

The Millennium Villages Project

2009 Annual Report



THE EARTH INSTITUTE
COLUMBIA UNIVERSITY

**Millennium
Promise**
Extreme Poverty Ends Here



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I. Introduction

The Millennium Villages (MV) project is achieving tremendous success in demonstrating the feasibility of integrated approaches to achieving the Millennium Development Goals (MDGs) for hunger, health, education, water, gender equality and basic infrastructure in the rural subsistence farm communities of Africa. Thanks to the project's efforts to ensure universal access to basic services, important progress has been made toward all of the MDGs for roughly half a million people. This Annual Report for 2009 has been prepared to update our partners on progress made by the Millennium Villages project from January 1 – December 31, 2009. Please note that much of the data presented in this report are preliminary and subject to future review. More detailed midterm survey data are forthcoming.

Preliminary results from the MV project's Year 3 surveys, scheduled for publication later in 2010, show remarkable progress. The Millennium Villages have experienced major breakthroughs in staple crop yields, disease control, nutrition, child mortality and access to basic infrastructure. MV project communities are also making tremendous strides in moving beyond subsistence farming, en route to forging the path of self-sustaining economic development that will be the centerpiece of Phase II of the project through to 2015. As a prominent New York *Times* article recently described the situation in the Millennium Village site of Sauri, Kenya, "small miracles are happening every day" ("Shower of Aid Brings Flood of Progress," March 8, 2010, see Appendix).

As a globally networked partnership effort to advance the scale-up of basic poverty-reducing interventions throughout sub-Saharan Africa, the MV project's successes have played a key role in advancing multiple global policy breakthroughs. One example is the World Health Organization's policy announced in 2007 to provide free mass distribution of long-lasting insecticide treated mosquito nets. Another is Malawi's national agriculture strategy that doubled the country's food production since 2005 and subsequently fed into the G8's breakthrough 2009 commitment to smallholder agriculture,¹ which will in turn be anchored in a new World Bank-hosted agricultural financing facility. A third example is in the standardization of protocols for paid community health workers (CHWs), integrated with mobile telephone communications infrastructure for rapid diagnostics and patient care. A fourth is the emerging protocol for the eradication of mother-to-child transmission (MTCT) of HIV, anchored the MV project's partnership with UNAIDS to establish "MTCT-free zones" around Africa. A fifth is an integrated, geography-based approach to food and nutrition systems, which is now being piloted through a project-wide partnership with the World Food Program.

Moreover, the MV project has played a critical role in advancing global understanding of why a holistic approach to community-based rural development is needed. UN Secretary-General Ban Ki-moon endorsed this approach in his February 2010 major report to the General Assembly entitled "Keeping the Promise: A Forward-looking Review to Promote an Agreed Action Agenda to Achieve the Millennium Development Goals by 2015." This report presents the Secretary-General's core recommended agenda in the lead up to the UN's last major MDG checkpoint summit on September 20-22, 2010. In his report, the Secretary-General states that,

¹ Smallholder is a term used to refer to subsistence and small-scale commercial farming.

Holistic, community-led strategies are more effective than stand-alone programmes. The Millennium Villages project, supported by the United Nations Development Programme (UNDP) with many partner institutions in civil society, academia and business, has shown that synergistic investments in agriculture, health, education, infrastructure, business development and environmental conservation can lead to rapid and considerable progress in food security, school attendance and performance, reduced hunger and improved livelihoods in a short period of time (para 53).

He further goes on to say,

The success stories underscore the imperative of a holistic approach and confirm that positive results across the Millennium Development Goals and the broader enabling environment enhance the likelihood of sustained progress towards each of the Goals. They help define our collective accountability, but must be seen holistically. The synergies among the Goals are clear and indisputable, as demonstrated in the Millennium Villages (para 60).

In the same report, the Secretary-General stresses the role that corporate leaders can play and are playing in the Millennium Villages, as a central component of the MDG agenda.

The United Nations Global Compact, in which the world's major companies are committed to global social responsibility, will this year take on the Millennium Development Goals as a central focus of its participating companies. These companies will share technologies, business models, outreach strategies and skilled managers towards the scaling-up of Millennium Development Goal initiatives in many parts of the world. At its high-level meeting, the United Nations will release a framework for strategic business action in support of the Millennium Development Goals. It will also call on companies to align their social investments with development in general and the achievement of the Millennium Development Goals in particular. Many are already partners in the Millennium Villages and related programmes. Many more companies can and will join the global Millennium Development Goal effort (para 114).

Similar recognition is coming from the member states of the United Nations. A recent General Assembly resolution, reviewing progress on the New Partnership for Africa's Development, indicates that the General Assembly "invites the Secretary-General, as a follow-up to the 2005 World Summit, to urge the United Nations development system to assist African countries in implementing quick-impact initiatives through, *inter alia*, the Millennium Villages Project" (para 42).

Perhaps most importantly, African leaders are lauding the achievements of the Millennium Villages project, and calling for its expansion. At the September 2009 Millennium Promise Partners' Meeting in New York, President Bingu wa Mutharika of Malawi, current Chairman of the African Union, stated, "It is important that the Millennium Villages project should be included in every country's national development agenda." This assessment has been more broadly recognized around Africa, including through a recent February 2010 report prepared by the African Union Commission, the African Development Bank, the UN Economic Commission for Africa, and the UNDP, entitled "African Common Position on the Millennium Development Goals: Mid-term Review of Progress Towards the MDGs." The common position includes the following statement:

Another lesson to be embedded by African countries into their national poverty reduction strategies is the Millennium Village approach. The Millennium Villages project, which is being implemented in 14 African countries, offers a bold, innovative model for helping rural African

communities lift themselves out of extreme poverty. They are proving that by fighting poverty at the village level through community-led development, rural Africa can improve education, health, gender equality, and environmental sustainability by 2015, and escape extreme poverty that traps hundreds of millions of people throughout the continent. Meanwhile several governments, including those of Mali, Nigeria and Rwanda have already put forth national plans to scale-up the MV approach (Page 7, para 1).

The Millennium Villages have prompted several countries to launch integrated rural scale-up initiatives. In Mali, the President has presented a plan to scale up a Millennium Village-inspired approach to 2.5 million people living in the 166 most food insecure *communes*, with roughly half the cost to be financed domestically and the remainder through official development assistance. The Malian Foreign Minister presented this plan at the United Nations in September 2009. The MV project team in Mali is playing a key role in advising the Government on its scale-up strategy.

In Nigeria, the government has put forward a strategy to scale-up a Millennium Village-inspired program to reach more than 20 million people, with a focus on health, education and agriculture. The initiative is to be entirely self-financed through the country's debt relief savings account, and is led by the President's Senior Special Assistant on the MDGs, Ms. Amina az-Zubair. Amidst the recent political challenges in the country, the Acting President has personally affirmed his commitment to the effort, and has commissioned an international advisory group for the initiative, which would be chaired by Jeffrey Sachs.

Other MV program countries are in the process of identifying their own scale-up processes. In Ghana, an advisory board of senior government officials from the national government and the regional government was launched in October 2009 to advise on implementation of the project and plans for scale-up, starting in the Amansie West district. In Senegal, the office of the President has put forward a proposal to scale up Millennium Villages to other parts of the country, starting in the northern region. In Ethiopia, several members of the federal cabinet joined MV project leadership for a July 2009 visit to the program site in Koraro, and for a retreat in Mekelle to discuss opportunities for scaling the program to other regions in the country. Later in the year, 35 Ethiopian Members of Parliament traveled to visit Millennium Village sites in Sauri, Kenya, and Ruhiira, Uganda.

The project's early success has also spurred tremendous interest from other African countries. To date, more than a dozen African countries have asked to join the project. Four countries—Benin, Cameroon, Madagascar and Mozambique—have received financial commitments from the Government of Japan for implementation in direct partnership with UNDP. Madagascar launched its first site with support from the Government of the Republic of Korea in 2008, and Liberia received support from the Government of Norway to launch its first site the same year, both also implemented directly by the UNDP. Many other countries have officially requested support to join the project and are working to mobilize the needed financial support. These include:

- Burkina Faso
- Chad
- Congo (Brazzaville)
- Cote d'Ivoire
- Democratic Republic of Congo
- The Gambia
- Mauritania
- Niger
- Sierra Leone
- Togo
- Zambia

Preparing for Phase II

Table 1 presents the general sequence of activities in the MV project's first 5-year phase from mid-2006 through to mid-2011. As indicated, the project's initial efforts focused on distribution-type campaigns and construction, with a growing emphasis on major infrastructure and delivery systems over time. By the end of 2009, the MV project had completed 3 ½ years of this work. By mid-2011 and the transition to Phase II through to 2015, the basic platform should be in place to support both the gradual transition to localized service delivery systems and a systematic approach to business development.

Table 1. MV Project Phase I Intervention Timeline

INTERVENTION TIMELINE						
		YEAR				
AGRICULTURE		1	2	3	4	5
	Seed and fertilizer support					
	Extension training & storage					
	Crop diversification					
HEALTH						
	Bednets, immunizations, Vit. A, deworming					
	Clinic construction and staffing					
	Referral hospitals					
	Community health workers					
EDUCATION						
	School staffing					
	Construction & classroom refurbishment					
	School meals					
INFRASTRUCTURE						
	Water & Sanitation					
	Roads					
	Grid infrastructure					
BUSINESS DEVELOPMENT						
	Microfinance					
	Cooperative-based businesses					

A core goal of Phase II will be to ensure that all the MVs achieve and maintain the MDGs by 2015, including the income targets, and are on a self-sustaining path of economic development, embedded in their respective national systems. Another core goal will be to ensure that the MV project sites and the extraordinary network of African MV project technical staff are fully leveraged to inform and advise on the broader scale-up efforts for integrated community-based development strategies around Africa.

To this end, the project leadership is pursuing a decentralized management strategy that will support active collaboration with local African governments at all levels. This is being anchored in sub-regional MV project leadership teams based in Bamako and Nairobi, respectively. The project is concurrently working closely with the Soros Economic Development Fund and the Millennium Promise Board of Directors to identify a multi-tiered strategy for supporting small-, medium- and large-scale businesses in and around the Millennium Villages.

Our community of partners, supporters and stakeholders continue to play an instrumental leadership role in making this project possible.

II. Review of Strategic Priorities for 2009

In 2009, major priorities across all MV project sites included the following:

- **Implementing infrastructure projects, particularly in coordination with private sector partners making in-kind contributions.** At the beginning of the year, approximately a quarter of all infrastructure projects were still in the procurement phase. The MV project set an ambitious target for moving all of these remaining projects from the planning to the implementation by phase by end-October 2009. About 75-80% of this target was successfully met. During the year, the project continued rolling-out road projects to provide greater access to markets, expanding access to information and communications technology (ICT) and the electricity grid (including solar power) and implementing piped water and sanitation initiatives throughout a majority of sites. Many of these projects are undertaken in conjunction with a partner from the private sector that is contributing materials in-kind and/or industry expertise. For example, the MV project is collaborating with Ericsson and its local providers in Africa on ICT, and JM Eagle on piped water projects.
- **Launching business development initiatives and expanding access to financial services, particularly credit for agricultural inputs.** In 2009, the MV project continued to support the launch and growth of pilot business development projects. These initiatives are designed to address income poverty and establish a record of success upon which the project can attract increased levels of investment, launch new initiatives in additional sites and connect the entire value chain from production to market. A key component is to mobilize and manage locally available resources by organizing the communities into cooperative-run microfinance institutions, or to partner with outside financial institutions to manage micro-loans that will help the farming community transition from a subsidy- to a credit-based system.

Given that the MVs predominately reach rural smallholder farmers, most income-generating activities are related to agro-businesses. Examples of initiatives launched in 2009 include honey production in Ethiopia, palm oil production in Ghana, cassava flour processing in Malawi and women's gardens in Mali. Critical to the development of the agricultural sector is the expansion of financial services, particularly for farmers to access credit for inputs. As a result, subsidies were phased back significantly in many of the MV sites in 2009.

Additional sector-level priorities for agriculture, education and health in 2009 included the following:

- **Health:** Equipping health clinics with electricity, access to clean water and essential equipment; and building a systematic approach to community health worker (CHW) case management protocols, including those that leverage mobile telephone data networks.
- **Agriculture:** Improving post-harvest management, transitioning sites from a subsidy system to a credit system for agricultural inputs and expanding financial services to farmers.
- **Education:** Completing school building projects, increasing school meals coverage and providing teacher and gender equality training.

Other core program and policy priorities included:

- **Supporting government ownership of MV project activities.** The project has worked to strengthen the capacity of participating communities as well as local, regional and national governments to assume greater management and ownership of core MV activities. This includes, for example, the strengthening of CHW protocols in partnership with ministries of health, providing trainer education on preventing mother-to-child transmission of HIV/AIDS, integrating the salaries for local government health workers into the national payroll system, and incorporating local roads into national road networks.
- **Supporting the scale-up of the Millennium Village approach.** As described in the introduction of this report, the MV concept has received increasing attention and endorsement in critical international statements and recommendations. The governments of Mali and Nigeria continue to be a priority for policy support, as they advance national scale-up initiatives to reach approximately 2.5 million and 20 million people, respectively. In Ghana, a government-led advisory board was launched to integrate MV project lessons in government planning. In Ethiopia, the government has undertaken significant policy planning engagement with the MV project at the executive and legislative levels.

In 2009, the project also started to make a more concerted emphasis around raising policy community and public awareness of MV project strategies. To this end, the MV project has begun to disseminate information more proactively through social marketing initiatives, and through policy circles. This strategy will intensify in 2010 as Year 3 survey results are presented and published systematically. As a vehicle for raising awareness for the project, a new website launched in April 2010 by Millennium Promise—one of the three core partners of the project—provides a user-friendly resource for project data, narratives, videos, pictures and project histories (www.millenniumpromise.org). This new site complements the common website for the project (www.millenniumvillages.org).



Girls eating lunch provided by the school meals program in Ruhiira (Uganda).

III. Sector Reviews

This section reviews 2009 activities in nine sectors: agriculture, business development, education, health, infrastructure and energy, water and sanitation, environment, gender equality, and community development and local governance. The following section presents reviews of activities in 2009 site-by-site.²

1. Agriculture

Since the start of the MV project, staple crop yields on intervention farm plots have considerably increased compared to non-intervention farm plots, except when rainfall shortages have hampered crop growth (e.g., maize in Mayange, Rwanda). In 2009, the agriculture sector focused on maintaining staple crop yields by making fertilizer and improved seeds available to farmers through credit and loans, with decreasing subsidy depending on the site. The MV project also (1) continued its activities in crop diversification for nutrition and income generation, (2) began integrating organic inputs for soil fertility management and (3) launched a new partnership with the World Food Program that will establish “undernourishment-free zones” throughout the Millennium Village sites.

Increased Production of Staple Food Crops

As in previous years, in 2009 overall staple crop yields increased significantly in intervention farm plots as compared with non-intervention farm plots. For example, average yields in intervention farm plots in Mbola (Tanzania) and Mwandama (Malawi) were approximately two and three times higher (respectively) compared with non-intervention plots. Some MVs recorded declines in yields from 2008, perhaps partially due to reduced subsidies for inputs such as fertilizer, which may have resulted in farmers purchasing and applying less fertilizer. This decrease in yields can be expected as the project transitions from a subsidy- to a credit-based agricultural finance system.



Crop of maize in Bonsaaso (Ghana).

Yields of other crops increased as well. In Mayange (Rwanda) in 2009, for example, farmers shifted focus from maize to cassava cultivation in response to successive crop failures due to rainfall shortages. Improved varieties of cassava crops have done well, resulting in strong yields in 2009. However, rainfall fluctuations did negatively affect crop production in some villages. In Bonsaaso (Ghana), heavy rains caused flooding in some areas of the cluster, reducing crop production.

² Please note that some of the data cited in the following reviews of MV sectors and clusters is in the process of being fully verified. Midterm (i.e., mid-project Phase I) data compiled over the course of 2009 will be released starting in spring 2010.

Agriculture for Nutrition

One of the project's goals is to ensure that communities have access to adequate nutrition. Starting in 2008 and continuing through 2009, the agriculture sector has promoted crop diversification in the interest of promoting nutritious crops such as orange-fleshed sweet potatoes, cowpea, mangos, citrus and leafy vegetables such as amaranths, as well as livestock for meat and dairy. A particular emphasis was given to home gardens, which are predominately managed by women farmers. For example, in Gumulira (Malawi), 130 women received a grant from the World Bank to establish "sack gardens," burlap containers planted with mustard greens, rape (canola), tomatoes and cabbage.

The major challenge in promoting nutritious crops for home consumption is the lack of understanding of the importance of these crops to health. To improve community understanding of the value of nutritious crops, public education campaigns on how to better manage household budgets, with emphasis on investments in family and child health, are underway. Research is planned for 2010 to better understand the role of diversification interventions in promoting income generation and nutrition.

The new partnership between the MV project and the World Food Program (WFP) will also address nutrition by working to eliminate undernourishment in all village sites. These plans to expand joint action to cut hunger and malnutrition across Africa will apply coordinated, science-based, emerging best practices in nutrition and food security. Partnership objectives include ensuring universal school meal coverage for children in primary schools within the 12 Millennium Village clusters participating in the school meals program; finding the best way of meeting the nutritional needs of children affected by HIV/AIDS, tuberculosis and other pandemics; and working with smallholder farmers to boost productivity and incomes.



The grain warehouse in Mwandama helps farmers earn a higher income.

Agriculture for Income Generation

In 2009, the MV project supported a continuation of activities begun in 2008 including (1) linking farmers to markets for selling surpluses of staple crops, and (2) diversifying the farming system with high-value and nutritious crops and livestock.

The MV project and the World Food Program's recently established Purchase for Progress (P4P) program launched an exciting new initiative in 2009 as a country-specific part of the broader partnership with the WFP. Beginning in Ruhiira (Uganda), the WFP is purchasing some of the surplus maize, grain, rice and other staples produced in the MVs for distribution

as food aid in other parts of Africa and the world. Farmers in Ruhiira sold more than 150 tons of beans to the WFP in 2009. Similar negotiations with other buyers are being conducted in other MVs.

In addition, various agricultural diversification activities for income generation were started or continued in 2009. These include producing vegetables during the dry-season using various small-scale irrigation techniques, producing spices and honey, and keeping livestock. (See the Business Development sector review later in this section for more about agricultural enterprise projects in 2009.)

Transition from Input Subsidies to Loans

Input subsidies were phased out in many of the MV sites in 2009 after a 2-3 year gradual transition to a credit-based system. Various systems were used to implement and manage loans. Input loans in 2009 were administered by an external financial institution whenever possible. In Sauri (Kenya) for example, the project began a partnership with Equity Bank to manage agricultural loans, and the Bank found the first year of lending to be a great learning opportunity for going forward. Even in these early stages of the credit-based system, crop yields were up in Sauri in 2009 without the subsidy.

Similar financial institutions managed input loans in Pampaida (Nigeria) and in Potou (Senegal). Loan acquisitions and repayments were managed by existing cooperatives in Koraro (Ethiopia). In some clusters, such as Mbola (Tanzania), the project administered the loans since there was no other financial structure in place that could serve the cluster. Repayment rates in Mbola were low and the project is working to identify a suitable financial institution for subsequent credit and lending programs. In all clusters, the project facilitated the timely availability of inputs including fertilizer and improved seeds.

