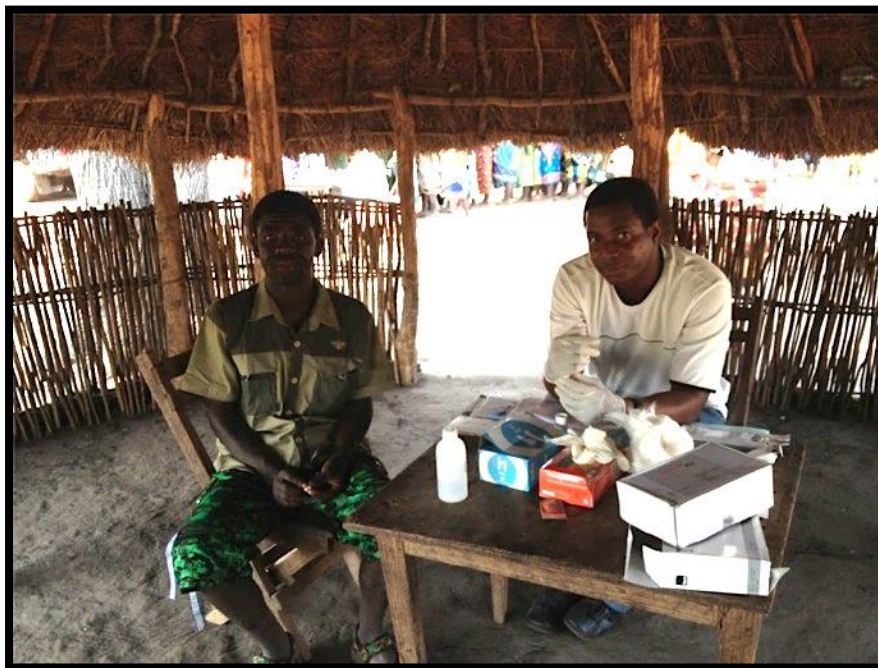
*help women identify their due dates more accurately, potentially in a way that would work around cultural superstitions regarding sharing due date information.* Mobile phone reception is not good in many places but is available in select locales and mobile phone health applications are continuously being developed and piloted (and funded e.g., by the Gates Foundation), this is another potential area of study by an MSGH student.

Other (non-technology based) ways to more accurately identify due dates also should be considered and tested. For example, communities routinely celebrate the full moon. Ecohealth could pilot a sex education effort whereby women are encouraged to pay attention to the last day of their most recent menstrual period relative to that celebration, to help them keep track of when they get or miss their period.

## HIV

### Testing

To help increase male HIV testing, Ecohealth has encouraged mobile clinics to include a tent for male services, should they be there without their wives. Otherwise, couples HIV testing is encouraged by the MOH. *To avoid stigma of men using the tent, mobile clinic teams need to ensure that a variety of services are routinely offered including – importantly – counseling about FP and different contraceptive methods available.* When the evaluation team asked community leaders if couples testing would be something people accept, they laughed, as it was a new concept to them. They then shared that people do not do this now as they do not know about it, i.e., it is not a social norm. However, the leaders would be willing to support couples testing in their communities if this were a health focus. *This provides an opportunity for Ecohealth not only to encourage this important practice but also to document how new ideas diffuse through a community, working with leaders to support the idea and with mobile teams to ensure the intervention is available and meets local needs/expectations.*



**Figure 13** New men's health station during a mobile clinic, offering HIV Counseling and Testing services.

## Follow-up

APEs are not clinicians but perform some clinical duties (why the MOH feels they should be periodically supervised by a clinician). As an important, local representative of the health system, *a question to pursue is whether it is “breaching confidentiality,” for APEs to be informed of about HIV test+ patients in their catchment area.* With this information, APEs could encourage tests positives to sign up for ARVs and also could help pick up patient medication when traveling monthly to the nearest health center for other reasons. At a minimum, APEs could help reduce loss-to-follow-up among ARV treatment enrollees willing to divulge their HIV status by picking up their medication at the health facility (if the patient gives them their card/prescription documents). To move in this direction, *this option could at least be offered to community members and supported by their leaders, so patients have the choice.* As with various other opportunities mentioned herein, with MOH approval, this process could be systematically introduced and documented/evaluated by a MSGH student (if preferred, in the context of “operations research”) to provide evidence to the MOH of the value of the new approach.

## Family Planning

Of importance, many interviewees shared their support for FP including community leaders. This is particularly noteworthy given comments by others that sensitivities remain from colonial times regarding FP linked to population growth. Some leaders astutely commented that there are not enough methods to choose from (mainly just pills). This presents Ecohealth with the opportunity to help meet this quality issue, known from many historic studies to affect contraceptive uptake and overall FP continuation.

Similar to the idea of picking up ARV medication for HIV test+ patients (as approved), APEs or matrons could pick up additional pill packages for their clients (as the latter are given only 5 weeks’ worth at a time) during health facility visits. Matrons who accompany pregnant women to a facility may have this opportunity even more frequently than APEs who return monthly. The district’s Chief Medical Doctor expressed support for community-based (CB) FP, as long as the first/new client visit was conducted by a clinician. This opens the door for Ecohealth discussion regarding *CB provision of Depo-Provera by trained APEs and/or matrons*, as is practiced in a number of countries (including Madagascar and Uganda). This would increase method choice, help clients choose their preferred method (as injectables are the method of choice for many), reduce transport time and time women need to spend away from home to successfully contracept and, in principle, reduce failure rates and unintended pregnancies (as use effectiveness rates are often higher for injectables than pills). In other countries, trained CB health workers (non-clinicians) are also able to effectively and safely initiate contraceptive use for select methods, as well as conduct new client visits. The team was told this approach is currently being piloted somewhere in Mozambique but for the short-term future in Gorongosa District, *CB distribution of select methods (pills and ideally, over time, injectables) during repeat visits would be something Ecohealth should consider promoting/exploring.*

Similar to the importance of couples HIV testing, *couples FP counseling should be promoted/facilitated by Ecohealth.* This is possible whenever men accompany women to ANC/PNC mobile clinic or during facility visits, but this is not common. If not already the practice, APEs could discuss FP when they provide education in the home, timing their visit to the extent possible to when the husband is present. For pregnant women, ideal timing for couples FP counseling would be before she goes to deliver or for a PNC visit, so that she has

her partner's approval and ideally can obtain her method of choice during the clinic visit (and not have to go home first to discuss, as this can result in missed opportunities for FP uptake). Matrons already incorporate FP as part of their home visit discussions, as do APEs, but APEs are a particularly good candidate for couples FP counseling in the home as they have credibility with and are trusted by men.