Organic Inputs

In 2009, the project promoted the use of organic inputs alongside fertilizers as part of integrated soil fertility management. Various organic inputs were used including nitrogen-fixing agroforestry species, crop residue recycling, animal manure and compost. The organic inputs complement mineral/chemical fertilizers that were initially used to jumpstart agricultural production.

Except in villages where livestock is a large component of the farming system (such as in Mali and Senegal), the use of organic inputs remains low. Many challenges limit the adoption of organic inputs including competing uses for crop residues, lack of seeds to produce nitrogen-fixing agroforestry species and insufficient labor or resources to enable the preparation of organic inputs. Except in the case of agroforestry species, the quality of most produced organic inputs is low. In Gumulira (Malawi), for example, where almost every household has a compost pit, the quality of the compost is very poor due mainly to poor decomposition. In 2010, an emphasis will be made on training farmers in producing improved quality manure, compost and other organic inputs.

Main Challenges in 2009

- Transitioning from agricultural subsidies to credit schemes is a challenge for a number of small-scale commercial and subsistence farmers, or smallholders, in the MVs. Designing such programs requires knowledge and skills related to understanding (1) the history and culture of credit within each of the MV clusters, (2) the capacity, experience and inclination of farmers to repay and (3) the ability, scope and interest of local financial institutions to become engaged and committed to providing rural finance on a sustainable basis. New partnerships that will contribute to the success of this transition include those with Equity Bank (credit assistance and program management in Kenya) and Mosaic (in-kind fertilizer donations planned in 2010 for Ethiopia, Kenya, Malawi, Mali, Nigeria, Tanzania and Uganda) among others.

Main Priorities for 2010

- Continue diversification with focus on nutritious high-value crops and livestock in all clusters, refining the most profitable ones and expanding to more farmers.

- Include small-scale processing facilities for agricultural products in 25% of the clusters.
- Initiate home-based fortification programs (e.g., soy flour with maize flour, palm oil mixed into porridge) for improved complementary foods consumed by infants and young children.
- Focus on integrated soil fertility management in all clusters.
- Include post-harvest and storage management as a focus in all clusters to reduce storage losses and contamination.

2. Business Development

In 2009, the business development team made progress toward the sector's three overall goals:

1. To identify new income-generating activities for households so that they can supplement their income derived mainly from staple crops.
2. To optimize the usage of land in the dry season by developing irrigation systems.
3. To realize the full value chain of agricultural commodities through post-processing and better access to markets.



Outside the cassava flourmill and bakery in Mwandama (Malawi).

The MV project worked to support the farmers' transition to commercialized agriculture, including diversification into cash crops, credit-based access to inputs and capital-based investments in plants and machinery. For example, the project has recently helped extend credit services in rural western Kenya through a joint guarantee structure with Equity Bank established in 2009. It has also initiated cooperative-scale agribusiness investments in Ethiopia and Mali, and worked with private investors to identify a multi-million dollar agro-processing opportunity in Ghana.

Additional business development initiatives launched or continued in 2009, which are detailed in the Site Reviews section presented later in this report, include the following:

- Palm oil production in Bonsaaso (Ghana).
- Warehousing and grain receipting in most clusters to allow households to benefit from the price swings in staple commodities (including Malawi, Mali and Uganda among others).
- Cassava bakery in Mwandama (Malawi).
- Revitalization of women's gardens in Tiby (Mali).
- Cassava flour production in Mayange (Rwanda).
- Cultivation of ginger and cardamom, and the introduction of high-value Boer goats in Ruhiira (Uganda).

In addition, and in order to examine how such businesses should be identified and launched, the business development coordinators from East and West Africa convened separate regional business

development workshops in 2009. This provided an opportunity to share lessons learned, address challenges for enterprise development in each cluster and develop a path forward for business planning. These workshops were made possible by a grant from SNV.

Agricultural Finance

A major activity for the business development sector in 2009 was connecting communities to financial institutions as a better way of creating micro-loan programs that would be sustainable over the long term. As also described in the Agriculture sector review above, for the MV project to move away from a grant-based system for providing high quality seed and fertilizer and toward a credit-based system, access to agricultural finance is necessary. Starting in 2006, input subsidies have been gradually reduced and were running at low levels in 2009. Although the low incomes and difficult rural settings of most of the MV clusters make private sector banks and financial organizations reluctant to take on this risk, the project has been forming partnerships with a number of microfinance organizations and commercial banks to manage the loans.

For example, Opportunity International Bank of Malawi (OIBM), which became a partner with the MV project in spring 2008, is bringing Mobile Banking to Mwandama (Malawi). Through this initiative, OIBM is able to reach out to the rural areas with full banking services ranging from deposits to lending and insurance products, and conducts transactions through Smart Cards, which use biometrics (i.e., fingerprints) as a form of identification. So far, more than 2,000 farmers have opened savings accounts and are using the Smart Card to access banking services in the villages. Of these, 500 farmers have received small business loans ranging between \$70-350, and loan repayment has been steady at 98-100% throughout.



Members of a women's cooperative in Mwandama (Malawi) with Smart Cards from Opportunity International's mobile banking service.

In addition, OIBM has collaborated with the project to establish a warehouse receipt program, where community members deposit surplus maize or beans at harvest time until later in the year when prices are high enough to generate profit. The farmers are paid 25 kwacha (about US\$.17) per 50 kg bag at the time they deposit the maize or beans. The produce is sold between October and December when the prices are high, and the balance is given back to the farmers after deducting storage and financing costs.

Equity Bank is another recent partner working with the MV of Sauri (Kenya). The repayment rate in Sauri's input credit program improved significantly in 2009 over 2008 due to better-targeted beneficiary groups, new relationships with financial institutional and improved lending modalities. Other financial institutions managed input loans in Pampaida (Nigeria) and in Potou (Senegal) in 2009. Loan acquisitions and repayments were managed by existing cooperatives in Koraro (Ethiopia). Talks are underway with Stanbic (Standard Bank) to offer loans in Bonsaaso (Ghana).

In some clusters, such as Mbola (Tanzania), the MV project administered the loans in 2009 since there was no other financial structure in place that could serve the cluster. However, loan recovery was much lower than expected due to a number of factors, including the variability of the rains and a

grasshopper infestation, as well as a breakdown in the purchasing chain that had been agreed to with the large-scale buyer. The experience offers important lessons that will help improve the success rates of future credit-based business development initiatives.

These early partnerships show that rural credit programs for farmers can work and that loans can be repaid, if screening is done carefully and the penalty for defaulting is perceived as real. For the knowledge and the systems to become institutionalized, additional support will be needed in the form of technical expertise and finance. This will be one of the key priorities in 2010.

Lessons Learned in 2009

Sector initiatives going forward will benefit from and build upon lessons learned in the initial stages of business development activities in the MVs, including the following.

- **Agricultural incomes can be increased through productivity tools.** Technologies and tools to ease bottlenecks along commodity value chains are accessible and easily available, and they often require only a modest investment in capital goods and infrastructure. Investments in post-processing draw higher incomes. The MV project must facilitate these processes, orchestrate linkages and invest in capacity building for these technologies and tools to perform optimally. Unfortunately, market forces alone will not solve these constraints in these rural settings.
- **Partnerships require strong management support.** Progress depends on whether strategic partners are willing and able to move at the same pace. This has been a challenge in some of the sites, as there have been delays in the delivery of services by some key partners. The next phase of work will include an increased focus on mechanisms to support local entrepreneurs that can manage local alliances and implementation. Partnerships need to be flexible to allow joint problem solving and timely action.
- **Analysis along the entire value chain is important.** Working on specific segments of the value chain will not deliver the expected results alone, as other segments of the chain may not work efficiently or may become bottlenecks as additional supply starts to flow in from initial segments. In most commodities, issues related to capacity strengthening and finance apply to most of the segments of the value chain, from inputs to marketing. Challenges in tail-end segments of a value chain can be resolved by improving commodity quality, quantity and production standards.
- **Supporting smallholder farmers during transition from subsidy to credit is necessary.** The MV project has had tremendous success in achieving significant improvements in smallholder productivity and in linking these to national- and global-level policy outcomes. The critical next frontier is to support sequenced transitions to commercial activity in a manner aligned



This young couple in Mwandama (Malawi) has opened a general store near the grain warehouse. They hope to earn enough so he can return to school.

with community decision-making processes and expansion of commercial operating boundaries.

Current MV teams focused on agriculture, infrastructure and social sectors have considerable depth of knowledge and expertise in their fields. The project's next phase will need to support complementary and similarly qualified teams that can tackle emerging issues of logistics, transportation, quality control, packaging and other business-related areas.

In addition, to launch new products into the market often requires some amount of up-front research and development. Funds for this type of work must be identified to test the feasibility of a given project.

Main Challenges in 2009

There are a number of challenges facing the launch of business development initiatives in the MVs, primarily relating to infrastructure, management experience and access to markets and financial institutions.

- Most of the rural areas in which MVs are located have poor infrastructure in terms of roads, electricity and water. This makes it very difficult to introduce anything other than small-scale cottage industries or industries that can be powered by residual agro-waste. Most of the larger factories are therefore located in the urban and peri-urban areas and the rural agricultural production base remains unconnected to larger markets except through intermediaries that absorb a significant portion of the profits. Continued planned improvements to infrastructure will help create more opportunities for business development in the MV sites.
- Because most of the farmers in the MVs are facing issues such as depleted soil or difficult terrain and are generally dependent on rain-fed agriculture, they pose a high investment risk to any commercial bank. Furthermore, the cost of managing smallholder accounts is high and this is reflected in the high interest rates that the banks charge. As a result of these constraints in many sites, there is little or no credit that flows in the rural areas, except for informal money lending, which often is predatory and unregulated. To successfully break the cycle of extreme poverty, the project will continue forming partnerships with financial institutions that are willing and able to extend credit in this high-risk rural context.
- Because of poor market access and lack of distribution networks, much of the produce from the rural areas is sold into the local markets and therefore never reaches its full commercial potential. Further compounding this problem is the fact that there is also poor price discovery which in turn allows intermediaries to exploit the poor by paying prices well below market value. Improving access to markets is a key priority.
- Due to small plot sizes and a lack of formal training in how to start or manage a business, poor rural farmers tend to be confined to subsistence farming, and have little ability to escape the poverty trap on their own. For businesses to flourish in these environments, the MV project will need to make further investments in human and financial capital.

Main Priorities for 2010

- Identify and hire key personnel for business manager positions at the national- and regional-levels. The first hires will be based in five clusters in Ghana, Kenya, Malawi, Mali and Uganda as well as at the two MDG Centers.
- Establish linkages with commercial credit organizations and NGOs that can provide the small and medium loans that the households need to start their business initiatives. In parallel, the MV project will develop the legal frameworks to support these activities.
- Implement the reporting structures that are needed to track and understand money flows, thereby allowing investors to make sound business decisions.

The success of local businesses, both large and small, will become the backbone of the sustainability of the MVs. In 2010, the project will continue to actively seek partners and investors to finance the many promising commercial enterprises taking root.

Also see the discussion of Business Development in the below section “Key Priorities Moving Forward.”

3. Education

The overall goal of the education sector is to provide a complete quality primary education to all children in the Millennium Villages and prepare them for secondary school, while cultivating gender equality and supporting strategies for practical skills training. To achieve this aim, the education sector collaborates closely with the other sectors as well as local, district and national government representatives, local communities and NGOs. In 2009, the education sector continued implementing programs and initiatives focused on fulfilling project goals in all sites.



A schoolyard garden in Ruhiira (Uganda).

School Meals Program and School Gardens

The school meals program was introduced to most of the sites at the beginning of the MV project. It continues to be an important contributor to student enrollment and attendance, as well as students' ability to concentrate on their studies due to improved nutrition and adequate food intake. Some of the school meals programs that were initially reliant upon WFP or national support are now sustained by contributions from the community, which is the intended goal.

Nearly all MV sites are running school meals programs. For example, in Bonsaaso (Ghana), the coverage by the school meals program is 100%, and in Toya (Mali), four out of five schools are covered, and the WFP is planning to start a school meals program in the fifth school in 2010.

Cost effectiveness is essential to the sustainability of the school meals program, and sites have developed a number of ways to assure this. In some instances, such as Tiby (Mali), the project gave subsidized fertilizers to farmers in the first year and communities paid back through in-kind contributions to the school meals program (with millet, rice, beans, etc.). The strategy in Bonsaaso

(Ghana) is cost sharing whereby the project bears the cost of the staples and some nutritious ingredients such as fish and beans while the community provides water, fuel wood and additional ingredients for cooking. Each community agrees on its strategy for mobilizing procurements and funds to meet the recurrent needs. In some cases, parents also agree to contribute a small amount of money per week per child.

Many of the schools also now have gardens to supplement the school meals. For example, Sauri (Kenya) has a garden and small herd of livestock that doubles as a teaching farm and a supply source for the school meals program. Similarly, in Ruhiira (Uganda), the project has provided improved seeds and technical support for schools to grow high-value vegetables like cabbage, carrots, spinach and tomatoes as well as staples like maize and beans for both school meals and for sale to the community.

The school meals program has heavily relied on community involvement, especially from women, for its success, and the education sector has been providing training to members of these teams on participatory planning and management.

Enrollment and Attendance

Improved school infrastructure, better-trained teachers, the school meals program and greater community involvement continued to help boost enrollment and attendance rates across the region in 2009. Exact data for 2009 in on this front is currently being analyzed; however, an upward trend in these areas is noticed project-wide.

The emphasis on quality of education includes teacher training to improve academic performance of students. For example, Ikaram (Nigeria) reported a full completion rate for primary schools at a nearly 1:1 ratio of girls to boys. A female student from the MV of Toya (Mali) topped all the candidates in the district of Tombouctou at the 2009 secondary school entrance exam. In Potou (Senegal), the repetition rate dropped from 14% to 7% while the dropout rate drastically fell from 8% to 1%.

School Infrastructure

Every MV site has had major accomplishments in infrastructure construction, in some instances in partnership with national governments or international NGOs. New schools have been constructed within safe walking distances from students' villages and existing classrooms have been renovated. There are improved single-sex ventilated latrines installed at most of the schools, and the sites that do not have them yet either have them budgeted for 2010 or are seeking funding. In addition, clusters including Bonsaaso (Ghana), Ikaram (Nigeria) and Ruhiira (Uganda) have also built resource rooms equipped with at least three computers.

Across the region, several schools have water boreholes and a few of them are connected to a running water system. The availability of water in schools has improved sanitary conditions, including by making the PHASE (personal hygiene and sanitary education) program possible. Some schools are connected to solar or national electricity power grids (including in Ghana, Kenya, Nigeria and Senegal), providing lighting both during and after school hours and enabling the use of electronic devices like laboratory kits, televisions and computers.

Other important infrastructure initiatives include teacher housing, such as in Ruhiira (Uganda) where a 16-room staff housing building was completed in 2009, and energy saving institutional cookstoves,

such as those installed in four schools in Mayange (Rwanda) that require substantially less fuel wood to power and produce less smoke.

Teacher Training and Capacity Building

Supporting quality education is another priority for the education sector. The project helps to design and implement training programs according to the needs of the teachers in the MVs, while also supporting participation in training workshops sponsored by the Ministry of Education and peer-to-peer training in schools. These various training sessions have covered a number of areas including but not limited to child-centered innovative pedagogical approaches, methodologies for multi-classroom instruction, classroom management, techniques for gender awareness and the elimination of gender based violence, and the use of computers for teaching and learning. Teacher performance has been jointly monitored and evaluated by cluster education coordinators and local or district school authorities.

Gender Equality

Gender equality in schools remains a challenge despite national governments passing laws against gender bias. The MV education sector works to improve gender equality through a number of approaches, including intensive community campaigns on the importance of education for girls and the advantages of delayed marriage. The project also provides age-appropriate sexual and reproductive health education, and some sites provide sanitary pads to adolescent girls to help improve school attendance. In addition, teachers, school administrations, parent-teacher associations (PTAs) and school management committees have received training on several gender issues like gender inclusiveness and gender-based violence.



A girls' empowerment club in Sauri (Kenya).

These efforts are having a positive effect. For example, in Pampaida (Nigeria) the ratio of girls to boys in schools has grown much closer to parity than before the MV project started.

School 2 School Program

The School 2 School program builds upon the MV project's mission to achieve the Millennium Development Goals (MDGs) in part by empowering children and youth. The program leverages innovative technology to connect classrooms in impoverished communities in Africa to classrooms in the United States to engage in a cross-cultural learning experience that promotes global awareness and action. Schools in the Millennium Villages in Africa will benefit directly through peer-to-peer interaction with students and teachers in the United States while obtaining important computer literacy skills. Meanwhile, students and teachers in the United States gain a clear, accurate picture of life in Africa and are equipped with the experience to be advocates and activists in the campaign to eradicate extreme poverty. The work is premised on the belief that, for the first time in history, our generation has the opportunity to end extreme poverty, hunger and preventable disease by coming together and forming these global connections.

The Millennium Villages project launched the School 2 School pilot program by connecting the Whitby School of Greenwich, Connecticut, to the Omniwicamba School in the Millennium Village cluster of Ruhiira (Uganda) on May 15, 2008. The Kabuyanda Central Primary School, also in Ruhiira, joined the School 2 School program in 2009, and it will soon be paired with a school in the United States for cross-cultural learning. Twelve teachers and 100 students are expected to participate in this program.

In Kenya, the program focused on providing training to eight teachers to prepare them for the launch of the School 2 School program in four schools. The training is for key teachers to learn basic skills in using the Internet, as this will be the main medium of exchange with other schools in the program. It will also introduce teachers to the MDG-based School 2 School curriculum. Training in 2009 took place over two days in Kisumu with two teachers from each of four schools: Bar Sauri Primary School, Karariw Primary School, Kisumu Day High School and Nyamnina Primary School. These four schools will be the first beneficiaries of the School 2 School program in 2010.

In August 2009, School 2 School began a close collaboration with the One World Youth Project, which has more than five years of experience in developing dynamic school partnerships around the world. One World is developing expanded curricular resources and an on-line platform for this exciting program.

Private and Non-Formal Education

Research shows that formal public schooling cannot alone achieve universal primary education by 2015 (MDG 2) in most developing countries. Therefore, the MV project's education sector is also prioritizing non-formal education like adult literacy programs (such as those in Mayange, Rwanda) and vocational schools, as well as private education such as Koranic schools, by launching new initiatives and strengthening programs in communities where they already exist. The project is also involved in providing training to youth in these schools and facilitating partnerships between vocational schools and government agencies and the private sector for apprenticeship and work opportunities.

Early Childhood Development (ECD)

Education of the very young is being addressed in some sites. For example, a new ECD center in Gumulira (Malawi) is serving 122 children, and caregivers received nearly two weeks of training in partnership with the Mchinji District Assembly.

Community Participation

The education sector works closely with the communities—namely through the PTAs, school management committees and other community education based groups—to perform needs assessments and to identify areas of focus. The sector is also involved in the development of community education action plans. By providing capacity-building training, the project is helping community members active in education issues learn how to better understand their roles and manage their responsibilities. This has led to the community's active involvement in the construction of school infrastructure and teachers' quarters, the provision and management of school meals programs, the improvement of school enrollment especially among girls, the monitoring of both students' and teachers' attendance, and so on. Notably, women tend to be most active and empowered by these trainings and, as a result, they have been playing an important role within the local committees.

Building Synergies and Partnerships

The education sector has direct and indirect relationships with NGOs and institutions operating in the project site areas, and has developed synergies with many sectors involved in the MV project including health, agriculture, water and sanitation, gender and business development. Across all MV sites, education programs also have built strong working partnerships with their respective governments, resulting in the construction and renovation of school-related infrastructure, the recruitment and salaries of some MV teachers and the provision of capacity-building training.

The education sector has also fostered partnerships with several NGOs and institutions to support a number of areas from supplying textbooks and computers to water points and the school meals program. These partners include buildOn, Care International, Ericsson, GlaxoSmithKline, Save the Children, UNICEF, WFP and Zain.

Main Challenges in 2009

- Financing school meals programs is a challenge due to inflationary pressures, the credit repayment requirements of farmers that have historically contributed to these programs, and project budgetary limitations. These are affecting the MV project's ability to maintain and/or increase the number of students that can and should benefit from this program. Part of the solution will be to expand our partnership base with local and international institutions committed to education in poor rural areas such as the World Food Program. Another key element to our strategic approach will be to support income-generation activities and business development initiatives that will increase local capacities to finance school meals programs.
- Because of the remote rural setting of many MVs and a lack of teacher housing, teacher retention is another challenge. Building housing for teachers, such as was built in Bonsaaso in 2009, will help teachers to settle in the MVs and serve the communities for longer periods of time.
- Providing teacher training is another challenge that must be met to ensure that teachers are adequately equipped with needed skills in experiential learning, ICT and technology education.

Main Priorities for 2010

- Provide opportunities for children currently excluded from the formal public education system to complete primary school, with a special emphasis on girls, children of migrant workers or pastoralists, orphans, children with special needs and children who have been attending private schools.
- Maintain and improve existing school structures, and support the construction of new schools where needed.
- Increase access to appropriate curricular resources that may effectively improve teaching and learning.
- Improve teacher capacity to support experiential learning, ICT and technology education.

- Ensure that girls receive support and mentorship within the schools, and ensure that they have access to adequate hygiene facilities.
- Increase involvement of and sustainable links to Ministries of Education, district education offices, local universities and teacher training colleges.
- Strengthen community support for education and school meals programs.
- Expand bursary support for secondary education.
- Introduce Early Childhood Development and preschool education where it does not yet exist, and support ECD teachers with training and teaching materials.
- Increase adult literacy and education.
- Support more vocational training.
- Strengthen health and nutrition education within the schools.

4. Health

By the beginning of 2009, most infrastructure projects related to the health sector and “quick win” interventions—including distribution of insecticide-treated mosquito nets, Vitamin A supplementation and immunization campaigns—had been implemented in all MV clusters. With the exception of Gumulira and Mwandama (both in Malawi) where clinic building has been slow, all sites have completed their basic construction. In addition, services for maternal and child health, as well as for testing and treatment of malaria, HIV/AIDS and TB, were in place by the end of 2008.

The MV project’s health sector strategy is founded on the premise that sustainable health gains can only be achieved through an integrated model where health sector interventions take place alongside efforts to increase food production, enhance education and economic opportunities and improve access to clean water and basic infrastructure. In 2009, the main focus for the health sector was extension of mobile health initiatives, as well as continuing prior programs and forging new partnerships.



A health clinic in Potou (Senegal).

UNAIDS Partnership

In 2009, UNAIDS and the Millennium Villages project signed an agreement to strengthen efforts to eliminate mother-to-child transmission (MTCT) of HIV in Africa. The aim of the partnership is to help local governments create “MTCT-free zones” in all 14 MV sites. The agreement includes measures for ensuring that women of childbearing age avoid becoming infected and those who are infected avoid pregnancy, increasing access to antenatal care services, providing HIV testing and counseling to expectant mothers, and offering expanded access to HIV prevention and treatment services for children. The agreement will bring together the Millennium Village project’s primary healthcare strategy with the expertise of UNAIDS in community- and family-centered prevention strategies in order to create jointly monitored MTCT-free zones.

Community Health Worker (CHW) Program

In 2009, the health sector focused on strengthening some of the more challenging systems elements, especially the community health worker (CHW) program. This included providing training the CHWs as well as developing tools to support their activities, including a highly effective Rapid SMS communications system.

At the start of the project, in order to implement the quick-win interventions, a CHW program was improvised from what was available in the field. Community members who in the past had been trained by small community based organizations (CBOs) and non-governmental organizations (NGOs) working in the area were engaged as CHWs, where available. There were a few exceptions—Ethiopia, Ghana and Malawi—that benefited from a government-trained and remunerated group of health workers. For the remaining sites, CHWs were provided basic training by the nurses and other Ministry of Health staff on an ad hoc basis.

In March 2009, the MV project launched an innovative CHW program across all 14 sites. By employing a combination of academic and field research, cutting-edge operations tools, and appropriate technologies such as mobile phones, the project is taking the concept of semi-professional health workers to new levels and re-imagining what it means to enact community-based health management in the developing world.

To streamline coordination of the CHW program, one CHW manager for each site has been identified or recruited. The CHW manager is responsible for overseeing supervision and management of the CHWs in conjunction with the site health coordinators. Their roles and responsibilities include information collection and data management as well as supervision of reporting and coordination of training sessions for the CHWs.

The CHW managers also oversee verbal autopsies, a crucial element of the program for investigating the causes of death in the community. Verbal autopsies allow managers to capture critical information and then use this information to inform decisions about health activities in the clinic and in the communities. The managers also facilitate community morbidity and mortality rounds that aim to provide feedback on their health promotion and curative services.

The redesign of the CHW program has allowed for improved services offered at the household level. For example, although a number of sites started to test and treat malaria at the community level in 2008, now CHWs are able to test and treat malaria and diarrhea at the household-level in all MVs. Equipped with a mobile phone and an improved referral system, CHWs are also able to refer children and pregnant women with danger signs to the clinic and follow up on their care.

Due to the ability of CHWs to test and treat patients who might not otherwise come to a health clinic, preliminary data suggests that the CHW program is already having an impact on reducing rates of malaria and childhood diseases, reducing incidences of infant and maternal mortality, and addressing other illnesses and health problems at the household level.



Community health workers (CHWs)
with mobile phones in Mbola
(Tanzania).

Rapid SMS and ChildCount+

Another key component of the upgraded CHW program is the development of tools including ChildCount+, which uses Rapid SMS technology via mobile phones. With ChildCount+, CHWs can send patient symptom information via text message to a toll-free number, and receive back a coded text message giving specific actions. Actions could include adding or modifying information in a database or triggering a response back to the user based on specific workflow logic defined by the system. In practical terms, a CHW visiting a household can test a patient for malaria using a rapid diagnostic test (RDT), send an SMS message to the system and then administer appropriate treatment based on the system's immediate response, thereby significantly improving the efficiency of some diagnosis and treatment procedures.



Rapid diagnostic test (RDT) kit.

The first MV site where the ChildCount+ Rapid SMS system is being implemented and tested is Sauri (Kenya). The program is being used to register all children under five, monitor all malnourished children, register measles vaccinations, and report results of RDTs for malaria (and receive an immediate response on treatment protocol). After three months of implementation, by the end of 2009 CHWs using the system sent in over 20,000 SMS-based health reports and registrations, consisting of 9,501 new children registrations (95% of children under five), 7,646 nutrition-screening reports, 839 RDT results and registration of 7,803 measles vaccinations (averaging 3.5 reports per SMS). Of all the reports submitted, only about 10% contained errors, and when an error is detected, the system is immediately able to prompt the user to resubmit the report. In a place that had been struggling with achieving some of the last-mile results and decreases in child-mortality had stagnated, early evidence suggests that there has been a decline in recorded childhood deaths in Sauri.

Overall, early results of the ChildCount+ Rapid SMS system have been highly promising. The child registry has allowed for specific targeting of interventions as well as improved compliance. For example, all children reaching six months of age can be quickly identified, and a message sent to the CHW covering their household to administer a Vitamin A supplement. Likewise, reminders for other age-specific supplementation, immunizations and/or monitoring are now automated. In addition, routine use of this system helps to identify at-risk children. In the nutrition-monitoring program, for example, not only do severely malnourished children receive immediate care, those on the borderline are also tracked to ensure they are growing adequately, and provided additional counseling or immediate care when necessary. Finally, one of the indirect consequences has been the ability of the supervisory team to provide immediate feedback to CHWs, which has led to improved performance.

With the lessons learned from Sauri, as well as in other sites, health sector efforts moving forward in all 14 sites will focus primarily on five areas: (1) strengthening management and supervision structures, (2) building better health operations systems, (3) scaling up use of effective technologies (mainly Rapid SMS-like solutions), (4) increasing community engagement and (5) improving the quality and reliability of service delivery.

Main Challenges in 2009

- Reaching residents of MVs who live especially far from established health clinics is a primary challenge. This is being addressed by extending mobile health services through the CHW program, improving roads and other initiatives, though this continues to be a challenge due to resource constraints.
- In 2009, the health sector began facing the challenge of continuing to provide access to health care at low or no cost to village residents after the end of Phase I of the project. Strategies include coordinating with national health insurance plans, and technical staff from the MDG Centers began playing a more active role in deciding how to manage the transition to new approaches for Phase II.

Main Priorities for 2010

- Complete all health facility construction projects by the end of 2010.
- Ensure all clinics are equipped with basic clinical, anthropometric and maternity equipment by the end 2010.
- Develop a training plan for clinic staff based in areas where progress is lagging (e.g., family planning and nutrition).
- Ensure all sites have a functioning vital registration and visual autopsy system for maternal and child deaths by the end of March 2010.
- Strengthen linkage between the CHW program, health facilities and monitoring and evaluation/data reporting.
- Procure and distribute priority vaccines, pharmaceuticals and supplements.
- Scale up the use of effective technologies.
- Complete distribution of cell phones from Sony Ericsson and establish a toll-free number for use with Rapid SMS and ChildCount+.
- Expand community-based management of childhood illnesses to include pneumonia and acute malnutrition.
- Promote safe childbirth by reinforcing antenatal care, implementing safe childbirth checklists in all of delivery wards, strengthening post-natal care services and establishing community-level neonatal care activities, including mandatory CHW household visit within 48 hours after a birth.
- Work toward establishing MTCT-free zones by implementing new prevention of MTCT protocols in all sites.
- Increase community engagement with health initiatives.

5. Infrastructure and Energy

Infrastructure was a major focus for the MV project in 2009.

This sector has seen a great deal of progress since the beginning of the project in the building or rehabilitation of essential roads, bridges and drainage systems, providing safer water sources and connecting MV sites to the electricity grid. Key activities in 2009 included expanding ICT access through partnerships with Ericsson and Zain, bringing piped water systems to a number of clusters through partnership with JM Eagle and partnering with local governments to facilitate road projects.

Roads and Transport

As business development activities are becoming more important in all MV sites, the improvement of the road network plays a critical role in facilitating access to markets and reducing transport cost. In this regard, the progress on improving the road network both within the MV clusters and to the main market towns has continued during 2009 in close coordination with local governments.

By the end of 2009, most MV sites had completed work to rehabilitate damaged roads and make spot improvements such as constructing small bridges, installing culverts and surfacing deteriorated or dangerous stretches. In Bonsaaso (Ghana), Koraro (Ethiopia) and Ruhiira (Uganda), the MV project has partnered with the roads departments of each respective government to rehabilitate the main road connecting the clusters to the national road networks. In all three cases, implementation of this project began in late 2009 and work is progressing well. Planned interventions are continuing at a good pace into 2010 in Potou (Senegal) with the rehabilitation of 17 km of road, in Mwandama (Malawi) with the construction of one bridge and one reinforced concrete roadbed that opens a corridor to one third of the cluster, in Tiby (Mali) with 50 km of gravel roads maintained and in Sauri (Kenya) with more than 80 km of roads upgraded.

Electricity and Energy

As of the end of 2009, the extension of the national electricity grid has reached more than 50% of the cluster in Koraro (Ethiopia), Bonsaaso (Ghana) and Sauri (Kenya). In the cases of Koraro and Sauri, the MV project has been the major partner and local utilities have also contributed. In Bonsaaso, the government is leading the effort with additional



Road conditions in Koraro (Ethiopia) before rehabilitation.



Improved section of the Hawzien-Megab Road in Koraro after rehabilitation (Ethiopia).



Spools of wire (visible middle right) for the government's work to extend the electricity grid await installation in Kabuyanda, the main market in Ruhiira (Uganda).

support from the MV project. In other clusters such as Tiby (Mali), Potou (Senegal), Mbola (Tanzania) and Ruhiira (Uganda), some institutions have been connected to the national grid while agreements for a joint larger extension have been signed and construction is planned to take place in 2010. In Mayange (Rwanda), the project is negotiating a cost sharing agreement with the Rwanda Electricity Company to extend the national grid to two primary schools in the cluster. In Mwandama (Malawi) and Pampaida (Nigeria), plans for construction have been finalized and sent to the UNDP for competitive bids to complete work in 2010.

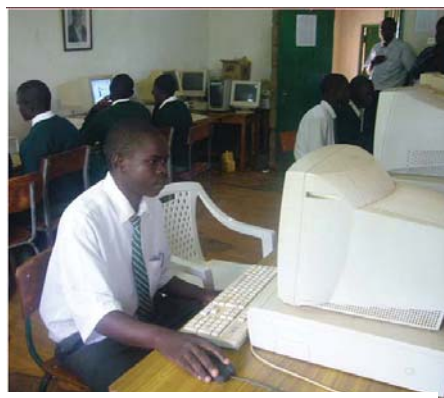
A number of institutions such as health centers and schools that are located far from the main electricity grid have been electrified through solar PV (photovoltaic) systems. This is the case in all sites including Koraro (Ethiopia) where 10 schools, one farmer trading center and one health post were electrified, and Mwandama (Malawi) where five schools and the main grain storage facility were electrified.

In 2009, the successful LED lanterns program in Mwandama (Malawi) continued and has been initiated in other clusters. Gumulira (Malawi) has already started the program and Mayange (Rwanda) is running a similar one with a different model that also works in place of the traditional kerosene lamp. Ghana and Nigeria are the next countries in which the program will be implemented.

On the cookstoves program, institutional cookstoves have been installed in nearly all schools across all MV project sites and are being used to support the school meals program. A commercial model for household sale is being introduced in Mayange (Rwanda) and Ruhiira (Uganda), and this will be expanded to other clusters.

Information and Communication Technology (ICT)

In 2009, the partnership with Ericsson continued to be a key element of the MV project's ICT initiatives. Major achievements in 2009 included the completion of cell phone network coverage in Bonsaaso (Ghana), Dertu (Kenya), Ikaram and Pampaida (Nigeria), Mbola (Tanzania) and Ruhiira (Uganda). Furthermore, negotiations with Zain and MTN to provide toll-free emergency voice services and closed user groups for health workers occurred. By the end of 2009, Sony Ericsson had donated over 900 handsets for clinics and community health workers (CHWs), and had committed to completing all health networks across all 14 MV sites in 2010, which will bring the total contribution to over 1,200 handsets for the health sector.



Computer lab in Sauri (Kenya).

In several MV clusters, ICT centers and school computer labs have been established and equipped with computers, taking advantage of newly available Internet connectivity to the area. This is the case in Bonsaaso (Ghana), Sauri (Kenya), Ikaram and Pampaida (Nigeria), Ruhiira (Uganda) and others.

In Ruhiira, the community radio was set up at the allocated frequency, configured and test run, and it has been working very well for several months.

Main Challenges in 2009

- Obtaining commitments from and follow-through on government contributions to infrastructure initiatives is one of the most challenging aspects of MV project implementation, requiring sustained, high-level engagement before and after agreements are made. Signatures of Memoranda of Understanding (MoUs) and similar protocols between the MV project and appropriate government agencies or public utilities are necessary to ensure proper transfer of ownership and sustainability. Such agreements must include specific clauses to guarantee the provision of funds for future maintenance.
- Alternative arrangements—such as stand-alone systems or reduced plans which the MV project can pay for in full—have proven necessary when government commitments have not been realized. Partnerships with other entities operating at larger scales (e.g., private sector firms, larger cooperatives, governments) are sometimes necessary for MV project infrastructure initiatives to reach success.

Main Priorities for 2010

Please see the Infrastructure Development discussion in the section below, “Key Priorities Moving Forward.”

6. Water and Sanitation

In 2009, this sector continued efforts to increase access to cleaner water and improved sanitation throughout the Millennium Villages, resulting in the construction, rehabilitation and maintenance of different water supply systems including boreholes, shallow wells, protected springs, piped water and rainwater harvesting. *(Please see Appendix for maps and additional pictures related to infrastructure and water activities in 2009.)*

More progress is needed in sanitation coverage, especially at the household level. Continuous water quality monitoring, both at the source and at point-of-use, is indicating that more work is needed to reduce water contamination related to poor sanitation in combination with drinking water treatment to ensure safer water supplies. In terms of agricultural water management, the project is developing an approach whereby business development models would be used to fund smallholder irrigation.

Increasing Access to Safe Water Supply

The success of the partnership between the MV project and JM Eagle in Potou (Senegal)—which has resulted in the number of households with access to safer water through a piped water system reaching near universal coverage—led to the extension of this partnership to seven additional clusters: Bonsaaso (Ghana), Sauri (Kenya), Mwandama (Malawi), Tiby (Mali), Mayange (Rwanda), Mbola (Tanzania) and Ruhiira (Uganda). The piped water designs for these sites—developed by the MV



Members of the MV project team performing water quality tests at a borehole in Mayange (Rwanda).

project team in collaboration with local government water agencies—have been approved and the pipes are expected to arrive from JM Eagle in early 2010. These donated pipes are expected to facilitate a significant step toward supporting the MV project's efforts to achieve 100% coverage in access to safer water for households and public institutions (e.g., schools and health centers). Progress made to date suggests that with additional financial resources, the related MDG target is achievable in most MV sites. However, in some sites, such as Mbola (Tanzania) and Ruhira (Uganda) where access to safe water is more challenging due to hilly topography and other environmental constraints, special attention and reallocated funds are needed.

Water Quality Monitoring and Improvement

Monitoring water quality from improved sources continued to be an important activity in 2009 to ensure the safety of the water supply. Various water household treatment methods have been adopted, especially chlorine-based chemical disinfection. A Procter & Gamble (P&G) project on point-of-use water treatment using the PuR system—a small sachet containing powdered ferric sulfate (a flocculent) and calcium hypochlorite (a disinfectant)—is in effect in Sauri (Kenya), Mbola (Tanzania) and Ruhira (Uganda). In addition to household water quality testing, the MV and P&G project has also been monitoring the usage and impact of PuR on incidences of diarrhea in children under five. While the per-unit cost for the sachets remains high, the project has seen positive results and this initiative could be scaled up to other MV project sites, but challenges remain in wide-scale acceptance, which requires further community awareness on hygiene and sanitation.

Improving Sanitation and Hygiene

One of the main challenges to achieving MDG 7 relates to poor sanitation and hygiene, which affect water quality. In 2009, the project began to address this concern by implementing a number of interventions, especially on public sanitary facilities (such as latrines at public markets). Inter-sectoral collaboration was strengthened in 2009 through the establishment of the Sanitation and Hygiene Working Group. The SHWG is mandated to build synergies among related sectors (i.e., health, water and sanitation, education, infrastructure) and ensure achievement of the goal. One of the inter-sectoral initiatives is a school-based PHASE (personal hygiene and sanitation education) program currently taking place in Mwandama (Malawi) and Potou (Senegal) with financial support from GlaxoSmithKline. Community-led Total Sanitation (CLTS) initiatives, which help raise awareness about hygiene practices and mobilize communities to adopt latrine use, were also introduced in a number of the clusters.