## *Rights/Gender*

### Age at first marriage

This is a new child law about which members of the GBV group are keen to increase awareness and enforce. On the other hand, in discussions with community members, they suggested that the key message should focus on age at first birth, as a health issue, rather than age at first marriage that is more a cultural tradition. The legality of when females marry was not raised by community leaders as a key issue, in part, as they may not be aware of the law and /or possibly as marriage in these rural areas is often not an "official act".

For the leaders, staying in school is an important way to extend the age at which females "marry" and give birth. Both young adults and their parents value education and are thus motivated to postpone pregnancy until the female at least finishes school. This insight provides an opportunity for Ecohealth and other GRP departments, in particular the Environmental Education team, to *coordinate and strengthen messages that reinforce linkages between staying in school, FP uptake, delaying childbirth, sexual and, overall health, work productivity and conservation and development goals.*<sup>60</sup>

### GBV

Few health center providers have had GBV training, in part as in the periphery they do not have all that is needed in terms of a "safety net" to help GBV victims, once identified. Ecohealth has provided training to 30 providers and plans to support training for 30 more so they can at least sensitize their patients about GBV and refer any identified victims. As described, to broaden awareness, Ecohealth is supporting a Gorongosa District GBV nucleus that plans to work first with community leaders and then the community at large via drama shows. The GBV nucleus members interviewed appear very committed to their role and motivated to get relevant messages out (to both victims and aggressors, and to leaders to enforce the laws). For example, the theatre group members who perform and hold "palestras" (health talks) also want to go door to door with the same messages. *GBV nucleus members are thinking creatively, as a group, and Ecohealth should continue to help maintain momentum and motivation.* Not only does this work address an important health and gender issue but, *it provides an opportunity to promote multi-sectorial engagement around a common interest.* The group articulated well why it was important for the group to include a teacher, agriculture extension worker, the police, health care providers, a Registrar, among others. Similar thinking would help inform how both conservation and development actors (the latter representing health, agriculture, ecotourism and education, among many others) could work collaboratively to achieve conservation and development GRP –linked to GRM - goals.

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<sup>60</sup> Of relevance, the agricultural worker member of the GBV nucleus shared with the team that one of her roles is to convince parents that children should remain in school, and not be taken out of classes to work the fields.

## Conservation

In the recent GRP workshop about the mountain sector of the Park, a key theme was the need for strategies to improve community engagement. Workshop members noted that GRP has had good outcomes in the area of education and community health and it now needs to also focus on the health of the mountain ecosystem(s). As Ecohealth has some community water supply experience, through its support to wells under its food security activities, *this provides an opportunity to link discussion of watershed health, reliability of water supply, agriculture, food security, water quality and water-related human disease.*

It is unknown whether community members appreciate that their ground water (aquifer) will be affected if the mountain's hydrological system breaks down as a result of deforestation. Many villagers still get at least some of their water from the river – for clothes washing if not drinking -and periodically they experience dry riverbeds. This experience may facilitate understanding of the close linkages between watershed and river health and the cumulative effects of mountain deforestation. All of this presents an opportunity for Ecohealth *to engage more in the linkages between water, food security, conservation agriculture, conservation threats and Park ecosystem integrity.* Specifically, *Ecohealth should collaborate more closely with the Environmental Education team that already includes these linkages as one of their focal topics as well as with Scientific Services that works with water monitoring data and with the Conservation Department that focuses on maintaining Park ecosystem functioning.*

During the Mt. Gorongosa workshop, the facilitator discussed exploring strategies for implementing successful conservation economic activities with communities to conserve the mountain's ecosystem. She made reference to Nature, Wealth, and Power that is a framework used/tested by others e.g., in Madagascar. In Madagascar, the integrated framework was expanded to Nature, *Health*, Wealth and Power this is something GRP could consider as a model to work from. In Madagascar, water was also identified as an important unifying theme key and leverage point for integrated interventions. The workshop also emphasized the importance of developing trust before focusing on the business side of community relations. Clearly, there is a role for Ecohealth given how Ecohealth has functioned successfully in this regard in other geographic areas.

## Coordination/Relationships/Partners

Government at different levels is convinced about the Park's dedication to rural development/poverty reduction. An important question to consider at this juncture, including for Ecohealth, is what other actions are strategically needed to maintain this trust and credibility and/or extend to other government agencies (e.g., MINAG).

One opportunity for how Environmental Education and Ecohealth can collaborate internally is during community mobile movie session nights. Also, as mentioned elsewhere, APEs and matrons can be invited to participate whenever possible in Environmental Education activities. *If the new Conservation Agriculture Director (and any staff) and Ecohealth team shared an office in Vila, this would allow those two Community Relations groups to work more closely together on new linked nutrition/food security/conservation agriculture/conservation efforts.*

The Park is helping the MINAG and other authorities by monitoring the spread of fires. Ecohealth could integrate burns more into their work through additional focus on burns, a



community health issue of importance, and health conditions that result from smoke inhalation. Another way to increase within GRP coordination and impact is if Ecohealth provided gender training for Community Planning (NRM committees). This would help sensitize NRM committee members, currently mostly men and ultimately potentially increase the number of women on NRM committees. Also, during learning exchanges at CEC, Ecohealth could do HIV and FP sensitization and even support HIV testing (and condom distribution, plus other FP methods). This should be facilitated with the posting of a nurse at the CEC clinic.

The conservation contract being piloted by GRP says it will assist the community to design projects for use of its 20%. *As health is often a community priority, Ecohealth could work more closely with this process to help determine the details of any health-related projects (including progress on Nhanguo to becoming a MOH designated health center).*

### Data

As mentioned, Scientific Services and Conservation have a considerable amount of data including from rangers and satellite data on fire occurrences etc.<sup>61</sup> *These data could/should be linked to Ecohealth monitoring databases to provide a basis for assessing correlation between where Ecohealth is operating and change in or priority for conservation threats.* MSGH student(s) could potentially help conduct such analyses.

Both departments expressed willingness to provide periodic powerpoints to other departments with maps including key data related to relevant issues. Scientific Services also



**Figure 14 Conservation department demonstrating reforestation project and materials.**

<sup>61</sup> Include historical fire data from the MODIS monitoring system.

offered to help map Ecohealth's baseline survey data as well as spatially identify boundaries of the *regulados*, *poavados*, etc. to help reconcile differences between official and traditional boundaries, to help spatially coordinate efforts between departments. GRP including Ecohealth need to agree on what data, how often and how the information will be used to take advantage of these useful offers.

In the mountain workshop, need was expressed for a census to identify permanent residents versus temporary shelters for people engaged in cash crops. There is a MOH mosquito distribution census coming up which could provide an opportunity to obtain up-to-date information on community denominators/ household numbers for MOH planning as well as for GRP interventions related introducing cash crops.

## Conclusion

Ecohealth as a sub-unit of the Community Relations Department has done an impressive job of developing into a Program with: funding, focused activity areas (APEs, matrons, mobile clinics, etc.), processes and systems (e.g. information and reporting system, supervision system) and partners. Initial efforts were directed at developing trust and working relationships with key health partners so that planned activities could be implemented and in a quality way. This has successfully resulted in strong ties in particular with the MOH that considers the Program an extension of/vehicle for their efforts; with MSGH that considers GNP and the Program a prime candidate for expanding their student field internship program; and, with the 6 focal beneficiary communities that appreciate what Ecohealth and the Park are doing to help improve their lives.

In terms of GRP goals, Ecohealth is:

- Helping to build trust, open doors and increase Park visibility
- Supporting MOH to achieve their health goals
- Improving human development in the area

In addition to good relations, clear conservation benefits include fewer incidents of poaching reported in APE communities and reduced human/animal interaction in communities with wells. Tangible health benefits of Ecohealth efforts to date include improved health access, services and select health outcomes. Specifically, Ecohealth is increasing:

- Awareness of Mozambican child protection and domestic violence law
- Access to and use of
  - Essential health services (e.g. combatting diarrhea and malaria)
  - Practices to prevent HIV/AIDS
  - RH information, products, and services
  - Clean water (which is reducing water-borne diseases and female time burden)

It is accomplishing the above through its various Program activities and by helping give communities a voice in their own health. It has succeeded through use of various "Best Practices" including:

- Partnering to maximize reach and results
- Supporting existing structures/guidelines



- Adaptive management through ongoing learning
- Data-based decision-making
- Developing workers' skills
- Support for context-appropriate incentives to maintain motivation
- Increasing knowledge, changing attitudes and changing behaviors
- Embracing an integrated approach (PHE) to programming

Progress to date has been achieved despite a number of challenges. The evaluation revealed important activity-specific challenges some of which provide opportunities for future redirection. General challenges include:

- Limited transportation (few cars/drivers)
- Long distances and hard to reach target communities
- Periodically-volatile political situation
- An established relationship with only one district government in the BZ (Gorongosa)

Internally, the Program has made the most linkages with the Environmental Education Program. Ecohealth incorporates environmental messages in all activities it supports (to the extent it has this opportunity). And, conversely, some health messages (e.g. hygiene, nutrition, GBV) are incorporated into Park educational efforts provided to a number of target audiences. Integration with other Departments has been minimalized due to a number of factors: human resource constraints (e.g., lack of staff with time and expertise to expand their SOW), transportation limitations, mentioned above as a key general challenge, and limited cross-Department facilitation. These challenges are being actively addressed through the addition of new staff /advisors (including a Technical Assistant and Clinical Advisor within Ecohealth), by acquiring more vehicles (e.g. a new Ecohealth ambulance) and the recent hiring of a Community Relations Director. Ongoing cross-Program strategic planning will benefit from the findings of this internal evaluation, commissioned specifically to inform this process as well as how to maximize Ecohealth Program-specific results over the next 2 years of its USAID funding.

An overarching evaluation finding to consider during its strategic planning exercise includes that until now, Ecohealth has been mainly following the priorities of the MOH. An important question is what is the long-term vision for Ecohealth as an independent Program that also considers GRP conservation and general development priorities? In this regard, a key strategic direction decision the Program faces relates to whether it should, i) "scale up" by introducing new programmatic activities in the same (current) communities (intensification), ii) expand existing activities to new communities of conservation importance to the Park including to other Districts in the BZ or, iii) focus its efforts on a critical conservation area, the mountain sector of the Park. There are advantages and disadvantages to each strategy, including partner and funding availability and logistical challenges that affect its potential for success.

As Ecohealth will never be able to meet all health needs of BZ communities, to be most effective, in addition to geographic focus, a strategic decision would be to focus programming on:

- Advocating for the Park in the BZ by increasing the visibility of the Community Relations Department, charged with strengthening relationships between the community and Park

- Maintaining good relationships with the various relevant government agencies (e.g., MISAU, MINTUR, SDPI, SDAE, PRM)
- Prioritizing its health topics

Two priorities stand out among health topic options: 1) RH (HIV, FP, GBV) and 2) nutrition. Rationale for focusing on RH including that Ecohealth's GBV work is going well and even gaining momentum with multiple government sectors (many of relevance to non-health GRP goals including Agriculture and Social Welfare). Also, importantly, the Program's GBV work is a great entry point for HIV and FP, both of which – often through complementary pathways - lead to positive outcomes in maternal and child health, education, economic development and women's empowerment. Work in nutrition linked to food and livelihood security provides increased opportunity to work collaboratively with other GRP Departments, in particular, Conservation Agriculture, that helps meet expressed community needs while optimizing GRP resource utilization.