Restrooms at the market in Pampaida (Nigeria).

Small-scale Irrigation Development

The main goal of small-scale irrigation development is to transition smallholder farmers from subsistence to commercial farming. Most of the MV sites are in the process of implementing agricultural water management strategies focused on irrigation development. Examples from Mwandama (Malawi), Pampaida (Nigeria) and Potou (Senegal) show that promoting small-scale irrigation development is essential to achieving MDG 1. An inter-sectoral approach involving agriculture, water and business development has been strengthened to increase the area under irrigation and upgrade existing farmer-initiated small-scale irrigation schemes. In view of climate

change, the project is placing emphasis on improving the efficiency of water use through a technological shift to drip irrigation and increased on-farm water productivity, especially via surface irrigation (e.g., in Mwandama, Malawi; Pampaida, Nigeria; and Tiby and Toya in Mali).

A shift in the financing approach from the subsidy model to the investment model spearheaded by the business development sector has been adopted, as the main purpose of improved irrigation is to generate crops for market.

Main Challenges in 2009

- A key challenge is receiving deliveries of the water pipe donations from JM Eagle for the remaining seven sites included in the partnership agreement and expediting their installation. The MV project is working with local contractors and partners to ensure timely pipe delivery and installation so more communities can gain access to improved water sources in 2010.

Main Priorities for 2010

- Implement the JM Eagle piped water supply projects in seven additional MVs.
- Increase awareness of hygiene and coverage of improved sanitary facilities.
- Build partnerships and local capacities to enhance maintenance of water supply systems.
- Enhance water quality monitoring and point-of-use treatment to reduce incidences of water borne diseases such as diarrhea.
- Developing business plans to enhance fundraising through investments in small-scale irrigation projects, then piloting and scaling up the business model for attracting social investors.

7. Environment

Ecology factors into all MV initiatives and the project seeks both to foster environmental sustainability (since a healthy, functioning ecosystem supports livelihoods through pollination, pest control, water management, and so on), and to ensure that the environment is not compromised in the development process. In 2009, the environment sector focused on three major activities: (1) expanding tree nurseries to increase reforestation, (2) rebuilding soil fertility and soil organic matter through integrated soil fertility management practices and (3) establishing erosion control for crop areas with slopes greater than 30% grade.

Expanding Tree Nurseries

All MV sites have established tree nurseries, although some do not yet have the capacity to produce the quantity of seedlings required to address the scope of local deforestation at this time. While the success of nurseries has been variable, Sauri (Kenya) and Ruhiira (Uganda) have each produced over one million tree seedlings, and Tiby (Mali) has produced about 300,000. Sites are also focusing on diversifying the types of trees they grow.

In sites that still have significant tree cover, such as Bonsaaso (Ghana), Ikaram (Nigeria) and Mbola (Tanzania), the project has continued to focus on awareness programs to reduce tree-cutting

activities.

Integrated Soil Fertility Management Practices (ISFM)

The MV sites have focused on legume cover crops (e.g., *Crotolaria*, *Mucuna*), interplanting with grain legumes (e.g., common bean, cowpea, pigeon pea, soybean), leguminous tree fallows (e.g., *Calliandra*, *Sesbania*), and composting, all combined with mineral fertilizers. The adoption of leguminous tree fallows has been the most successful method, and in Mwandama (Malawi) and Mbola (Tanzania), these practices have reached over 50% of farmers.

Erosion Control for At-risk Crop Areas

Land rehabilitation programs, including biological and stone terracing, fodder production on slopes, and grazing control, seek to establish vegetation to stabilize the soils. Sites with severe erosion and bare soils require larger scale activities. In 2009 for example, local communities in Ruhiira (Uganda) constructed over 100 km of trenches and terraces to help prevent soil erosion. Koraro (Ethiopia) is beginning a major watershed restoration project including gabion (retaining wall) construction.

Main Challenges in 2009

- Improving soil fertility without the use of expensive chemical fertilizers is a challenge. Finding efficient, cost-effective solutions to ISFM is a priority for the MV project in 2010.

Main Priorities for 2010

- Focus on ISFM in all clusters, including legume cover crops, interplanting with grain legumes, leguminous tree fallows, and composting, all combined with mineral fertilizers.
- Increase erosion control through terracing (biological or stones) in sites with slopes of 30% grade or more. Expand to include land rehabilitation through promotion of vegetative cover. Sites such as Ruhiira with significant areas on steep slopes and bare soils need to make this a top priority.
- Plan and increase the types and number of tree seedlings distributed and planted in the communities. Goal is a minimum of 200,000 per village of 5,000.
- Conduct participatory environmental assessment and plans for community management of common land in all sites, including plans for natural resource management (e.g., land rehabilitation, conservation areas, tree planting, erosion control, removal of invasive species, etc.).
- Continue the diversification of farming systems, which promotes provisioning services and resilience.

8. Gender Equality

The goal of the MV project's gender sector is to integrate gender equality into all MV project activities and initiatives. Key achievements in the gender equality sector in 2009 include the following.

Gender Mainstreaming

A new partnership with UNIFEM is helping to boost gender mainstreaming across all sectors in the MVs. In 2009, UNIFEM and the MDG Center in Bamako (Mali) conducted a gender needs assessment in the MV of Toya (Mali), the first in what will be a series of studies on gender-related needs in the MVs. Most of the projects and interventions recommended by the assessment will be implemented in 2010 once funding is secured. The partnership with UNIFEM is expanding, and in 2010 similar gender needs assessments will be conducted in the MVs of Tiby (Mali) and Mbola (Tanzania).

Women's Participation

Women are dynamically involved in the MV project at all levels, as owners of land and active agricultural producers, as heads of families, and as council members and officials. Women are active members of all program committees and hold a number of key positions. The MV gender sector conducts leadership training for women who hold leadership positions in the community (e.g., MV committee members).

Women's participation in community decision-making processes is essential not only because it is a basic human right, but also because women are the main collectors of water and caretakers of household hygiene and family health. The involvement of women in key projects such as the water program and the business development sector seems to be greatly beneficial to the continuation and success of these projects. Moreover, participation of this nature is empowering for women, as their contribution to development is highly valued and well recognized among themselves as well as by their male counterparts.



Women elected to local office in Potou (Senegal).

In addition, many project components are designed directly or indirectly to reduce the excessive workload on women in order to enable them to contribute more fully to development activities. For example, the new fuel-efficient cookstoves in Ruhiira (Uganda) have greatly reduced the amount of fuel wood women need to collect for cooking.

Gender Awareness Training

Providing training to MV project staff on gender awareness and integrating gender into other sectors is part of the gender sector's work. In Ruhiira (Uganda), for example, gender awareness meetings accompanied by films on gender issues were conducted in three parishes in 2009. As another example, a Stakeholders Training Workshop on Empowerment of Adolescent Girls was held in Koraro (Ethiopia) and was attended by 28 participants including Woreda and Tabia village governmental offices, associations, committees and clubs. Four district officers in Hawzien District (for women's affairs, youth/sport affairs, education office and labor/social affairs) shared their experiences on the empowerment of girls.

In another example, each school in Sauri (Kenya) has two teachers trained in basic guidance counseling to help boys and girls deal with non-academic matters that might affect their school attendance or performance.

Girls in School

Increasing girls' enrollment and attendance in school is a major focus of the gender sector. The MV project supports girls in schools in a number of ways. For example, in order to help minimize absenteeism, programs to supply adolescent girls with sanitary pads have been successful including in Koraro (Ethiopia) reaching approximately 1,300 girls, Sauri (Kenya) reaching about 2,500 girls, and Mbola (Tanzania) reaching about 1,000 girls. The programs in Koraro and Sauri were supported by the Nike Foundation in 2009 as part of a multi-year commitment. Procter & Gamble has also recently partnered with the MV project to provide sanitary pads in Sauri as well as provide education on life skills and sexual and reproductive health. Installing latrines with separate stances for girls and boys is also beneficial. In Ruhira in 2009 such latrines were constructed in three schools and two public locations. Girls' empowerment clubs were active in Koraro and Sauri in 25 schools.

Parents also play a role in keeping girls in school, and the gender sector carries out intensive community campaigns to make parents aware of the value of girls' education. In 2009 for example, nearly 300 parents in Ruhira (Uganda) whose daughters completed P.7 (parallel to seventh grade) were rewarded as an incentive for others to keep their daughters in school to complete the primary school cycle.

Facilitating girls' access to secondary education is another important focus. In some MVs, scholarship opportunities exist for girls who want to continue their education but cannot afford the required school fees. In Ruhira, for example, a secondary school scholarship program is supporting 10 girls, including two added in 2009. Sauri is also supporting a number of girls in secondary school. This is far short of the number of girls eligible for secondary school in the clusters, however, and initiatives to address this shortfall will be announced in 2010.

Women's Business Cooperatives

Opportunities for women are a major focus for business development initiatives in the MVs. By providing women farmers with agricultural inputs (first on a subsidy basis, then gradually transitioning to credit), household food production needs can not only be met (thereby improving food security), but often can be surpassed, producing surpluses and diversified crops that can be sold for profit. As farming activities expand and more market crops and/or livestock are produced and sold, women benefit economically and socially by gaining more ownership of valued assets, and over time are able to reduce their dependence on resources owned or controlled by men. Examples of successful women's business cooperatives include the women's gardens in Mali (including the Sama garden) and the poultry cooperative in Ethiopia. These cooperatives are made possible in some sites through partnerships with financial institutions, such as the partnership in Malawi with Opportunity International Bank and Sauri's linkage with Equity Bank in Kenya.

Main Challenges in 2009

- To fully implement gender equality priorities and ensure thorough integration of gender interests in MV project activities, the gender equality sector requires designated staff members. Fulfilling this need will require further financial support, and presents a strong funding opportunity for donors interested in this area.

Main Priorities for 2010

- Mobilize additional resources and funding for gender activities and for gender facilitators/coordinators at all levels (i.e., site level and regional office).
- Focus on secondary education for girls, such as through scholarship funds at MV level.
- Continue capacity building for MV project staff, such as training on gender mainstreaming.
- Carry out impact assessment to generate quantifiable data/evidence of impact of sanitary pad projects in Koraro (Ethiopia), Sauri (Kenya) and Mbola (Tanzania).

9. Community Development and Local Governance

Priorities for 2009 in the community development and local governance sector were to provide sessions of training to MV project staff in participatory planning, group facilitation skills and methods, and monitoring and evaluation. The project also worked to continue to refurbish or construct community center buildings and establish community center services. Further priorities were to conduct organizational and institutional assessments and strengthen the performance of local institutions, strengthen participatory planning and monitoring and evaluation systems, and conduct assessments, design and launch community-based information systems.

Capacity Building for Participation, Facilitation, Communication and Monitoring

In 2009, 482 MV project staff members—including project coordinators, field staff, and in some sites community health workers—in seven MV project sites received training in various community development approaches. Training topics included Participatory Rural Appraisal (PRA), facilitation methods, participatory approaches and understanding rural institutions. A total of 65 staff members in two MV project sites—Mbola (Tanzania) and Ruhira (Uganda)—received training in participatory monitoring and evaluation methods. Three sites—Sauri (Kenya), Pampaida (Nigeria) and Mbola (Tanzania)—have attained the five-year goal of providing training in community approaches to 100% of MV project site staff. In Ruhira, 93% of staff members have met this requirement.

Capacity Building for Local Institutions to Achieve the MDGs

A number of different organizational and institutional assessments were carried out in the MVs in 2009 as reported from six sites: Koraro (Ethiopia), Sauri (Kenya), Tiby (Mali), Ikaram (Nigeria), Pampaida (Nigeria) and Mbola (Tanzania). These assessments helped the MV project to deepen its understanding of the capacity needs of more than 40 local institutions. A general institutional assessment of seven locations within the MV project area in Ikaram was conducted using PRA methods, while rapid assessments of the Millennium Steering Committee and Health and Education Committees were conducted in Koraro.

In 2009, this sector reported on more than 25 different programs to address the abilities of local institutions to engage, assess, plan, manage, monitor and evaluate programs and initiatives. In total, in 2009 nearly 5,600 local leaders participated in training to improve functional capacities. Examples include programs to improve leadership, resource mobilization, organizational management, participatory methods, and monitoring and evaluation (M&E). These activities were primarily geared toward decentralized village units, village leaders, sector groups, community-based organizations, women's and civic associations, youth groups, sub-district governments and district governments. For example, in Mwandama (Malawi), 37 executive committee members and 82 village development

committee members took part in training on participatory M&E and the creation of M&E systems for local level development initiatives. The Ruhira (Uganda) MV reported that 75% of the activities to be performed by community members in 2009 as per the Community Actions Plans were implemented as planned, demonstrating high institutional effectiveness.

Strengthening Government Ownership of MV Activities through Joint Planning

New government-inclusive advisory boards or steering committees supporting the MV project were established at the local or national levels in 2009 in five sites. In Potou (Senegal), the MV project supported creation of the 2010-15 MDG-based local development plans with the local government. In Sauri (Kenya), the district department head's review of community- and project-prioritized activities for resource allocation led to the contribution of more than US\$20,000 toward construction of a community resource center and a market service center in 2009. In Ruhira (Uganda), from February to May 2009, the MV project together with the Sub-county Technical Planning Committees, held joint planning activities with communities that led to Sub-county Development Plans. Bonaaso (Ghana) and Mwandama (Malawi) also established such boards or committees.

MV sites reported that investments in regular feedback and review meetings were beneficial to continuously building stakeholder engagement, ownership and accountability. Such quarterly meetings in Mayange (Rwanda) were used to review performance of community action plans with sub-district government staff and village steering groups, and to develop performance contracts for important MDG benchmarks.

Community-Based Information Systems and Community Centers

Adult literacy programs in three sites, communication activities (e.g., radio stations, village meetings) and the creation of new communication channels (e.g., notice boards, community centers, participatory M&E systems) are some of the activities reported for this sub-sector in 2009. Twelve community centers were refurbished or constructed in 2009 in as many MV sites. Nine community centers are actively providing services that have been strengthened or supported by the MV project since the project commenced.

One example of a community-initiated communication activity is in Sauri (Kenya) where the community organized exhibitions on MDG achievements as a way of defining their successes and determining where they have gaps and how to deal with them. By bringing several villages within the cluster together, the communities were able to learn from each other.

In addition, the Pampaida (Nigeria) MV site reported that they created and strengthened the management body for a community center, while multiple sites reported plans to strengthen management bodies in 2010.

Main Challenges in 2009

- In order to meet the challenge of effectively scaling up and integrating MDG-based planning into local government planning, many sites have been working side-by-side with local governments during the planning process or establishing MDG advisory committees.

Main Priorities for 2010

- Support each sector in solidifying systems at the community level while ensuring that the science and community-based principles of the project are embedded in each of the systems.

- Continue developing strong and independent economic, social and political development organizations at the village level for collective action to achieve and sustain the MDGs.
- Develop harmonization and transition plans for government-, project- and village-level institutions.
- Develop community-based information systems that support MDG-based development information needs at the village level (including strengthening participatory M&E, completing community centers and management plans and completing community radio programming and management).
- Develop public-private partnership(s) for each MV cluster for strengthening public, private or mixed institutions.
- Ensure effective decentralized structures for implementation and coordination of MDG strategies.
- Ensure the MV project is anchored within local governance and other district-level institutions.

IV. Site Reviews

1. Koraro (Ethiopia)

Context

The Millennium Villages cluster of Koraro is located in the Tigray region of northern Ethiopia, a semi-arid area with a short rainy season that lasts from the end of June to the beginning of September. Its 11 Millennium Villages (total population³ approximately 64,400 people) span an area of several hundred square kilometers of the highland mixed agro-ecological zone. The main planting season takes place in June for November harvest, and subsistence farmers rely on maize, sorghum, teff and millet as staple crops.



A girls' empowerment club meeting in Koraro.

Koraro is making substantial progress through the MV project, despite facing many overlapping development challenges. The Koraro cluster is located in one of the poorest regions in all of Ethiopia, owing to a confluence of geographic, political, economic and environmental factors. With poor roads and limited communication technology, Koraro is also one of the most remote and isolated sites. Inadequate health services and a shortage of income-generating opportunities compound these challenges. Since the MV project began in Koraro in February 2005, village residents have made significant advances in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.

Agriculture

Supplying inputs such as fertilizer, improved crop varieties, vegetable seeds, high-value fruit seedlings and water saving technologies continue to be priorities in Koraro. In 2009, unlike in previous years, the project provided inputs to farmers on a credit system instead of by subsidy. A total of 460 tons of DAP and urea fertilizers were distributed to more than 5,800 farming households throughout Koraro in 2009. Post-harvest repayment is ongoing, and 48% of the supplied fertilizer loan was repaid to the MV project as of the end of 2009.

In addition, 2.1 tons of potato seeds, 355 fruit seedlings and three kg of vegetable seeds were supplied to beneficiaries. To promote aquaculture in the area, 3,000 fish were supplied to two small reservoirs or "micro dams" during the reporting period. In an attempt to integrate and expand the use of irrigation systems in Koraro's predominantly rain-fed farming system, the project supplied treadle pumps to 67 farming households and single line drip systems to 21 households in 2009. Finally, the project offered a number of different capacity building training sessions to improve the agricultural skills of 120 farmers, 20 development agents and six district agricultural experts.

³ Population figures are as reported in Q1 2009.

Business Development

In 2009, the main business development initiatives included the following.

Honey

The honey project launched in the Koraro cluster in 2009 with a goal of introducing 3,000 hives and colonies. The original project plan was for 1,500 households to be given an initial two hives, with the number increasing over the next five years until each household had an estimated 8-10 hives. The honey produced would be sold and profits would be split between reinvestment and dividends to the honey cooperative. The loans given to purchase the hives would be paid back over five years.



Beehives along a hillside in Koraro.

Due to the late rains and the fact that the colonies were not readily available in 2009, only 450 hives and colonies were distributed to the farmers, including 2,500 beehives, 9,000 kg of bees wax, 10 small and one large weighing machine, 1,000 queen excluders and other accessories.

The project's goal in the coming year is to expand the purchase of the colonies to meet the 3,000 mark and to begin the first harvest and sales.



"Pot drip" irrigation is helping farmers in Koraro to successfully grow fruit trees.

"Pot Drip" Irrigation

To try and manage water scarcity with maximum efficiency, a "pot drip" irrigation system was developed for irrigating fruit trees. The pot drip system involves drilling fine holes into the sides of an earthenware pot and burying the pot right beside the tree under cultivation. Only the neck of the pot remains exposed above the level of the soil. Once the pot is filled with water it is covered to minimize evaporation losses. All the water is consumed through capillary action below the surface of the ground. The project has found that the pot needs filling only on a weekly basis, thereby greatly saving on labor and the amount of water used to irrigate

trees. Hundreds of fruit trees have now been planted in the cluster using this technology, with approximately 2-3 trees planted per household. These fruit trees provide both a source of income and nutrition to the households.

Furthermore, manufacturing the pots has potential for launching a cottage industry that could provide jobs and incomes for the women in the cluster.