## Tables

**Table 1: Gorongosa District *Regulados***

Cudzu (also spelled Cudzo)
Canda
Sandjungira (also spelled Sandungira)
Tambarara
Murombodzi (also spelled Mucombeze)
Nhambita (also spelled Nyambita)
Nhanguo
Djuchendje

**Table 2: Communities covered by Gorongosa District Health Centers**

Canda health center	<b>Nhancuco*</b>
	Murombodzi
	Nhambirria
	Chitunga
Pungue health Center	<b>Nhanguo</b>
	<b>Mbulawa</b>
Mucodza health Center	<b>Nhaengee</b>
Casa Banana health Center	Zualamambo
Vunduzi health center	Chionde
Cudzu health center	Dassa
Moeira health center	<b>Massala</b>
	<b>Mussicadzi II</b>
Sede (Vila Gorongosa)	Muziwangunguni
	Djuchendje
Tsiquire health center	Nhandemba

*\*bolded communities are Ecohealth focal areas*

**Table 3: Ecohealth support to 15 communities (as of September, 2013)\***

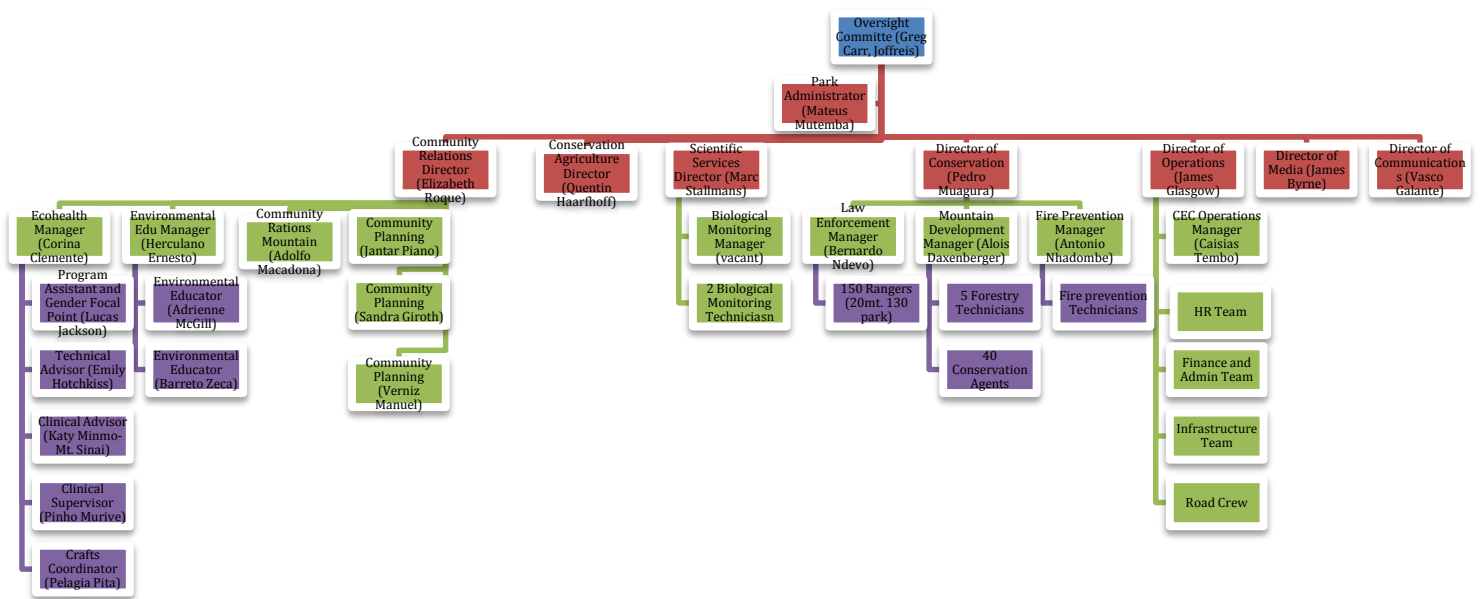
	APE	Matron	GVB (planned)	Health Co- management Committee**	Well
<b>Focal</b>					
Mbulawa	1	5	X	X (Pungue)	X
Nhanguo	3	6	X	X (Pungue)	X
Nhaengee	2	6	X	X (Mucodza)	(Planned)
Nhancuco	2	3	X	X (Canda)	
Mussicadzi II	2	6	X	X (Moiera)	X
Massala	0	5	X	X (Moiera)	
<b>Other</b>					
Dassa	1		X	X (Cudzu)	
Chitunga	3		X	(Canda)	
Nhambirira	1		X	(Canda)	
Muazungunguni	3		X	(Sede/Vila Gorongosa)	
Djuchendje	1		X	(Sede/Vila Gorongosa)	
Zualamambo	2		X	(Casa Banana)	
Morombodzi	1		X	(Canda)	
Chionde	1		X	(Vunduzi)	
Nhandemba	1		X	(Tsiquire)	
<b>TOTAL</b>	<b>24</b>	<b>32</b>			

*\*One year into the program in August 2013 a review of APE performance resulted in the dismissal of 3 APEs. In addition 1 APE left the program and moved away. At the same time 5 new APEs were trained by the district and joined the team, for a new balance starting in the second year of the APE program of 24 APEs. \*\* Referral Health Center in parenthesis*

## Annex 1 - Map of the Park boundaries and BZ communities



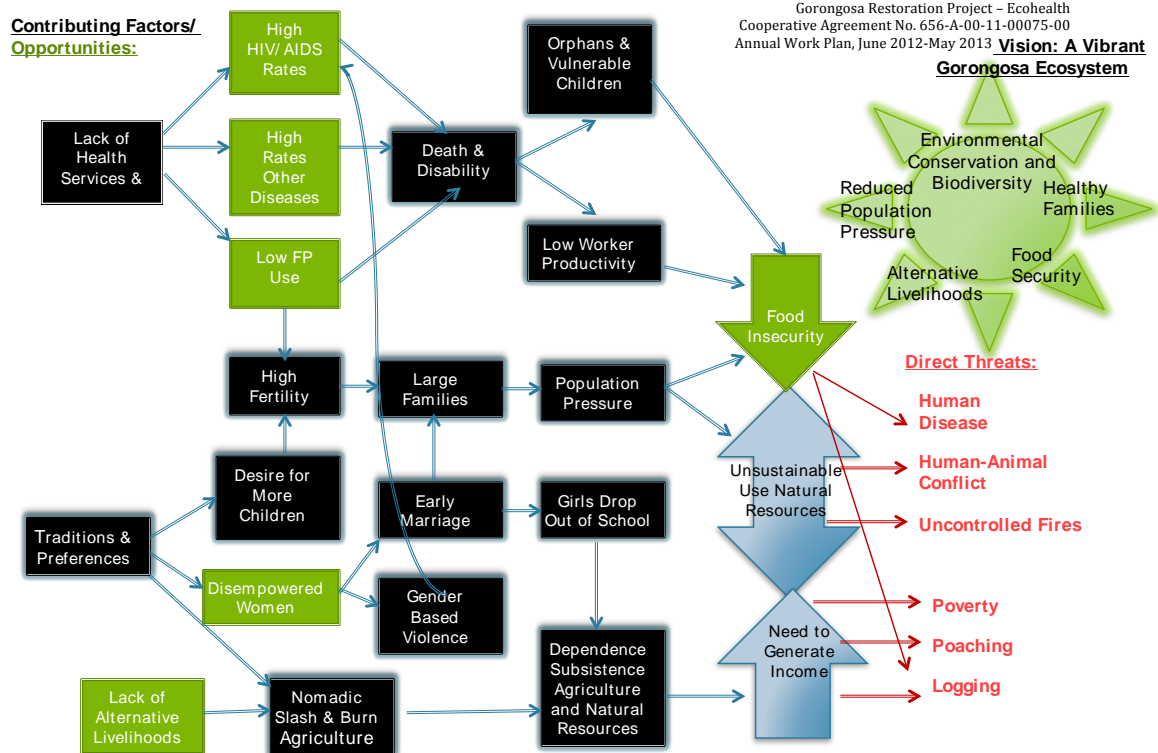
## Annex 2 - GRP Organizational Chart





## Annex 3 - Ecohealth Conceptual Framework

## Ecohealth Conceptual Framework



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## Annex 4 – Evaluation Terms of Reference



### **ECOHEALTH MIDTERM PERFORMANCE EVALUATION** **TERMS OF REFERENCE**

#### **I. BACKGROUND INFORMATION**

##### **A) Identifying Information**

1. Project Title: Ecohealth
2. Award Number: Cooperative Agreement No.656-A-OO-II-00075-00
3. Award Dates: May 19, 2011- May 31, 2015
4. Project Funding: PEPFAR
5. Implementing Organization(s): Gorongosa Restoration Project
6. Project COR/AOR: Patrick Collars

##### **B) Development Context**

###### **1. Problem or Opportunity Addressed by the Project/Activity being Evaluated**

Communities living in the buffer zone of Gorongosa National Park are critical stakeholders in the efforts to restore this threatened ecosystem. However, they have little access to essential services such as health and education, and have limited sources of income or economic development. This makes them dependent on subsistence farming and other practices utilizing natural resources for survival. In order to reduce environmentally destructive practices, such as fires (for hunting and farming), logging and poaching (for home consumption and commercialization), the park is engaged in efforts to improve conditions for buffer zone communities via its Department of Community Relations. Ongoing interventions include:

- Environmental education seminars with students and teachers in buffer zone schools
- Technical support for community-based natural resources management committees (who receive and manage 20% of tourism earnings from the park)
- Promotion of alternative livelihoods: beekeeping, food preservation, crafts, commercial conservation agriculture (with varying degrees of scale, mostly small one-off trainings with little follow-up)
- Management of human-animal conflict (elephants crop raiding, crocodile attacks)
- Fire prevention and control trainings
- Tree planting (focused on Gorongosa mountain, the sources of the rivers that feed the park watershed)
- Voluntary relocation of families living within the park boundaries

In order to address the dire health situation in these communities, activities addressing health needs were incorporated into the department's efforts in 2011, in the form of the Ecohealth program.

###### **2. Target Areas and Groups**

The program was originally designed to work in 9 communities in two districts, Gorongosa and Nhamatanda. However, in the beginning of program implementation it became clear that with the existing resources it was going to be difficult to support two districts, so we decided to concentrate the intervention in the 14 communities in Gorongosa district only.

Within Gorongosa district, we have several degrees of intensity in our intervention. Six key communities are receiving the full package of Ecohealth interventions, and can be considered the principal target area: Mbulawa, Nhanguo, Massala, Mussicadzi 2, Nhaenge and Nhankuco. The full package includes: traditional birth attendants, community health workers (APEs), mobile clinics, gender based violence prevention campaigns and leadership councils.

Eight other communities only have Ecohealth supported community health workers operating in their areas: Dassa, Chitunga, Cudzu, Muazunguni, Zualamambo, Muorombodzi, Chionde, Tsiquire. Although these areas do receive mobile clinics organized by the local health system and are also engaged in gender based violence prevention.