Sericulture (Silk Farming)

One of the newer business opportunities that the project has explored in the Koraro cluster is sericulture, or silk farming. In a study conducted by the MV project, it was found that sericulture would do well in the region if 2-3 ha of mulberry trees on which the silk worms can feed can be successfully grown. This opportunity is ideally suited to non-land-owning youth and women. Over the next few months a more detailed business plan will be developed around this idea and then submitted for funding if the plan is feasible

Education

To achieve MDG 1 on universal primary education, the Koraro MV community is working with the government and other partners in its education sector to enhance quality and equality in primary schools throughout the Koraro cluster. As a result of these efforts, parents and community leaders are becoming more engaged in school management through active participation and involvement in primary school education.

The quality of the primary schools' physical environment and facilities has improved notably through the rehabilitation of old classrooms, construction of new ones, provision of new furniture and the supply of instructional materials. Access to and survival in school for students from disadvantaged circumstances has increased greatly, especially among girls. An increase in the number of boys and girls (particularly girls) attending and completing primary school is due to building a stronger and more mutually supportive relationship between the school and community.

The school meals program has been largely supported by the community over the past three years serving approximately 18,000 students across all 22 schools in Koraro. In 2009, as a result of the severe drought, farmers were unable to make their in-kind contributions and hence the school meals program has not yet started cluster-wide in this academic year (September 2008 – June 2009). As a contingency measure, the World Food Program is supporting the meals program in one school, and the MV project is supporting two more. The project is actively exploring additional partnerships to support the school meals program when the community is unable to fulfill the need independently.

Health

Major accomplishments in this sector during 2009 include hiring the necessary staff for emergency obstetric cases within the cluster, making x-ray services available in the referral health facility, and receiving two ambulances via contributions from the MV project and district administration. Zinc and essential drugs were supplied to all health facilities in Koraro. Also progressing well is the nutrition supplementation program for village residents on anti-retroviral (ARV) treatment, and the income-generating poultry-raising program established to help people living with HIV/AIDS (PLWHA).



Community health workers (CHWs) prepare for a day of house-to-house visits in the villages of Koraro.

Training in key activities related to maternal and child health and nutrition, HIV prevention and malaria prevention and control, including the use of rapid diagnostic tests (RDTs), was provided to six health workers, 23 health extension workers and 245 CHWs in 2009. Training was also provided to 308 community-based nutrition facilitators from all villages, and quarterly "Health Days" were conducted in the cluster. Health extension workers (HEWs) assisted the decentralization to the

village level of the management of severe acute malnutrition using Plumpy'nut (a therapeutic food in paste form intended for severely malnourished patients). CHWs and HEWs made 46,447 household visits in the cluster bringing the average to nearly four visits per household per year.

School health check-ups were administered to all primary school students in the cluster. Treatments were provided when possible and an action plan was prepared to address health issues.

Infrastructure and Energy

To alleviate accessibility gaps, 9.8 km of seasonal road was constructed in Koraro leading to the Adi-Gobye sub-village, 3.5 km was built connecting Selam village to Hawzien-Megab Road and 600 m of road was built to access the Koraro tree nursery. An agreement with the Electric Power Authority was finalized and will provide for grid extension to three more village institutions including the farmers training center and many schools. Supply and installation of solar panels was completed in 10 schools, three farmers training centers and one community institution. More than 75% of construction was completed on 15 school latrines (with separate facilities for girls and boys), 12 classrooms and 12 school compound fences, and renovations of 180 classrooms were also finished.

Intersecting with the health sector, construction of residence rooms and kitchens for HEWs was completed in two villages, 90% of similar construction work was completed in four villages and 60% in four other villages. Construction of delivery rooms, dry latrines, placenta pits and incinerators at six health posts was completed, while approximately 85% of work was completed on two new health posts in two villages and shaded waiting areas in 11 villages. Construction of the poultry building for the PLWHA project is 50% complete.

Environmental rehabilitation and agricultural water resource development were also among the priority infrastructure activities in 2009 with activities including the following.

- An embankment storage dam with 132,000 cubic meter capacity and an irrigation potential of 10 ha, along with an associated 1,035 m long masonry canal.
- A 1,565 m long spate canal and nine associated spate flow division boxes.
- A runoff conservation system comprised of 60 percolation ponds.⁴
- A 1.2 km long water filtration trench.
- A 1,220 cubic meter gabion/runoff diversion structure and 1,600 m³ silt trap gabion (i.e., retaining wall) structure.
- A gully rehabilitation structure with five gabion checks and 1,200 m³ gabion retaining walls.
- Ongoing construction of 34 dug wells for irrigation each with a nine-meter diameter and maximum depth of 12 m.

Positive impacts from these systems are already apparent, including the presence of flowing water in a streambed normally empty in the dry season, and ample groundwater in the eight government-

⁴ Refers to a pond (usually built, not natural) designed to allow rainwater and runoff to percolate slowly into the ground. The pond acts as a holding tank while gravity allows the water to percolate or seep through the soil or other unconsolidated medium into the local water table.

constructed household dug wells, all of which are situated downstream from the water filtration systems. Moreover, the filtration system has significantly controlled sheet and rill erosion in farmlands.

Water and Sanitation

Access to water in Koraro is estimated to have doubled since 2006 (prior to MV project interventions) when less than half of community members had access to safe drinking water. This is due to the additional construction in 2009 of 19 shallow boreholes and one hand-dug well, and the installation of four spring pipelines with their seven distribution points and two reservoirs. Excavation for 10 more hand-dug wells continues, and as of the end of 2009, 75% of the work was completed on these. Non-functional water points were assessed throughout the Koraro cluster, resulting in the rehabilitation or maintenance of three shallow boreholes and four hand-dug wells. To date, apart from the ongoing 10 hand-dug wells, the project has constructed 24 shallow boreholes and 39 hand-dug wells in Koraro, and 14 spring water schemes have been developed.



A model house for the sanitation program in Koraro. Pictured here (left to right) are a hen house, hand-washing station, and ventilated improved pit latrine.

Improved sanitation in the community has occurred by pit latrines and proper solid waste disposal, as well as through the increased use of smokeless and energy efficient stoves. Concrete cover slabs for 1,600 household latrines were built and distributed. In addition, the project recorded increased evidence of the construction of kitchens and mangers (i.e., animal feeding sites) separate from living quarters, as well as decreased evidence of standing water. These improvements were observed in 98% of the households of the Koraro cluster.

The sanitation improvement work started in 2008 mainly focused on training model households, CHWs and the community in all villages of Koraro. The actual construction of sanitation facilities at scale started in January 2009, and 11,717 household latrines were constructed through September 2009. The assessment of the status and utilization of latrines recorded the following results:

- Nearly all latrines were functional.
- Nearly all latrines had hand-washing facilities with soak pits, of which more than 80% were found to be functional.
- Nearly all families reported that the whole family uses the latrines.
- Construction of all the latrines was found in good condition, except for some that were damaged during the rainy season.

Gender Equality and Community Development

In 2009, the project provided technical support to strengthen different community committees such as the MV project village steering committee, the village health committee, the parent-teacher association, the vehicle service committee, the community mill service committee, the water and

sanitation (WATSAN) committee and various school- and health-based clubs and Independent Growers Association (IGA) cooperatives. The major project accomplishments during 2009 include rapid assessment of capacity and training needs, facilitating the start-up of 10 different micro-business cooperatives of women and 10th grade drop-out girls, establishing and training 35 WATSAN committees, strengthening 11 farmers training cooperatives through the provision of furniture such as benches (110), supporting vulnerable members of the community including people with disabilities (33) through providing 13 Singer sewing machines and providing training in their operation, providing advocacy and training on women's empowerment (28), supporting girls' sexual and reproductive health and rights, and joint monitoring and evaluation with district offices and MV project sector departments.

Scaling Up

The Government of Ethiopia is currently exploring how to incorporate the Millennium Village approach and lessons learned into national poverty reduction and MDG-based strategies and how to possibly scale up the Millennium Villages to other parts of the country. Further information is available in the section below titled "Scaling Up."

Main Challenges in 2009

- Designs and plans have been developed for several large-scale irrigation systems linked to the micro-dams built in the cluster during the first years of the project. However delays in the planning process have resulted in setbacks with linking to potential partners and improving agriculture for business development initiatives. Project designs will be submitted in early 2010 and a resolution is expected in mid-2010.

Main Priorities for 2010

- Finalize infrastructure projects including schools, latrines and health centers.
- Focus on the promotion of small-scale irrigation projects.
- Complete the Megab-Koraro Road.
- Finalize the electricity grid extension.
- Continue pursuing business development opportunities including honey production, pot drip irrigation and silkworm farming.

2. Bonsaaso (Ghana)

Context

The Bonsaaso (Ghana) cluster is located in a humid tropical zone approximately 70 km (43 miles) southwest of Kumasi, in the Ashanti region of Ghana. Its six Millennium Villages (total population approximately 35,000 people) are scattered throughout the cluster and are separated from one another by thick rainforest and difficult topography.

Traditionally, most farmers rely on small-scale market crop farming of cocoa and palm oil, rather than food crops for consumption. The main rain-fed crop planting takes place in March for the July harvest, and the off-season planting takes place in September for November harvest.

Bonsaaso is making substantial progress through the MV project, despite facing many overlapping development challenges. Inadequate schools, under-equipped health clinics and lack of access to clean water are all challenges the MV project is directly addressing. In addition, transporting goods in and out of the isolated communities can be arduous due to travel on dirt roads that were carved by gold mining and lumber companies years ago and have not been properly maintained. This makes it difficult for farmers to sell their goods at market. Since the MV project began in Bonsaaso in 2006, however, village residents have made great strides in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.

Agriculture

The year 2009 saw an improvement in farmers' access to high quality seeds, cocoa seedlings, fertilizers and fungicides. Under an input credit scheme, about 6.5 tons (1,200 bags) of fertilizer was supplied to 600 farming households. Additionally 100,000 early-bearing and high-yielding hybrid cocoa seedlings were made available to 2,000 households, while 54 households received 3,400 citrus tree seedlings.

In 2009, the site recorded strong or improved productivity of both food and cash crops. For instance, cocoa production increased by 33% in 2009 compared to 2008, while maize production remained stable at more than double pre-MV project levels. Consequently, there was an increase in household incomes and enhanced food security at the household level.

The Bonsaaso site team continued to deliver extension services through farmer field schools in 2009. About 1,500 farmers (825 men and 705 women) benefited from various training programs, resulting in increased adoption of scientific methods of farming. On post-harvest management, the team completed and put to use a 70-ton-capacity maize storage facility.



Palm “fresh fruit bunches” ready for transport to the palm oil mill from Bonsaaso.

Business Development

In 2009, the main business development initiatives included the following.

Palm Oil

There are currently 1,200 ha under palm oil cultivation by approximately 800 farming households. Over an eight-month period in 2009, more than 250 t (metric tons)⁵ of palm fresh fruit bunches (FFBs) were collected and delivered to Juaben Oil Mills, generating about US\$15,000 in additional income for oil palm farmers in Bonsaaso. The project is working to expand the collection system, enabling the transport of 50 t of FFBs per week to Juaben.

In addition, there are plans to bring small oil processing mills to the cluster through a grant from the World Food Program (WFP) in order to add value, create jobs and further raise incomes. This will provide income for two women's group in Bonsaaso. Procurement processes are going well and it is expected that the mills will be installed in 2010.

The MV project has also been working closely with a group of investors to establish a state-of-the-art processing facility in Kumasi, the urban center near the cluster. The planned facility will have an annual capacity to process 60,000 t of palm fruit and produce 12,000 t of high quality, certified palm oil. This plant will give farmers access to a secure and reliable market for their fresh fruit bunches. In addition, the smallholder farmers will share in the final profits of the mill. The current estimates are that 25-30% of the profits would be returned back to the farmers with the remainder going back to the investors. A large portion of the projected investment for this project has already been identified, and the goal is to close this investment round by the end of 2010.

Cocoa

Cocoa is the main cash crop in the cluster with about 11,100 ha under cocoa cultivation and about 3,700 farming households producing it. While the market for cocoa is secure—the Ghana Cocoa Board purchases all cocoa produced in the country—the actual productivity levels of the smallholder farms in the cluster are quite low due to poor maintenance techniques and trees that are past their productive peak.

Concretely, over two million hybrid cocoa seedlings (HYH seedlings) have been nursed and transplanted by cocoa farmers in Bonsaaso since 2007. More than 3,000 ha under cocoa cultivation have been rehabilitated. Increases in production levels are expected to start appearing in 2011. The goal of this business development initiative is to increase the productivity and therefore incomes of cocoa producers.



Cocoa pods growing in Bonsaaso.

In 2009, the MV project continued running the 20 Farmer Field Schools (FFSs) to improve management techniques (e.g., shade management, pruning, disease management and

⁵ Throughout this report, units of weight in metric tons are followed by “t,” as kilometers are “km.”

harvesting). These training sessions have had a significant impact on production levels, which have increased by 53% in the 2007/08 season compared with 2006/07. (Statistics for the 2008/09 harvest season are currently being calculated.) These productivity increases have had a direct impact on farmers' incomes generating about US\$2.3 million at farm gate prices in additional income for the 3,700 cocoa producers since the start of the project.

The project is in talks with potential investors to see if a fair trade premium can be paid for the cocoa and if the cocoa grown in the MVs can be converted into a branded product, thereby drawing a premium price.

Maize

Due to improved agricultural inputs and techniques, adequate rainfall and increased area under cultivation, maize harvests continue to perform well, with average yields more than double pre-intervention levels. As a result, food security in Bonsaaso has improved and a surplus of maize is being generated each cropping season. It is estimated that a marketable surplus of 450 t of maize was generated in 2009.

The MV project has identified two potential buyers for surplus maize: Agri Serv Ltd. and the World Food Program (WFP). Agri Serv Ltd. is a local company that is interested in purchasing the yellow maize to process into animal feed, in as much quantity as farmers can supply.

The WFP, through their new program called Purchase for Progress (P4P), is interested in buying grain to be used for relief and emergency operations in Africa. Despite the fact that P4P has not officially started in Ghana, the WFP has agreed to purchase at least 50 t of white maize from farmers in the Bonsaaso cluster in early 2010. Quantities will increase as structures are put in place and the relationship is developed. WFP will pay a market price based on the market price for grain in Kumasi in addition to covering expenses associated with grading, bagging and transport from Amansie West (where the cluster is located) to their central warehouses in Tamale in northern Ghana.

Additional Skills Training

In collaboration with the Rural Enterprises Project (REP), the MV project provided training to 15 groups (in 13 communities) in employable skills and income generating activities including soap making, batik and tie-dying, bee keeping, raising snails, raising grasscutters (small rodent), mushroom cultivation and improved palm oil extraction techniques. A total of 433 village residents (166 women and 267 men) participated in the various community-based training programs.

Credit and Microfinance

As part of the partnership between Opportunity International (OI) and the MV project to extend microfinance services to the project sites, in June 2009 OI secured financial resources to start a rural lending program in Bonsaaso. Delays in transfer of funds and personnel changes have pushed the start date of operations to the second quarter of 2010, at which time a mobile banking unit will be available to the community and OI staff will start to identify farmer groups that could benefit from microfinance services.

Education

The Bonsaaso site team continued to work with local parent-teacher associations (PTAs), to increase school enrollment and improve attendance at school. In 2009, Bonsaaso expanded the implementation of the community-based school meals programs to cover all 22 schools, reaching near universal coverage in the cluster. The school meals program continues to contribute to high rates of school enrollment.

The MV project also continued to work with CARE International through the REGAL (Responsibility for Girls Active Learning) Project. CARE is supporting girls' education through community engagement and training, providing latrines, and organizing recreational activities to keep girls in school. In 2009, two more schools joined the REGAL Project bringing the total number of participating primary schools in the cluster to 14.

Additionally, 12 more classrooms were completed in 2009, bringing the total to 42 out of the 48 planned. The project also completed two 6-unit teachers' quarters in two communities. These flats have since been occupied by teachers, and the attrition rate of teachers has decreased.



Preparing school meals in Bonsaaso.

Health

In 2009, the team made a successful transition from the free health care policy to the national health insurance system in order to ensure long-term sustainability of health initiatives. The health sector launched a major campaign to enroll village residents in the National Health Insurance System, and thus far about 85% of cluster residents have registered.

Also in 2009, the MV team commenced the Pilot Project on Post-partum Hemorrhage with funding from the MacArthur Foundation to the Earth Institute at Columbia University. The site also promoted long-term family planning methods and started offering Jadelle, an implanted long-term contraceptive method.

The site team completed the clinic at Assamang, and 28 community health workers (CHWs) brought health services to individual households throughout the cluster. The project continued to provide support to about 44 HIV/AIDS patients to access ARV treatment and other services. Nearly 8,000 patients were treated for malaria and more than 1,100 children were immunized for measles.

Infrastructure

The Bonsaaso team continued to engage the central government and partner agencies for further rehabilitation of roads in the cluster area. To this end, a total of 57 km of road was rehabilitated, and 96 concrete culverts were constructed on these roads.

On energy, the government is working to extend the electricity grid in two communities. The site team is following up on a request to the Ministry of Energy for grid extension to key locations in the cluster where clinics are located. As a complementary measure, in 2009 the site team procured solar panels and accessories for installation in clinics and other key facilities in off-grid locations.

The ICT platform made possible by Ericsson and Zain was launched in 2009. This has greatly improved cell phone connectivity in the villages, and the Internet is now available at one community learning center for use by village residents and students. With improved telephone connectivity, all health workers are able to place toll-free calls to each other and the community ambulance, and emergency response has improved markedly since. The site is getting ready to implement a telemedicine project that will involve the use of e-health or m-health⁶ technologies.

Water and Sanitation

In 2009, the site worked with consultants to design piped water systems in six communities. So far, the borehole drilling has been completed, and the report of detailed designs has been received for study and approval. The contracting process was initiated in early 2010.

In addition, seven health clinics were earmarked for boreholes to be drilled and mechanized, to ensure regular supply of water. So far, sites have been selected and three boreholes drilled.

Though rainfall is plentiful, it is seasonal. As a result, Bonsaaso is promoting irrigation for dry season vegetable gardening in selected communities. The evaluation report for the selection of a consultant to design and supervise the installation of irrigation facilities/equipment is undergoing review.

The site continued to promote household latrines in a number of communities. Altogether, 94 household latrines were constructed in 2009, and two ventilated improved pit (VIP) latrines built for a clinic. In addition, the site is helping communities construct communal pit latrines, and is concentrating on providing latrines with separate facilities for boys and girls as well as safer water points in schools.

Environment

In 2009, a series of training programs were organized to build local capacity in the prevention and management of erosion. Through a partnership with the Forestry Commission of Ghana, the MV project conducted a flora and fauna survey of the major forest reserve. The objective was to assess the state of the reserve in order to plan for the appropriate management interventions. The next step is to establish community-based forest management committees to oversee the sustainable use and management of forest resources.

Community Development and Local Governance

As part of the process of building community capacity, the team provided training to 13 unit committees in areas such as communication, group dynamics, fund mobilization and methods of leadership. Under the partnership with the Sustainable Rural Livelihood Project (SRLP)/UNDP, a workshop on Citizen-Government Engagement was organized for 35 community representatives from various parts of the cluster. The objective was to improve their lobbying and advocacy skills, and the workshop successfully provided community representatives with useful tools for demanding accountability from government officials in support of community development.