The areas of the buffer zone in Nhamatanda district, that were originally contemplated (and were surveyed during the baseline study) received funding to train a cadre of traditional birth attendants. However, the district manages this activity independently, and the Ecohealth team is minimally involved (this is a completely different model than the intensive support the TBAs receive in Gorongosa district).

Within these buffer zone communities, we work with the general population. PEPFAR funding for Ecohealth is earmarked to serve orphans and vulnerable children and their caregivers (OVCs). However, in consultation with the AOTR in this area, we agreed that these communities were so remote and poverty-stricken that the entire population can be considered vulnerable. Therefore, up to now we have not addressed orphans specifically, but rather are working with the whole community.

In mid 2012, Ecohealth received funds to integrate yet another area into this program, gender and gender based violence prevention. Therefore we began sensitizing our community health workers, traditional birth attendants and park rangers in this area. However, only in 2013 were we able to carry out a more comprehensive training in this area, with the help of CHASS-SMT, and are not beginning to put together a more intense gender and GVB strategy.

We are also supposed to be working with park staff as another target population of about 350 people, but that component has been really weak and we've barely started activities for that target group.

### **C) Intended Results of the Project being Evaluated**

Please see our Revised Workplan's conceptual framework and the Performance Monitoring Plan's results framework.

### **D) Approach and Implementation**

The Ecohealth approach is to work hand in hand with the local government and local traditional leadership structures without creating parallel structures in order to foster sustainability and local ownership.

In addition, the Ecohealth program is attempting to utilize the integrated development approach known as population, health and environment (PHE).

### **E) Existing Documents**

- Revised Ecohealth Workplan
- Draft Performance Monitoring Plan
- Quarterly Reports (general and gender based violence initiative from Q4 2011 through Q2 2013)
- Baseline Survey Results

## II. EVALUATION RATIONALE

### A) Evaluation Purpose

The Ecohealth program is half way through its project cycle, which is a good time to take a step back and reflect on whether the program is on track with its stated objectives, or whether any modifications should be made in the second half of the program to improve effectiveness and results. This is why we are interested in a performance evaluation. We also want to ensure that future work to assess impact (nearing the end of the program) will have the necessary structures and systems in place to measure concrete results.

Some program components, particularly workplace health and a food security/nutrition/agriculture intervention have been slow to start and are behind schedule. In addition activities related to the prevention of gender-based violence are just beginning in Q2 of 2013, and will take up a larger portion of the team's time for the remainder of the project time frame.

### B) Audience and Intended Uses

Results from this evaluation will be disseminated broadly to all project stakeholders, including internal park management, local government partners and donors (USAID and Mt. Sinai).

### C) Evaluation Questions

1. To what extent is the project leveraging existing opportunities for integrated of population, health and environment (PHE) program elements?
  - a. Are there any possible high-yield integrated opportunities that the project should consider leveraging in the second half of the program?
2. To what extent is the project reaching the objectives set forth in the revised workplan?
3. Do any specific activities indicate a best practice?
4. Does the project have the M&E systems in place to measure whether at the end of the program we have reached the intended results?
5. Is it possible to do a follow-up to the baseline survey that is just a sample and not a population-wide household survey (like the baseline was), and if so, what will that tell us?
6. Are we spreading ourselves too thin by engaging in so many spheres in health (maternal and child health, water and sanitation, HIV prevention, vaccinations), population, livelihoods (crafts) and gender?
7. Is it advisable to add new food security, nutrition and conservation agriculture activities in the second half of the program?
8. Right now this program is taking place with varying intensities in 14 communities of Gorongosa district, but that is only reaching between 10-20% of the population of the whole buffer zone.
  - a. How much of the buffer zone would we estimate would need to be covered in order to have the desired environmental conservation and health impact?
  - b. What conservation measure should we use to measure the desired impact?
9. Do we have evidence to show potential donors it is worth fundraising to scale it up to reach other districts and communities in the buffer zone?
10. Are we doing what we can to ensure that this program is sustainable in the future?
11. How much are women and girls at the community level benefiting from Ecohealth activities? Are there any special efforts being made to advance gender equality?

## III. EVALUATION DESIGN AND METHODOLOGY

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**A) Evaluation Design**

This is a performance evaluation, not an impact evaluation.

**B) Data Collection Methods**

Document and data review, key informant interviews, site visits. ?

**C) Data Analysis Methods**

TBD

**D) Methodological Strengths And Limitations**

TBD

**IV. EVALUATION PRODUCTS**

**A) Deliverables**

The key deliverable is an evaluation report that answers the evaluation questions and offers action-oriented recommendations for program improvement during it's second half. In addition, if possible, we would like to organize a debrief presentation at the USAID Mission in Maputo.

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## APPENDIX I CRITERIA TO ENSURE THE QUALITY OF THE EVALUATION REPORT

- The evaluation report should represent a thoughtful, well-researched and well organized effort to objectively evaluate what worked in the project, what did not and why.
- Evaluation reports shall address all evaluation questions included in the scope of work.
- The evaluation report should include the scope of work as an annex. All modifications to the scope of work, whether in technical requirements, evaluation questions, evaluation team composition, methodology or timeline need to be agreed upon in writing by the technical officer.
- Evaluation methodology shall be explained in detail and all tools used in conducting the evaluation such as questionnaires, checklists and discussion guides will be included in an Annex in the final report.
- Evaluation findings will assess outcomes and impact on males and females.
- Limitations to the evaluation shall be disclosed in the report, with particular attention to the limitations associated with the evaluation methodology (selection bias, recall bias, unobservable differences between comparator groups, etc.).
- Evaluation findings should be presented as analyzed facts, evidence and data and not based on anecdotes, hearsay or the compilation of people's opinions. Findings should be specific, concise and supported by strong quantitative or qualitative evidence.
- Sources of information need to be properly identified and listed in an annex.
- Recommendations need to be supported by a specific set of findings.
- Recommendations should be action-oriented, practical and specific, with defined responsibility for the action.