In addition, a workshop was organized on women's empowerment and child rights in collaboration with the Domestic Violence and Victim Support Unit of the Ghana Police Service, staff of the National Commission on Civic Education (NCCE), and the Commission on Human Rights and Administrative Justice (CHRAJ).

⁶ Electronic- or mobile-health.

Scaling Up

In October 2009, the government launched an advisory board for the MV project to support its implementation and scale-up. The board is specifically focused on expanding the Millennium Village approach to the district-level in Ashanti West, where the MV of Bonsaaso is located, to reach approximately four million people. Further information is available in Section V, “Scaling Up,” of this report.

Main Challenges in 2009

- The positive impact that the schools meals program is having on attendance is challenged by infrastructure inadequacies, especially in the provision of additional classrooms and teachers to meet ever-increasing school enrollment. Communities are encouraged to contribute the labor needed to construct additional classrooms.
- In order to address the challenge of teacher retention, the project is working with the National Youth Employment Program to post appointments in the cluster.

Main Priorities for 2010

- Transport 13 containers of water pipe equipment donated by JM Eagle from the major coastal port of Tema to the site.
- Solicit bids for the piped water scheme construction works.
- Complete the drilling of boreholes for six piped water systems.
- Complete road construction and continuing rehabilitating of roads.
- Complete electricity grid connection to the southern part of the cluster.
- Continue pursuing business development opportunities including in palm oil production, cocoa and maize, as well as microfinance.

3. Dertu (Kenya)

Context

Dertu is a stand-alone Millennium Village of approximately 6,000 people located in northeastern Kenya, approximately 140 km (87 mi) from the border with Somalia. Dertu is a pastoralist community focused on raising camels, cows, goats and sheep. Approximately half of the community is nomadic and the other half is sedentary in the town of Dertu.



Livestock and herders in Dertu.

Dertu is situated within the Ewaso Nyiro River basin 150-300m above sea level. The area is covered by sandy clay-loam soils derived from sedimentary rocks. The village is characterized by an arid climate with an average annual rainfall of about 350mm (14 in), although actual rainfall has been highly erratic in recent years. The long rainy season is April-June and the more reliable short rainy season is October-December. Before the October-December 2006 rains, the area had not received sufficient rainfall since the El Niño rains of 1997.

Dertu is making progress through the MV project, despite facing many overlapping development challenges compounded by a recent cycle of drought and flooding. The high level of poverty and great dependence on food aid reflects the recurrent droughts, unreliable and erratic rainfall and subsequent floods combined with outbreaks of diseases and isolation from markets. Malnutrition, high maternal and child mortality, illiteracy, overgrazing and poor infrastructure pose additional challenges.

Over the last year, Dertu has experienced the most severe drought in many years. The MV project responded with focused efforts to set up water storage tanks and provide needed medical supplies and livestock feed. Seven pastoral sites in the deep-hinterland areas selected with the community are benefitting from this emergency support. While the drought has caused tremendous strain in the area, thus slowing the progress of the MV project, village residents persist in gaining momentum to escape the cycle of extreme poverty.

Agriculture and Livestock

The local community primarily relies on livestock for income and food security. Besides providing meat and dairy products, goats and sheep function almost like currency in the community, and camels and cattle are like fixed assets. In light of this, during the severe drought of 2009 the project's main priority was helping the community and their livestock to survive. These efforts included purchasing an electricity generator, working with the government to drill an additional



Young man in Dertu with mobile phone.

borehole, training seven borehole operators and supplying 3,200 liters of fuel to subsidize the cost of drawing water up from the boreholes.

A disaster response committee serving pastoralists at seven identified rescue sites was formed to help provide security and distribute water, food, animal feed and necessary veterinary and medical drugs. The project supported livestock off-take⁷ from Dertu and neighboring villages in partnership with the government and VSF (Veterinarians Without Borders)-Belgium. Performance was monitored on the 2008 livestock restocking program. Livestock vaccination and treatment campaigns were promoted through community animal health workers (CAHWs) and more than 38,000 heads of livestock were treated or vaccinated. Livestock marketing was also strengthened, and the project continued to train the community in hay baling, a resource necessary during dry periods.

In addition, an early warning system was established via an automatic weather station that transmits data directly to Kenya and World Meteorological Organizations, and by supporting CAHWs and others with mobile phones to directly monitor future drought situations.

Also during the year, Dertu experienced an extremely severe dust storm, and the project, with support from the UN Food and Agriculture Organization (FAO), established a 300-meter windbreak composed of multipurpose fruit and fodder species. Over 5,000 tree seedlings were raised and the community received training on tree planting. Additionally, two community development and agriculture sector coordinators traveled to Israel for a drylands conference and a diploma training course in agricultural water management.

Business Development

In 2009, the main business development initiatives included the following.

Mobile Infrastructure

The arrival of a mobile (i.e., cell phone) infrastructure has made an enormous impact and is beginning to drive commerce in Dertu. Price discovery and the testing of markets have become common. For example, before taking their livestock to distant markets, herders can use their mobile phones to call ahead and learn the day's price, eliminating wasted time on low-yielding trips.

Solar Powered Computer Lab

Through a grant from the French Embassy in Kenya, the MV project has secured funding for solar power projects, including a computer lab at the primary boarding school. Progress in the initiation of this project has been delayed, as the room to house the computers has yet to be completed. However, a business plan has been prepared and a solar system has been designed. Once construction is complete, the project should move forward quickly.

The business plan calls for profit sharing between the school and the community, as the facility will be located on school grounds. A governance and management structure for the computer lab operations must be developed between the school and community. The cluster is expected to employ two technicians trained in basic computer skills (word processing, internet access, basic graphic design) and a team of 10 marketing agents to promote

⁷ Off-take is a program initiated by the government to buy livestock from farmers in drought-hit areas.

computer use within the community. The latter will be paid a small commission for every community member that opens a usage account.

Biogas

Discussions with the regional government authorities on biogas generation at an abattoir in the nearby city of Garissa (Kenya) have continued, though a timeline has yet to be established. There is ongoing discussion about how to structure the government's payment rates for energy sold back into the grid.

Education

In the education sector, the focus in Dertu has been to increase enrollment through providing a boarding facility for students who live far from school centers, creating mobile schools and supplementing the school meals program. There is one school in the town of Dertu that serves most of the resident children, and this school has feeder schools (i.e., an Early Childhood Development center and a mobile school). Plans are underway to establish two additional mobile schools.

In 2009, the Dertu school and its feeder schools enrolled more than 600 children, and 140 boys and girls were housed in the dormitory. In order to encourage better performance, the project further supports the school with teaching materials, Internet connectivity and mobile phones, sanitary pads



Mobile school in Dertu.

to adolescent girls and renovated classrooms and other facilities. As a result, in 2009 Dertu Primary ranked third highest in the region in the Kenya Certificate of Primary Education assessment, and all 28 students who took the standard eight examinations passed and joined secondary schools. Notably, a student from Dertu scored the highest marks on the exam in the region.

Health

The MV of Dertu is attracting neighboring populations due to better social services there, including health services. There is one health clinic in the town of Dertu, and, in 2009, a maternity ward and laboratory were constructed and equipped. In addition, the team in Dertu arranged monthly health outreach clinics in two locations to better serve the pastoralist community, and these have played a significant role in reducing routine illnesses and deaths especially from malaria, snakebites and childbirth. There are five community health workers (CHWs) who travel throughout the community serving households, and have received special training in prenatal care and midwifery skills, as very few births take place in the clinic.

The Dertu clinic received approximately 13,000 patients from throughout the region in 2009 for treatment and immunization, and more than 13,000 more benefited from nomadic mobile outreach clinics. Referrals to the permanent clinic and the Garissa Provincial General Hospital were extended to more than 50 patients. The MV team in Dertu in partnership with the Ministry of Health, provided community training on infectious diseases such as HIV/AIDS, malaria, TB, measles and H1N1 influenza while free essential drugs were continuously replenished at the dispensary.

Infrastructure and Energy

In partnership with the Government of Kenya in 2009, five km of roads were graveled, and bush

clearing was performed along more than 30 km of feeder roads necessary for accessibility to the deep hinterland. As a result of road improvements and mobile telephone networks, approximately 70% of traffic heading into northern regions of Kenya passes through the once remote Dertu.

In the energy subsector, the MDG Center in Nairobi and the Embassy of France have signed an agreement to provide “green” energy to Dertu, and feasibility studies on energy needs have been assessed. Additionally, 100 energy saving jikos (cookstoves) have been procured to support households and conserve the environment. Community “change agents” were also provided with 40 solar-powered lights to see if they are preferred over kerosene or other traditional types of lighting. Finally, ICT surveys indicated that the services of the mobile network, which is based on 80% “green” energy, is not only contributing to the economy of the village but also facilitating improvements in health, education, water, security and emergency services to Dertu and neighboring villages.

Water and Sanitation

In Dertu, both the dry seasons and rainy seasons tend to be extreme, with droughts, dried up vegetation and dry riverbeds giving way to flash floods. Due to their reliability, the boreholes and pans (i.e., shallow wells used by livestock) in Dertu attract pastoralists from around the region, putting added strain on the water systems. Therefore, all water-related activities have focused on serving the needs of not only the Dertu community, but also the surrounding communities. In 2009, the Dertu team installed or rehabilitated five water kiosks and purchased seven plastic tanks for storing water, and promoted rainwater harvesting for 10 small pans. The water systems serve approximately 400 sedentary households, 650 students and 460 pastoralist families daily. Treatment tablets for surface water purification were also distributed.



Water tower in Dertu.

Main Challenges 2009

- The sensitive security situation in Dertu is being closely monitored by the project, and policy directives have been circulated restricting travel and providing security management procedures. To manage the project during this time of restricted access, project staff can be brought to regional hubs such as the MDG Center in Nairobi for additional support when necessary.
- Replenishing livestock lost during the drought is another challenge. The government of Kenya has instituted a restocking program for pastoralists who lost livestock to the drought.

Main Priorities for 2010

- Construct a new borehole, as current one is now saline.
- Construct a community resource center.
- Construct staff quarters for midwives.
- Continue pursuing business development opportunities including biogas and mobile technology.

4. Sauri (Kenya)

Context

The Sauri cluster is the first and largest site in the MV project, with 11 Millennium Villages and a population of approximately 68,000 people. Located in the Siaya District in western Kenya, Sauri is situated approximately 40 km (25 mi) from the main city center of Kisumu. Sauri's landscape features narrow streams, rivers and wetlands meandering through rolling hills. The cluster's subsistence farmers rely on maize and beans as their staple crops. The main

planting season takes place in March for August harvest, and off-season planting takes place in October for December harvest.



Schoolchildren in Sauri.

Sauri is making substantial progress through the MV project in the face of many overlapping development challenges including a high disease burden of HIV/AIDS, malaria and tropical diseases, food insecurity, difficult roads and inadequate infrastructure, and a shortage of clean water sources. Since the MV project began in Sauri in August 2004, village residents have made significant advances in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.

Agriculture

Significant achievements were made in 2009 in improving agricultural productivity, mainly through diversification, value addition and use of improved farming techniques such as irrigation. Eleven treadle pumps and three motorized demo kits were put to use to facilitate irrigation activities, and maize production stood at 24 bags/ha (approximately three tons per hectare). More than 5,000 farmers participated in high-value agricultural enterprises to increase incomes. The rest of the farmers were introduced to credit programs for obtaining agricultural inputs, with approximately 925 farmers moving out of the grant system and taking loans, and 1,600 still receiving some level of subsidy. Farmers diversified their activities through nine different agricultural enterprises, which include more than 200 fishponds for fish farming and bee colonies for honey production and processing. In addition, 500,000 tree seedlings were raised and transplanted bringing the total to over one million in the cluster.

Business Development

In 2009, the main business development initiatives included the following.

Commercial Horticulture/Baby Corn

The climate of Sauri is ideal for the production of horticultural crops. To date, the Sauri cluster team has completed pilot studies and test plots of many potential high-value crops, including chilies, off-season tomatoes, watermelons and onions. Two key potential crops highlighted by recent discussions with Vegpro Kenya, a large Kenyan exporter, are baby corn (which has yet to be piloted) and chilies (which has been previously piloted).

Farmers are hesitant to undertake diversification without a clear understanding of the profit potential, and so Vegpro will guarantee a floor market price for the produce harvested. Vegpro Kenya will also keep complete and accurate records of the cost of all inputs to demonstrate the possible margins. According to Vegpro's estimates, a well-run farm with one hectare of baby corn can bring profits of up to KES 35,000 (about US\$455) per year. The profit potential is even greater if farmers are able to sell the waste products (husks and stalks) as quality cattle fodder. The potential within the cluster is significant, as many households manage zero-grazed cattle that require such inputs.

Fish Farming

The farmers in the Sauri cluster who were selected for the fish farming pilot phase all earned profits upon the sale of their stocks. This profit potential has not gone unnoticed by large producers and processors within the region. For example, independently of the MV project, Dominion Farms has installed a large processing plant near Kisumu that expects to process 10 million tons of tilapia annually for export to Europe. The project is working with the Business Alliance against Chronic Hunger (BAACH) to develop an action plan to ensure that cluster farmers are able to access this large and nearby market.

Given the large returns that initial fish farmers received, the project has identified locations throughout the cluster that are most appropriate for the installation of additional fishponds. The agriculture and community coordinators have also been working with the community to identify those farmers and households most appropriate for participation in an expanded program. The project is working to complete the financial analysis necessary to justify this additional investment.



Fishpond in Sauri.

Agricultural Finance

The MV project began a partnership with Equity Bank in 2009 to manage agricultural loans, and the Bank found the first year of lending to be a great learning opportunity for going forward. In these early stages of the credit-based system, it is important to note that crop yield were up in Sauri in 2009, even without the subsidy.

Education

In 2009, the number of children of school-going age in the Sauri cluster was recorded at more than 21,000 (approximately half girls and half boys), with more than 18,000 in primary school and 3,000 in Early Childhood Development classes. In addition, 69 students were on scholarship to attend secondary school. Average overall attendance in 2009 was recorded at 93%. Students in all 33 schools are benefiting from the school meals program, which is helping to support high attendance rates.

Construction of 23 classrooms was completed in six schools, and work on 28 new classrooms in 11 schools is near completion. In addition, 12 blocks (48 doors) of VIP latrines were constructed in six schools (providing separate facilities for boys and girls), bringing the total to 64 blocks (256 doors) in 22 schools. Six more blocks (24 doors) in four schools are planned for construction in 2010. Fifteen schools were newly connected to the electricity grid bringing the total number of connected schools to 21, with 10 more planned for electrification in 2010. Schools with computer resources now total 18, and at least three have Internet connectivity.

To help minimize time missed from school, approximately 2,500 adolescent girls received sanitary pads. A number of youth clubs were organized to help impart life skills to students.



Adolescent girls take part in the sanitary pads distribution program in Sauri.

More than 300 teachers from all schools benefited from training for curriculum development and teaching methodologies. Head teachers and their deputies also received training in computer use. The MV project education team and Kenya's Ministry of Education have organized to perform joint school inspections and advisory visits, and all schools receive regular visits.

Health

Ambulances were introduced to help reduce maternal deaths and address other emergency cases. Nearly all cluster residents live within five km of a health facility, and there are five health centers and a sub-district hospital in Sauri that were upgraded or constructed in 2009. In addition, almost all children in the cluster received immunizations, and treatment for intestinal worms was provided to nearly 40,000 people. A strong focus in 2009 was placed on CHWs (community health workers), and the project provided mobile phones to 108 CHWs. The malaria RDT diagnosis and treatment project was launched, as was nutrition surveillance and treatment, using the Rapid SMS ChildCount+ system. All the health facilities reported zero stock shortages of necessities.



Health clinic in Sauri.

Water and Sanitation

All households are recorded as having access to improved water sources within one km. By the end of 2009, the cluster had established 218 protected springs with work ongoing to reach all 400 possible spring points. In addition, one borehole was flushed, two shallow wells dug and three piped water systems installed (10 km) though are not fully operational yet. The MV project is coordinating with partners to complete this work in 2010, while efforts are ongoing through testing and interventions to provide safer water. Approximately 15% of households have rooftop water harvesting systems in place, and 90% of planned public VIP latrines (62 cubicles) have been completed.

Infrastructure

By the end of 2009, 86.5 km of roadwork had been completed. This work included opening new roads and upgrading others, installing numerous culverts and murraming spots where surface treatment was needed. In terms of electricity, 12 km of gridline was laid with 11 km more ongoing, and 29 institutions were wired. Four solar PV systems were installed at health facilities too distant from the gridline; the partnership between the MV project and the solar power distributor KPLC (Kenya Power and Light Company) has been very successful and this has greatly speeded the energy connectivity efforts. The government has also connected one health facility under the rural electrification program. Plans are underway to connect 500 households through an MV project-based subsidy program. Currently three schools have computers and Internet connectivity, and the remaining schools are in process. Four community resource centers and one market service center are under construction to be completed in early 2010. To promote health and energy efficiency, more than 2,100 improved household cookstoves have been constructed.

Main Challenges in 2009

- As the home of the first Millennium Village site, the Sauri cluster is now facing transition into Phase II of the project, and challenges include handing over a number of social services including health care and education programs to the local government and community. The project team will focus on discussions on this topic through various planning meetings in 2010.

Main Priorities for 2010

- Complete all construction projects including classroom blocks, kitchens and community learning resource centers.
- Launch School 2 School program.
- Improve the community management structure with greater government involvement.
- Further diversify agricultural commodities.
- Continue pursuing business development opportunities.

5. Gumulira (Malawi)

Context

Gumulira is a stand-alone Millennium Village of approximately 5,000 people located one hour west of the capital city of Lilongwe near the borders with Mozambique and Zambia. Farming is the primary occupation of at least 25% of the population. The main rain-fed planting season in Gumulira takes place in November for April harvest. The Gumulira project has a small staff, so they receive significant technical guidance from the MV project in nearby Mwandama.

Gumulira is making substantial progress through the MV project, despite facing multiple development challenges including inadequate health services, lack of access to seed, fertilizer and pesticides for agriculture, poor crop yields and a shortage of water resources. Since the MV project began in Gumulira in October 2006, village residents have made great strides in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.



Women in Gumulira are benefitting from cultivating household “sac gardens.”

Agriculture and Business Development

There are more than 1,200 farmers benefiting directly from agricultural interventions in Gumulira. In 2009, these farmers received subsidized fertilizer (50 kg NPK and 50 kg urea) from the government subsidy program and 10 kg of hybrid maize seed, a donation from Monsanto. The resulting maize production was approximately double the national average. Farmers provided more than 120 t (100 kg per farmer) of surplus to the school meals program.

In terms of irrigation, the lowlands (or *dambos*) provide a nearly continuous source of water that allows for multiple crops to be grown in a single year. While some of this land is in use, productivity tools such as treadle pumps could greatly benefit the area farmers. The project is in discussions with potential partners to support this initiative.

In 2009, business development initiatives included the following.

Goat Farming

The pass-along goat program continued in 2009. During the year, more than 120 goats (the offspring of goats raised by primary beneficiaries) were passed on to secondary beneficiaries. A 2009 survey on progress in goat production showed that the average number of goats per household has increased. Notably, one farmer now has 13 goats from the initial two, even after contributing to the pass-along program.

Irrigation

In 2009, the cluster developed a US\$600,000 project proposal to develop a 90-hectare irrigation farming plan as a means of enabling farmers to grow three cycles of crops per year. A five-meter dam would harness water from a stream that runs near the cluster. The system will also accommodate aquafarming. A build-operate-transfer model is being considered to ensure investors' money is secure. Efforts are underway to secure funding for this project.

Sac Gardening

This initiative, which allows households to grow a variety of nutritious vegetables in burlap sacks, was successful in 171 small fenced gardens in 2009. Because of the relatively low cost of \$10 to establish each garden, the project could be expanded to all households in the cluster. This activity, which focuses on women farmers, was implemented together with Tikondane CBO (community business organization), and was supported by a small grant from the World Bank.

Mushroom Cultivation

Two wooden houses have been constructed in the cluster for the cultivation of mushrooms. Early results have shown this to be agriculturally viable. In 2010, more work will be done to develop a market for the mushrooms.

Poultry Farming

The project is in the early stages of testing the commercial viability of this initiative.

Farm Training

Nine farmers received training in dairy farming while 83 (including 53 women) farmers received training in poultry production and 18 women in mushroom production. These initiatives are a means of diversifying agricultural production in the cluster, broadening the income base of the farmers and improving nutrition.

Business Training

In 2009, 16 community members received training in business plan development and three others received training in agro-dealership so that they can soon start selling agricultural inputs.

Community Truck

The community procured a village truck valued at US\$17,000 using the proceeds from the sale of some of the 121 tons of maize.

Agricultural Finance

The village is beginning to work with Opportunity International Bank of Malawi on agricultural finance programs. *(See Agriculture and Business Development sector reviews presented earlier in this report.)*

Education

Construction was completed on a junior primary school with four classrooms and two separate latrine blocks, and desks were procured. Each classroom has a teacher's office, which has helped improve the teaching and learning environment. The school was put to use after official hand over by the District Commissioner. The school was upgraded from "standard 2" to "standard 4" (i.e., now offers the equivalent of grades 1-4, beyond first and second grades).



New school built in Gumulira.

Gumulira continued to provide school meals to more than 1,300 students at Chandawe Full Primary School, and construction of one school block with two classrooms started there with partnership support from buildOn. Plans are in place to build additional school blocks and teacher housing with support from other partners in 2010.

The education sector in Gumulira introduced an Early Childhood Development (ECD) program with two centers serving 122 children in 2009. In support of this intervention, the cluster conducted a 13-day training session for 11 caregivers (10 women and 1 man) through partnership with the Mchinji District Assembly. Plans are in place to add two more ECD centers in 2010.

Health

Although Gumulira has no permanent clinic, health services were provided on an outreach basis in 2009. The MV project health team also worked closely with five government Health Surveillance Assistants (HSAs) who run community health activities. During the year, Gumulira added to its health system 17 community health volunteers who were selected by the community leadership. The Gumulira MV treated nearly 6,000 people for various ailments, including 2,345 for malaria of whom 212 were diagnosed using RDT. In addition, 317 patients were tested for HIV (of which 20 tested positive), 3,340 children had their growth monitored and more than half of the population of one-year-old children received measles immunizations. In terms of family planning, more than 700 women received injectables as the preferred method. HSAs working closely with community health volunteers supported 1,810 households. In schools, more than 1,500 students received treatment for intestinal worms and iron tablets. The project facilitated health education sessions for the school management committee, teachers and volunteers involved in the preparation of school meals.



An HIV support group in Gumulira.

In order to advance the fight against HIV/AIDS, one support group of people living with HIV/AIDS was established and subsequently received training from the MV project. In addition, plans are underway to develop a community-based TB control program by establishing a sputum collection center in partnership with the district health office.

Infrastructure and Energy

Construction of a multi-purpose community center is 80% complete, with some rooms already in use. This project is receiving significant contributions from the community including much of the bricks, sand and labor. The MV project is providing all the roofing materials, quarry stones, cement, doors and window frames. The community center building will include an office for extension workers, a meeting room, a room for youth advisory services, a grain store, input store and a general store. Some of the rooms are completed and are now in use including the grain store and a meeting/conference room. A survey on extending electricity into the cluster was completed in 2009 and a quotation was provided by ESCOM (Electricity Supply Commission of Malawi). The plan is to negotiate with partners on cost sharing to successfully implement this intervention in 2010.

Water and Sanitation

In 2009, 16 boreholes underwent routine maintenance for continuous functionality, 187 water point committee members received training and 57 of them received further training in basic borehole maintenance. 6,305 people are benefiting from the boreholes, including users who reside outside of the MV. In collaboration with PumpAid, 90 shallow wells were assessed and plans were made to upgrade these wells in 2010. To improve village sanitation in the cluster, eight village inspections were carried out and the project provided training to six extension workers for the community-led total sanitation (CLTS) program. Twelve project staff members and partners also benefited from training for the school-based personal hygiene and sanitary education (PHASE) program. The MV project provided 12 hand-washing facilities to two schools as a way of improving personal hygiene in schools.

Main Challenges in 2009

- As a single-village site, a primary challenge for Gumulira is staffing and management for the multiple initiatives and programs essential to the Millennium Villages project.
- As discussed above, the wetlands (*dambos*) initiative presents a major opportunity for diversifying agricultural production and business development in Gumulira. Finding implementing partner(s) for the *dambos* project will be a priority in 2010.

Main Priorities for 2010

- Construct two school blocks at Chandawe Full Primary School.
- Construct a health clinic to serve 6,700 people in Gumulira.
- Expand the mushroom production enterprise.
- Construct small-scale irrigation systems (*dambos*) in the wetlands.
- Build teacher housing at the Chandawe Primary School.
- Continue pursuing business development opportunities.

6. Mwandama (Malawi)

Context

The Mwandama cluster, which consists of seven Millennium Villages and approximately 35,000 people, is located in southern Malawi, near the town of Zomba and about 30 km (18 mi) from the nearest city center of Blantyre. The region is characterized by highlands and the famous Zomba plateau. Malawi has a sub-tropical climate, which is relatively dry and strongly seasonal. The warm-wet season stretches from November to April, during which 95% of the annual precipitation takes place. Annual average rainfall varies from 725mm to 2,500mm (about 28-98 in) with Lilongwe having an average of 900mm, Blantyre 1,127mm, Mzuzu 1,289mm and Zomba 1,433mm.



Goat farming as a small business in Mwandama.

The area is intensively cultivated both by smallholder farmers growing maize, pigeon peas, cassava and groundnuts (peanuts), and by the commercial estate owners growing tobacco and maize. The area typically has one long rainy season in November, followed by shorter rains in June, and harvest takes place around May.

Mwandama is making substantial progress through the MV project in the face of many overlapping development challenges. The Mwandama cluster is in the only region in the world that has seen both a rise in temperature and a drop in rainfall in recent years. These changes have led to common recurrent famines. Before the MV project, inadequate access to health services, drought and flood conditions and a lack of infrastructure at schools and clinics were some of the most significant challenges to Mwandama. Since the MV project began in Mwandama in June 2006, village residents have made significant advances in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.

Agriculture

There are approximately 7,000 farmers in Mwandama. Agricultural interventions have been effectively implemented and the community has achieved substantial gains in food production. For example, in 2009, maize yields were about three times higher than in non-intervention plots. In partnership with the national fertilizer subsidy program, the MV project provided maize seed, NPK fertilizer and urea fertilizer at a subsidized rate of 90% of the fair market price. As a result, most farmers can secure their inputs for approximately USD\$20 each season. Rather than purchasing inputs on credit, farmers receive fully subsidized inputs at the start of the season and pay back approximately 100–150 kg of maize to the school meals program at the end of the season.

Extensive training sessions for farmers were conducted on various topics including crop and livestock management, irrigation and compost manure production.

Business Development

In 2009, the main business development initiatives included the following.

Cassava

A cooperative of 40 women is running a cassava bakery that produces close to 2,000 loaves of cassava bread per day that are sold into the local market. The next step in the value chain is to have a cassava grinder to create the flour from the raw tuber and to integrate the cultivation of the crop into the supply chain. A partner has already been identified to supply two additional ovens to allow the bakery to meet the growing demand for the bread.

Irrigation

By partially diverting the water flow from small streams into channels that have been lined with plastic, farmers are able to grow crops like maize on a year round basis. There are 25 potential sites that could be tapped for this type of irrigation, thereby opening up an additional 200 ha of arable land. The project is in the process of establishing the financing to begin work on the first 5-7 locations.

In addition, 30 small-scale irrigation groups with a membership of over 1,000 households were involved in growing off-season maize and other crops under irrigation in 2009. The maize was sold as green maize and on average each irrigation group was able to earn more than \$5,000 per ha from the sales.

Grain Warehouse

By storing surplus soya, maize and beans in a large 1,500-ton warehouse, and then selling it in the off-season when prices are much higher, farmers are able to benefit from the price arbitrage. They also benefit from the fact that storage in a well-controlled, ventilated, fumigated and centrally-located facility minimizes storage losses and thereby creates higher incomes.

Poultry Farming

The project is in the early stages of testing the viability of this household-level initiative.

Agricultural Finance

The village is beginning to work with Opportunity International Bank of Malawi on agricultural finance programs. *(See Agriculture and Business Development sector reviews presented earlier in this report.)*

Education

Some of the main activities the education sector focused on in 2009 in Mwandama included capacity building initiatives for teachers, infrastructure development, providing teaching and learning materials, the school meals program, the scholarship program and school health.

Mwandama has 14 primary schools and two secondary schools. In 2009, student enrollment was recorded at more than 11,700 students (about 6,075 girls and 5,645 boys), repeating the high enrollment levels of previous project years. In addition, 47 secondary school students



Newly rehabilitated classroom in Mwandama.

received scholarships. Training in curriculum development and teaching methodology was provided to 40 teachers, and 40 teachers also received training in life skills, nutrition and HIV/AIDS. The school meals program benefited approximately 9,000 students in 12 primary schools, and four classrooms were rehabilitated.

Health

In 2009, a mobile health program was launched. A toll free number was installed at the referral Christian Health Association of Malawi (CHAM) maternity clinic. All MV project community health facilitators, nurses and health surveillance assistants received mobile phones from partner Ericsson. With help from Zain, health workers' phones can connect to each other at no charge. This has strengthened communication among health workers in case of emergencies.

Construction of the Maera Clinic began in late 2009. Throughout the year, ten integrated outreach clinics were mobilized every month. The services included family planning, growth monitoring and vaccinations for children under five, antenatal and post-natal services, malaria diagnosis and treatment, HIV/AIDS counseling and testing and TB screening. In addition to the under-five clinic, in 2009 two "catch-up" campaigns were launched for Vitamin A and treatment for intestinal worms. This led to near universal coverage of all children in the cluster. The outreach clinic services will continue to operate after the clinic is constructed in order to reach communities located too far from the facility.

In terms of immunizations, Mwandama reached near universal coverage of measles vaccinations in 2009. Five community awareness campaigns on HIV/AIDS and TB drug compliance were carried out in Mwandama. Concerning family planning, women in Malawi now have access to Jadelle (an implanted long-term contraceptive method) and it is available at the health clinic. A medical assistant and a nurse from Thondwe Health Center in Mwandama have received training for Jadelle insertion and removal.

At least seven school health visits per month were conducted in 2009 in each of the 14 schools in the cluster. A school-based personal hygiene and sanitation education (PHASE) program was also initiated in 2009. It is aimed at changing the sanitation and hygiene behavior of schoolchildren, leading them to be change agents in the community. In Mwandama, all 42 health surveillance assistants and project nurses received training in the use of zinc to treat dehydration in children under five, and mid-upper arm circumference tape to test for malnourishment. It is expected that nutritional screening by health surveillance assistants will improve in the cluster due to improved training.

Infrastructure and Energy

A five-meter long concrete bridge has been constructed to shorten the distance people have to travel to access major medical services at Thondwe Clinic. The bridge also provides a direct route to the public market where people sell their farm produce. A reinforced concrete roadbed was constructed on Maera escarpments where it has been very difficult in the past years for vehicles to pass because of its steep, slippery surface. Construction of schools and latrine blocks continued. Two school blocks and three latrine blocks at Mwandama and Dindi clusters were completed in 2009 and are in use. The other blocks at Linjidzi, Linthipe, Mwandama and Dindi are still under construction.

The construction of the Maera Dispensary began during 2009, and construction, electrification and water connectivity are expected to be complete by May 2010. Inventories were conducted on

construction of the Mwandama Dispensary and contracts have been tendered out but not awarded yet. Electricity grid extension quotations from the sole service provider in the country, ESCOM, were sourced and sent to CAP for approval to have an extension installed from Gala to Mwandama center, a distance of about 1.5 km.

Water and Sanitation

In 2009, a total of 29 new boreholes were drilled and equipped with Afridev hand pumps, and two new shallow wells were protected and equipped with Afridev hand pumps in an isolated village within the cluster. Five existing boreholes were rehabilitated. All together, these water points are serving at least 8,750 people (i.e., people are within a radius of 500 m of a water point) representing an additional 25% water supply coverage in the cluster.



Improved water point in Mwandama.

By the end of 2009, over 90% of households had access to an improved drinking water source. The MV project has undertaken a water quality assessment for 29 boreholes and organizes regular water quality monitoring programs. Health surveillance assistants administered point-of-use disinfectant for all water that is drawn from unprotected sources. In 2009, as many as 3,205 households were provided with HTH Chlorine during the peak month of January to avert an outbreak of water borne diseases.

Additionally, training was provided to 32 water point committees in community-based management of water points. Up to 61 committees have raised funds through monthly contributions from water users that they have saved for maintenance of the water point. A sanitation and hygiene assessment was conducted for the entire cluster including schools, and results are due in 2010.

Main Challenges in 2009

- The departure of the Team Leader/Science Coordinator in Mwandama for a senior job in Nairobi left a significant leadership gap in 2009, and the project worked to select a replacement while New York-based and regional personnel were providing additional support and making additional site visits. A replacement has recently been hired.

Main Priorities for 2010

- Complete the Maera Health Clinic.
- Implement the roads projects and electricity grid extension.
- Implement the JM Eagle piped water system in the communities of Majawa, Msowa, Masauko and John.
- Continue pursuing business development opportunities.

7. Tiby (Mali)

Context

Tiby is a cluster of 11 Millennium Villages (total population approximately 70,000 people) located in the Diori and Farakou Massa rural *communes*, approximately 75 km (46 mi) from Ségou in the savanna of central Mali (Ségou Region). More than 75% of Tiby's productive residents are engaged in agriculture. Two main production systems exist in the cluster: one is rain-fed sorghum, millet, fruit tree and livestock production, and the other is intensive irrigated rice production in a 25,000-acre partially controlled irrigation complex along the Niger River floodplain. The main rain-fed planting season takes place in June for October harvest.



Women's garden in Tiby.

Tiby is making substantial progress through the MV project in the face of many overlapping development challenges. Food insecurity and poverty are prevalent due to a number of factors including unreliable rainfall, soil degradation, inefficient irrigation, inadequate transportation and high rates of malaria, all of which the MV project is addressing. Since the MV project began in Tiby in 2006, village residents have made significant advances in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.

Agriculture

The initial introduction and testing of new groundnut varieties has come to an end with the selection of the most preferred varieties (Fleur 11 and JL 24). Plans are in place to grow them at a larger scale, mostly by women farmers specializing in seed production for income generation. In addition, in collaboration with the national research institution (IER), new bean varieties are being tested for specialized seed production in the cluster. Sesame production, reintroduced in 2008, was continued in 2009 with 101 farmers from four villages producing 25.9 tons of raw sesame. This crop holds considerable potential as a means of diversifying the income sources for the farmers located in the rain-fed agriculture zone.

Rice is cultivated in the Tiby cluster on close to 10,000 ha of land adjacent to the Niger River, which is flooded through a series of canals and gates during the rainy season. The farmers received a combination of subsidy (25%) and loan (75%) for inputs in 2009, a loan increase over last year as per the gradual phase-out of the subsidy program. In 2009, 76% of farmers repaid their loans from the year before, as compared to the 95% repayment rate in 2008. Despite the 76% repayment rate (which translates into 2,000 tons of paddy rice out of the total expected amount of 2,600 tons), the farmer association was able to purchase 75% of their fertilizer needs (1,125 tons) as initially planned in the strategy.

There are six warehouses spread throughout the cluster in which the community stores the rice once it has been harvested. The warehouses are controlled and managed by the community itself and there is quality control to ensure that the crop is not damaged during storage.

Prices for rice can rise as much as 40% in the off-season. The MV project helps the community organize an auction during the off-season where several large buyers are invited to participate and the rice is sold in bulk to the highest bidder. This collective selling has measurably increased incomes in the cluster.

Business Development

As an array of business development projects continue, it is notable that tax collection (from businesses and individuals) in Tiby is very strong, and the local governments of Dioro and Farakou Massa report the two highest tax collection rates in the country.

In 2009, the main business development initiatives included the following.

Women's Garden Initiative

In Tiby, there are 15 gardens that have existed for many years but have largely fallen into disrepair because of poor fencing, dilapidated water systems and pumps that have failed. In 2009, the MV project started rehabilitating the first of these, the Sama garden. This five-hectare garden is located on the banks of the Niger River and cultivated by a cooperative of 250 women.

The principal crops planned for these gardens are shallots, with secondary crops of okra and tomatoes. In 2009, the project attempted to acquire the best quality of shallots for planting from the Institute of Rural Economy (IER). However, due to the timing of the purchase this was not possible. Hence, bulbs from the previous season were reused.

As the number of gardens increases, the project plans to construct a modern warehouse in which the shallots can be stored until the best pricing can be obtained. The current storage methods in the cluster lead to a 20-30% loss because of poor ventilation and rodents. When fully functional it is expected that the garden will provide additional income of US\$500 per year to each of the 250 women.

The goal is to rehabilitate all 15 gardens over the next two years through a series of social venture investments. The women's cooperatives will agree to pay back the loans over a period of three years. In addition to increasing the number of gardens, the project will also consider increasing the area assigned to each woman to more than 200 square meters.

Tibybas Canal

This is a three km long canal that carries water from the Niger River to the rice fields. When the river retreats, there is still a considerable amount of water left in the canal. This water can be used to grow a number of high-value fruits and vegetables during the off-season.

In 2009, a small portion of the available land was cultivated with melons, and the project helped the cooperative of women to make a collective sale in the larger markets in Ségou and Bamako. This resulted in the women getting a far higher price than had been achieved in the past.

In the last quarter of 2009, work began to expand the area of cultivation to 30 ha for the coming growing season. The project will supply hybrid seeds and the farmers will contribute

toward the fertilizer purchase. Covering this expanded area will require an investment in water pumps, mobile fencing and technical expertise. For this coming season the focus will remain on melons but eventually diversification to other cash crops is desired.

Dairy Industry

The cluster has a year-round population of 30,000 head of cattle, which rises to well over 100,000 when cattle migrate to the rice fields after the harvest is complete. There is a significant potential for a dairy industry in Tiby. Currently most of the milk that is produced is sold door to door through a women's network. However when the food is abundant the production levels are so high that much of the milk is wasted. The product is of low quality and often adulterated. During the dry season, there is an acute shortage of feed and the quantity of milk drops dramatically.

In October 2009, a business plan was developed for collection and pasteurization of the milk so that it can be sold into the private markets. The project has identified the first 400 households to participate in this scheme and the goal is to collect and pasteurize 500-700 liters of milk per day. To further strengthen the supply chain, the project will also look at the acquisition and distribution of high-quality feed for the dry season.