### V. TEAM COMPOSITION

The team will be lead by our evaluation consultant, Dr. Lynne Gaffikin. She will be paired with the incoming Ecohealth Technical Advisor, Emily Hotchkiss, who will also facilitate translation, when necessary (english/portuguese). Another translator will be identified when doing community visits to translate from local dialect. Direct Ecohealth implementers (Corina, Jackson, Pinho and Pelagia) should participate in the evaluation only in ways that do not cause bias or conflict of interest.

### VI. EVALUATION MANAGEMENT

#### A) Logistics

The evaluation team will stay at the Community Education Center (CEC), and will have a dedicated driver for the duration of the visit.

#### B) Scheduling

Day 1: arrival  
 Day 2: review existing data and M&E system, meetings with Ecohealth team  
 Day 3: meetings with PNG management/other departments  
 Day 4: meetings with local govt partners and site visit  
 Day 5: site visit  
 Day 7: preparation of findings  
 Day 8: visit park/do safari  
 Day 9: debrief with USAID (possibly with park management)  
 Day 10: departure

The Ecohealth team will take care of disseminating the findings locally, after translating to Portuguese and packaging for specific local audiences.



## Annex 5 - List of people interviewed

### **Gorongosa Restoration Project (GRP)**

- President Carr Foundation (Greg Carr)
- Park Administrator (Mateus Mutemba) (previous and acting Community Relations Director and Senior Project Advisor on USAID Cooperative Agreement document)
- Director Conservation (Pedro Muagura)
- Fire Prevention and Poaching Data Manager (Antonio Nhadombe)
- Conservation Agriculture Director (Quentin Haarhoff) (newly arrived)
- Mountain Development Manager (Alois Daxenberger)
- Biological Monitoring Manager (Alan Short)
- Ecohealth Manager (Corina Clemente)
- Program Assistant and Gender Focal Point (Lucas Jackson)
- Technical Advisor (Emily Hotchkiss)
- Clinical Supervisor (Pinho Murive)
- Crafts Coordinator (Pelagia Pita)
- Environmental Educator (Adrienne McGill)
- Community Planning Manager (Jantar Piano)
- Community Planning Supervisor (Sandra Giroth)

### **Mount Sinai Global Health (MSGH)**

- Dr. Natasha Anu Anandaraja
- Mount Sinai Global Health (one year) Training Program Fellow serving as Ecohealth Clinical Advisor (Katy Mimno)

### **Ministry of Health**

#### District level [District Health, Women and Social Welfare Directorate (SDSMAS)]

- District Director of Health, Women and Social Welfare (Dr. Jeronimo Titos Langa)
  - Chief Medical Doctor (Dr. Neusa Joel)
  - Chief of Health Promotion and Disease Prevention Unit (Dercia Sandique)
- #### Provincial level [Provincial Health Directorate (DPS)]
- Provincial Director of Health (Dr. Marina Karagianis)
  - Chief of International Cooperation Unit (Dr. Luis Chulo)
  - Chief of HIV/AIDS Response (Dr. Lara)

### **Community-level stakeholders**

Community APEs, matrons, leaders, water committee and conservation agents

#### Communities visited

Nhancuco  
Mbulawa  
Nhanguo  
Pungue Health Co-management committee members

### **Other Stakeholders**

Gorongosa District Multisectoral GBV Nucleus members

## Annex 6 – Detailed Examples of Best Practices

### *Partnering to maximize reach and results*

- With other GRP departments (e.g., for the construction of a state-of-the-art Community Education Center).
- With MSGH (for M&E technical assistance, clinical training and supervision, among many other contributions)
- With district and provincial government entities, in particular MOH offices, e.g., to conduct national health campaigns and Vila de Gorongosa Hospital when conducting mobile clinics and clinical training.
- With CHASS-SMT for their expertise in the technical area of GBV
- With WLSA for Portuguese IEC materials related to GVB
- With a local youth group (*JUNTOS*) to conduct community theater pieces about early marriage.
- With the Commercial Association of Beria or ACIS (*Associação Comercial da Beira/Empresários Contra SIDA*) regarding workplace HIV prevention

### *Supporting existing structures/guidelines*

- Ecohealth support to the national APE program, in partnership with district and provincial health authorities, rather than identifying and training separate CHWs
- training APEs in standardized (versus new) MISAU health messages to be delivered during their house-to-house visits
- consultation with the *Direcção Nacional de Águas-DNA and Departamento de Água Rural-DAR* and Gorongosa District Planning and Infrastructure office to ensure well construction that meets government standards
- development of matron data collection tools in collaboration with SDSMAS
- participation in the MOH's "Plano Económico e Social, Saúde" (PES 2013) meeting to learn about the government's annual planning cycle and how to align Ecohealth's year 2 workplan objectives with provincial PES goals related to health
- support for DPS supervision visits during training to ensure local trainers are complying with national standards
- considering support of the national Nucleus Against Hunger "*Mãe Modelos*" (Model Moms) program
- support to revitalize the district's inter-sectorial GBV committee to improve coordination of services for victims and to support community outreach and education for prevention of GVB

### *Adaptive management through ongoing learning*

- in keeping with the MOH's revised approach, the Program modified its plans to assist co-management committees versus community leadership councils (CLCs).<sup>62</sup>
- to inform its food security interventions, Ecohealth evaluated an ongoing women's agriculture and income generation project in Vinho, a BZ community in Nhamatanda District.
- the Ecohealth manager visited a project involving successful conservation farming around a national park in Zambia (COMACO) –to inform the Program's decision regarding conservation agriculture and as a potential alternative to Field Farmer Schools.

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<sup>62</sup> This modification had a substantial impact on how the Program was rolled out over time.

### *Data-based decision-making*

- early on, in 2008, GRP's Community Relations Director and a USAID Special Projects Advisor jointly conducted a preliminary assessment for HIV service delivery in the BZ of the Park.
- subsequently, MSGH conducted some focus groups by to conceptualize Ecohealth as a GRP program.
- a comprehensive baseline survey by MSGH in 9 communities provided (previously lacking) local data on many health, socio-economic and environment indicators. The data helped inform more detailed Ecohealth intervention planning
- baseline survey data were disseminated using pictograms in community meetings aimed at informing future community health actions including with APEs
- a pilot baseline food security survey including data on food diversity and women's empowerment was conducted in one community as a basis for planning the Program's future interventions in this topical area
- with support from MSGH, the Program developed an indicator database and routinely performs data quality checks and routine analyses to better assess program progress and any deficits in health worker performance
- a survey was conducted of existing clinic, psychosocial and legal services related to GBV before initiating activities in this technical domain.
- APEs identified lack of water in several communities during their community mapping, providing Ecohealth a rationale for addressing this in their workplan
- ongoing problems of smoking and drinking during pregnancy were included in matron messages as identified special needs of focal communities with MSGH support, a quality assurance assessment of mobile clinic services was conducted to identify remaining barriers to assess health services, particularly HIV counseling and testing. The results were shared with local health authorities (SDSMAS) to help institutionalize strengthening of that health service component
- with MSGC support, a focus group was conducted with members of the soccer team to assess the viability of an HIV peer-based soccer team intervention.

### *Worker skills development*

- as stipulated by standard MOH guidelines, each module of the APE course includes practical, field-based training (*estagios*) whereby APEs stay in a guest community (in groups of 6 for up to 10 days) in order to practice the lessons learned from the module
- Ecohealth staff attended a GBV-training of trainer course provided by CHASS-SMT so they could later replicate this training module for its target activity groups (APEs, matrons, youth group and health co-management committee members)
- DPS staff conduct supervisory visits to courses conducted by local trainers to ensure that they complying with national standards set for the respective curriculum
- Ecohealth uses quality assurance checklists to ensure mobile clinics and matron outreach run smoothly.
- Ecohealth's Clinical Supervisor, along with SDSMAS APE Coordinator, routinely follows up with Program-supported matrons and APEs, reviewing their daily registers and other forms
- as a basis for ongoing update training, Ecohealth's Community Crafts Coordinator provides ongoing support to Program-supported matrons to ensure quality and variety of the handicrafts developed as an alternative livelihood
- Ecohealth visited all 9 rural health facilities corresponding to the (then) 14 communities

with Program-supported APEs<sup>63</sup> to follow up on topics discussed in a previous technical meeting.

- the Program facilitates on-site health facility staff supervision of APEs

#### *Support for context-appropriate incentives to maintain motivation*

- income generation support to the matrons is a clear example of this (aimed both at incentivizing them for time spent promoting maternal health and also to offset monies lost by traditional midwives who are encouraged to no longer practice “their trade” but rather to encourage women to have facility-based births)
- the training graduation ceremony for APEs supported by Ecohealth was attended by officials from many levels/organizations and the event was covered by the Mozambican media (each graduate received an official MISAU identification card and work-related items that recognized contributing partners and to engender pride in their identity and work).<sup>64</sup>
- to complement the low monthly subsidy payment that APEs receive (as stipulated by national standards), Ecohealth has provided other tangible materials to both facilitate their work and incentivize their performance including solar panels, rechargeable batteries, rain gear, office supplies, and bicycle maintenance supplies.
- the Program recently provided team soccer shirts to youth players to motivate them. The shirts contain peer-targeted health messages regarding both HIV and pregnancy prevention.

#### *Increasing knowledge, changing attitudes and changing behaviors*

- the Program plans, when possible, to train HIV program peer educators to offer continuous support to staff after their HIV education program is completed
- the CEC has an active soccer team that participates in games in a local league representing the park. This group of young men approached the Program with a proposal to carry out HIV prevention work amongst their peers in return for support for their soccer team (e.g., new uniforms). The latter have just been produced to distribute to the team.
- Ecohealth organized a theater performance (dance) as well as had two teams compete in a soccer match as part of a huge celebration (with participation from the District Administrator, President of the Municipality, Director of Education, the Police Chief and hundreds of community members). There was also a march through town, two friendly soccer games (one for men and one for women) and a celebratory lunch for park staff and partners.
- to commemorate Mozambican Women's Day, Ecohealth worked with the local youth theater group to prepare a play about GBV, HIV and FP which was attended by hundreds of community members and local government authorities.
- Chitengo clinic staff deliver HIV prevention message every month during morning GRP worker assemblies (100 people). As staff constantly rotate through Chitengo, different individual staff are present during each assembly so repeating monthly is important (e.g., law enforcement and conservation staff, which are posted on the border with the park and patrol poaching and fires, come in every couple of weeks for supplies). To further emphasize the HIV messages, Ecohealth repeats and reinforces them for GRP staff during different activities (e.g., at CEC).

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<sup>63</sup> Ecohealth currently provides support to 15 communities.

<sup>64</sup> As mentioned elsewhere, Program-supported APEs feel loyal to the Park as well as to the health system.

- GBV messaging is reinforced by matrons via mostly small, individualized peer education contacts.

#### *PHE Integration*

- Ecohealth included a field on environmental education on the matron'/s data collection form to help ensure this information gets both recorded and passed on to their target audience (as the matrons use the form as a guide for their education).
- after the APE's exams, Ecohealth offered them two supplementary topics: gender and a second session of environmental education.
- a new GRP conservation agriculture position was created to promote conservation agriculture in the whole BZ zone. Ecohealth aims to work collaboratively with this person to develop linked nutrition and conservation agriculture activities in Ecohealth communities as part of a cohesive strategy that links the objectives of USAID's Biodiversity and health/HIV grants.
- Ecohealth promoted development of a joint workplan to better ensure that the Program's activities contribute to the park's overall restoration goals. Several integrated activities included in the workplan include: bringing conservation mobile movies session to Ecohealth communities, developing an integrated and illustrated park community outreach flip chart (with health and conservation messages), and including health topics into a new community radio program being organized by the Environmental Education/CEC team.

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