Another alternative under consideration is to fortify this milk and serve it as part of the school meals program, likely to be provided as a subsidy. Simultaneously the project will also explore selling to private markets and introduce a high-quality product under a private label. The final transition will be to higher value products like butter and yogurt. By the time any subsidy for a school meals program is removed, the project would need private market to be ready and self-sustaining. This initiative is planned for launch in mid-2010.

Education

In 2009, the project completed the construction of the 99 planned classrooms, 42 blocks of three separate latrines for boys and girls, and 21 offices, and rehabilitated seven classrooms in the cluster. To date, the government has provided 62 qualified teachers to the cluster and has opened two new secondary schools. The project has initiated career development training for the 40 community teachers who were already working in the cluster at the beginning of the MV project. In the cluster, there are two parallel education systems: the public schools and the Koranic and medersa (or Madrasa) schools. In total, there are 112 Koranic schools and 13 medersa, and each group of schools serves approximately 3,000 students. A careful building of synergies between the different education systems was initiated in 2009 by the project.



Newly built school in Tiby.

Health

The wide use of RDTs within the cluster has greatly improved malaria treatment rates. Overall, more than 8,000 tests were administered in 2009 by the clinic staff and more than 4,600 by community health workers (CHWs). One major impact of the MV project on the health sector in Tiby has been a shift in national policy with the adoption of universal mosquito net coverage by the national malaria control program.

In terms of maternal and child health, almost all pregnant women who attended antenatal care sessions at the Dioro Health Center voluntarily accepted an HIV/AIDS test. In collaboration with Physicians for Peace, the Ministry of Health, the Red Cross, Ségou and Point G Hospitals, the cluster has successfully conducted two missions on fistula repairs, which have reached 64 patients with a 91% success rate. Good progress was made in reproductive health care from 2008 to 2009. In addition, the number of household visits by CHWs increased by 44% in 2009 over 2008, and nearly eight times more people attended awareness sessions on various topics in 2009 versus the previous year.

Infrastructure and Energy

The Mougando Canal (3.7 km long) has been rehabilitated to improve irrigation along with the 50-km long *digues-routes* (i.e., dykes that also serve as roadways) to facilitate transportation and movement within the Dioro irrigation complex and the villages. The technical design was completed for the two most important remaining roads, Farakou–Yolo (30 km) and Tiby–Sama (18 km), and construction will begin in early 2010. In 2009, four community transport vehicles were officially handed over to the community to help convey people and goods to and from important markets where agricultural products may get better prices. In the energy subsector, the project organized culinary demonstrations and testing of three types of cookstoves in comparison with traditional ones in all 39 villages of the cluster. Over 1,000 cookstoves were sold and the demand is rising for more (over 3,500 units). Finally, the project, in close collaboration with the mayor's office, inaugurated the solid and liquid waste management system in the village of Dioro.



Testing a borehole in Tiby.

Water and Sanitation

The MV project completed 11 more boreholes in the Tiby cluster villages in 2009 serving health centers and schools and increased the improved drinking water coverage to more than 40%. Six mini water adduction systems were designed in collaboration with the JM Eagle pipe donation. The implementation of this program will bring improved drinking water coverage to a majority of people residing in the cluster. The results of the water quality assessment were presented in all the villages and committees were set up or reinforced to promote observance of better hygiene around the water points.

Environment

In 2009, the project trained about 270 new volunteer producers in seedling production and plantation techniques. They raised their own seedlings and planted them in the desired locations on

their farms. In total, they planted nearly 190,000 seedlings out of 192,000 raised. Efforts were focused this year on *Jatropha curcas* (*pourghère*), which can be commercialized for harvesting nuts pressed for oil for biofuels. In addition, the completion of the Mougando Canal has secured rice production on 3,045 ha that are usually flooded, and has made possible the reconversion of more than 1,100 ha of rain-fed agricultural land to irrigated land for rice production benefiting 36,450 farmers.

Gender Equality

In 2009, the MV project organized women producing melons along the Tibybas Canal into a cooperative for selling their production. The most important results include (1) producers gaining bargaining power and information sharing between gardens, (2) wholesalers paying cash, and (3) earning 20% higher prices, all improving producer confidence.

A local, social and voluntary cash gathering operation (*tontine*) was initiated for 500 women from five villages. These *tontines* are highly effective in bringing women together for information sharing and raising awareness on different issues for the benefit of their empowerment. The project has also initiated the development of approximately 85 existing women's organizations into a global network for better information sharing and more powerful advocacy.

Community Development

The project has produced and validated its intervention strategy in community development and gender equality. Village authorities representing key areas in local community development are supported with the creation of "*cadres de concertation*" (community-based organizations that represent their community's interests) in five villages. The one for water and sanitation is an example. Different tools related to the creation and/or improvement of community development centers and community awareness tools were developed for 35 community activists. A village record of major events, updated and kept by the community members themselves, is in place for each of the 39 villages.

Scaling Up

Tiby's success has inspired a national scale-up program, known as "Initiative 166" to expand the Millennium Village approach to 166 of the most food insecure *communes* in the country, reaching approximately 2.5 million people. Further information on this initiative is available in the section titled "Scaling Up" below.

Main Challenges in 2009

- Although included in the government's five-year budget, EDM (Mali's main energy company) cannot confirm that the Markala-Dioro electricity grid connection will be completed by the end of Phase I. The site team, MDG Center and Earth Institute technical staff are determining the best way to address this challenge, possibly through alternative small-scale off-grid solutions.
- At the end of 2009, the infrastructure coordinator for Tiby resigned his position. Infrastructure is a very prominent priority for 2010 and finding a suitable replacement is a challenge that the project team is working hard to address. It may be required to hire through the MDG Center in Bamako (Mali).

- The MV project has proposed to the government a plan to start a health insurance plan, or *mutuelle*, in which users pay an annual premium based on ability. Those who have the ability would pay the whole premium, and for the initial year the project (and in the future the government) would subsidize part or the rest of the annual cost. The project has been negotiating with a consultant to set up the *mutuelle*, and a decision on the plan will be made in 2010. The current health care system in Mali requires that patients pay a user fee to see a doctor, which is not in line with the MV project's priority to provide free health care. (Studies show that user fees reduce the rate of visits to health clinics.) A parallel plan is for the project to cover the cost of the user fees as well as the health care services as is currently done.

Main Priorities for 2010

- Transport 18 containers with piped water equipment donated by JM Eagle from Dakar to the MV site.
- Successfully implement the free health care service program.
- Implement the electricity grid extension.
- Complete the 30 km of road construction underway.
- Prepare for the 2010 Grain Fair (*Bourse des Céréales*).
- Set up the community media center.
- Hire new infrastructure coordinator.
- Focus on business development initiatives for vegetable gardens, an irrigation canal and dairy production.

8. Toya (Mali)

Context

Toya is a stand-alone Millennium Village of approximately 7,500 people, located in northern Mali, about 30 kilometers (18 mi) from Tombouctou along the banks of the Niger River and just at the fringes of the Sahara Desert. Although rainfall is sparse—the area receives less than 300mm/yr—the river provides a constant source of water for irrigation and natural wetlands provide fodder for livestock for much of the year. Most residents are engaged in agriculture (irrigated rice farming) and raising livestock, and some are involved in fishing and handcrafting. The main rice planting takes place in June for November harvest, and off-season planting takes place in March for August harvest.



Farmer weeding a field in Toya.

Toya is beginning to make progress through the MV project in the face of many overlapping development challenges and recent regional unrest. Rainfall in the area is almost nonexistent and unpredictable, and irrigation water from the Niger River is the only means to support agricultural activity. Temperatures can reach up to 130 Fahrenheit, making for difficult living conditions. Very high transportation costs stemming from the remoteness of the region lead to extremely expensive agricultural inputs (e.g., fertilizer, seeds and fuel for irrigation pumps) that can cost many times as much as in other regions of the country. Since the MV project began in Toya in January 2008, however, village residents have made significant advances in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.

Agriculture

The Sahel-Sahara zone is chronically afflicted with food shortages, and so the first priority of the MV project was rice production to try to address the issue of food shortage. Thus in 2009, the project supported 17 farmer cooperatives in rice production. All 17 groups (totaling nearly 2,300 farmers) produce rice during the normal flood season, while six of them also produce rice during the off-season. The farmer groups irrigated 20% more land in 2009 versus 2008, and the project facilitated the acquisition of 72.8 tons of DAP fertilizer (contributed by partner Mosaic), 75.4 tons of urea and access to agriculture extension services. The average yield for paddy rice was approximately eight times higher than pre-MV project levels, and the community's loan repayment rate was 100%.

In the area of agricultural intensification and diversification, the MV project supported research on dry season gardening of okra, cowpea and vegetables on a five-hectare plot. One of the major successes of the project was to support the training of women farmers in vegetable gardening on 1.5 ha across two sites for about 330 farmers, most of whom are women. In partnership with the research institute AVRDC (World Vegetable Center), crop diversification activities focused on about 12 varieties including okra, eggplant, tomato, potato, maize, sorghum, cowpea, lettuce, beet,

cabbage, onion, shallots and hibiscus. In order to improve irrigation and pumping efficiency, the irrigation plots were rehabilitated and equipped with several pedal pumps (Nafasoro pumps) that have a regional distribution network. Test plots were also carried out using SRI (system of rice intensification) in partnership with an American NGO, AFRICARE and a USAID IICEM (Integrated Initiatives for Economic Growth in Mali) project.

In terms of livestock, the MV project supported the vaccination of 5,000 cattle as well as supporting the production of fodder grass for animal feed. Crossing over into the environment sector, the project supported the rehabilitation of about 18 ha of bank stabilizing fodder grass along approximately two km of the Niger River embankment.



Delivery of DAP fertilizer donated by Mosaic in Toya.

Business Development

In 2009, the main business development initiatives included the following.

Irrigation

The development and adoption of a new strategy for the management and operation of the pump sets for the irrigation plots took place in 2009. This strategy was set in place to accompany the two newly acquired pump sets made possible by funding from PepsiCo. The farmer's cooperative oversaw maintenance and upkeep of the 18 pump sets they operate. In addition, the project facilitated rehabilitation of a 55 ha rice plot (in Kondjiga), an off-season vegetable garden (five ha), and two women's vegetable gardens (1.25 ha).

Okra

A five-hectare okra cultivation project was launched in 2009. Although production levels did not meet expectations due to equipment malfunction, the potential for this crop is very good and the project may be reattempted with two new pumps, unless resources are focused back to rice production where there is more local expertise.

Livestock

Provided vaccinations to 5,000 heads of livestock. Demand for vaccinations was high due to the outbreak of an epidemic in a neighboring area. Also reclaimed 18 hectares of grasslands to protect 1.8 km of banks along the Niger River as well as the main flood protection dyke in Toya.

Financial Services

Enlisted one bank (BNDA, *Banque Nationale de Developpement Agricole*) and eight of a planned 14 cooperatives to offer financial services for agriculture in the community.

Note

Due to regional security concerns, access to this area has been restricted, and project progress has slowed.

Education

Campaigns to raise community awareness of the importance of education led to increased school attendance across the cluster. The number of students enrolled in Toya increased by about 25% in 2009 over the previous year. Attendance rates had also increased to 98% as of the end of 2009. In terms of girls' education, there are now nearly 450 girls enrolled in primary school compared with about 350 at the outset of the project.

Health

Accomplishments in the health sector in 2009 include improved monitoring and supervision of the four health clinics in Toya, support of the cold chain for transporting vaccines, support for 12 CHWs, recruitment of two new nurses/midwives and community education on health issues via 12 radio programs on HIV/AIDS, malaria, TB and reproductive health. In addition, the project provided rapid diagnostic test kits (RDTs) and essential medicines and distributed 1,620 insecticide treated mosquito nets to pregnant women and children under five. As a result,



Malaria health training session in Toya.

the MV recorded administration of nearly 2,100 RDT tests (377 positive and treated), 634 children vaccinated against measles, 766 ante-natal visits, 365 assisted deliveries, 602 pregnant women tested for HIV (with five positive cases, of which four were placed on anti-retroviral treatment, or ARVs), 86 patients tested for TB (of which nine were positive and seven were treated and cured), and more than 1,100 children monitored through their early childhood growth stages.

Water and Sanitation

The MV project, in collaboration with the regional Department of Hydrology, completed the assessment of water point breakdowns and water quality analysis in the cluster. A feasibility study for an improved pastoralist water system was completed for potable drinking water, vegetable production and livestock watering for the semi-nomadic residents of Dag Allal. In addition, the MV project provided the four health clinics with educational materials related to hygiene and sanitation.

Gender Equality

In 2009, 28 women's groups were active within the cluster working to support women's equality and independence. In partnership with UNIFEM, the MDG Center in Bamako (Mali) and the MV project, Toya established a gender strategy to ensure gender mainstreaming across all sectors. The village also created and supported the regional gender committee presided over by the governor of the region of Tombouctou. The women's cooperatives (including the vegetable gardening cooperatives) and gender mainstreaming in the village have created an entry point for raising the status and rights of women, and have led to women holding various leadership positions within various MV sector committees including education, health, and water and sanitation.

Community Development and Local Government

The MV of Toya has been able to create a strong climate of collaboration with the technical service departments of the national and local governments. It is in this way that the project has negotiated and signed eight memoranda of understanding with the district (i.e., *commune*) of Alafia, the technical service departments and other development partners. The project supported the establishment of a management committee to oversee the agricultural cooperatives in the village

and facilitate sustainable management of agricultural inputs. Centralizing the management of this committee is currently underway.

In line with the spirit of synergy and partnership, the MV project facilitated the establishment of a number of organizations and committees in 2009 including the following:

- Seven community committees to improve the interface between the MV project and the communities.
- A committee to represent the various development partners in the district of Alafia who recommend the reenergizing of the CCOCSAD (district coordination committee for orienting and monitoring development activities) as the ideal type of committee to advance local development.
- An MDG advisory committee to advise the Alafia district government to develop their five-year budget and work plan.
- A regional coordination committee on gender.

Lastly, the community finalized the strategy for the management and operations of the newly acquired pump sets for the irrigation plots.

Scaling Up

The success of the MVs of Tiby and Toya in Mali has inspired a national scale-up program, known as “Initiative 166” to expand the Millennium Village approach to 166 of the most food insecure *communes* in the country, reaching approximately 2.5 million people. Further information on this initiative is available in the section titled “Scaling Up” below.

Main Challenges in 2009

- The sensitive security situation in Toya is affecting project performance. The project is closely monitoring the situation, and policy directives have been circulated restricting travel and providing security management procedures. To manage the project during this time of restricted access, project staff can be brought to regional hubs such as the MDG Center in Bamako for additional support when necessary.
- As an isolated single-village site, a primary challenge for Toya is staffing and management for the multiple initiatives and programs essential to the Millennium Villages project. Expanding the cluster to include the entire administrative unit (*Commune d’Alafia*) will require additional resource mobilization to cover approximately 15,000 more people.

Main Priorities for 2010

- Finalize the rules and regulations for the irrigation cooperatives so that the pumps can be working for the start of the March irrigation season.
- Finalize the contract for latrine construction in Iloa and Djeguelia (currently with the UNDP for approval).
- Finish construction of three community media centers.
- Continue pursuing business development opportunities.

9. Ikaram (Nigeria)

Context

Ikaram is a cluster of three villages (total population approximately 20,000) located in the southern Nigerian state of Ondo, approximately 400 km (248 mi) from Lagos. Initially Ikaram was comprised of six MVs, but the number was reduced to three in 2009 after the population of the cluster was reevaluated. Funding was shifted to support the expansion of the MV site of Pampaida, where there is a greater natural catchment area for the project. This increased the size of Pampaida from a stand-alone Millennium Village to a cluster of four villages.



Youth center in Ikaram.

A peri-urban area, Ikaram has four health centers, 16 primary schools and seven secondary schools. There are seven major markets in Ikaram that operate once every five days. There are also smaller local markets that are open daily. Villagers have formed credit cooperatives to enable them to access small loans.

Ikaram's climate is influenced by the rain-bearing southwest monsoon and dry northwest winds from the Sahara. The rainy season lasts for seven months and Ikaram receives average rainfall of 1,600 mm (63 in) per year. Farmers produce a range of crops and raise a variety of livestock. On average, land holdings are less than one hectare per farmer. Nearly all of the cluster's residents rely on commercial activity as their primary source of income. For those who do farm, the main season crops are planted in March and harvested in July, with an off-season planting in August for October harvest.

In 2009, the MVs of Ikaram made progress toward achieving the Millennium Development Goals (MDGs) in all sectors across the communities within the cluster. The UNDP country office in Nigeria has continued to play an important supporting and implementation role in the attainment of project objectives, and a strong partnership has evolved among the project, Ondo State and the host local governments. This includes an annual pledge in the amount of US\$600,000 from the Ondo State government to support project activities including improving the road network within the cluster. This has not only improved overall project deliveries; it has also helped in addressing questions of sustainability beyond the project period.

Agriculture

In the 2009 planting season, inputs such as improved maize seeds and agrochemicals (herbicides and pesticides) were distributed to farmers at a 60% subsidized rate. Moreover, 5,000 kg of improved yam varieties donated by IITA (International Institute of Tropical Agriculture) were cut into yam sets (cuttings) for planting. About 15,000 yam sets were distributed to six farmers groups, and 3,000 yam sets were distributed to six primary schools in the cluster. A one-hectare yam demonstration farm was re-established for training farmers and for multiplication purposes. At the Iyani farm site, 0.8

hectares of improved open-pollinated maize and four hectares of cowpea were planted in 2009, and the harvested maize will be treated as seed in the 2010 planting season.

Business Development

While most MVs are based in rural markets, Ikaram operates in a peri-urban market, and is not a primary focus of early-stage agri-business development initiatives. Some projects underway in 2009 included the following.

Agricultural Business

In 2009, farmers formed 15 cooperative groups. In order to address the challenge of rural flight and an ageing population, and to encourage more participation in agriculture, 10 youth were selected from around the cluster for a nine-month agricultural training program at the Leventis Foundation. Focus is being shifted to promote peri-urban agricultural activities such as raising poultry, pisciculture (fish farming), snail farming and other non-crop income generating agricultural activities.



Mama Sara of Inonelwa village in Ikaram demonstrating cassava tubers that have matured in six months instead of the usual 12.

Women's Business Development

Procured sewing machines and other trade equipment to support a number of new women's business development initiatives.

Business Development Training

Twelve artisans in the community benefited from business-related training sessions in time management, attracting customers, managing cash flow and so on.

Education

An additional 31 classrooms were built in schools across the cluster in 2009. In addition, 100 tables and chairs were distributed to schools for teachers' usage, and an additional 2,400 textbooks in English, mathematics, social studies, science and computer studies were supplied. Teachers participated in several capacity building training sessions, including computer training, which have resulted in improved performance and a positive change in attitude. Resource rooms were created in each of the 16 primary schools, and these are now equipped with three computer sets, library books and other print resources, as well as a reading room. School gardens were established in all 16 schools for teaching purposes. Due to community preference and local government policy, Ikaram does not administer a school meals program.



Completed resource room in St. Thomas Primary School in Ikaram.

Health

In the health sector, free 24-hour basic clinical services continued in the four health centers in the MV cluster. All health centers are now connected to the national electricity grid. Qualified technical health personnel have been recruited and trained in family planning and sexual reproductive health. Twenty-four volunteer village health workers have also been recruited, trained and deployed to extend health services by CHWs in the community. Their efforts have resulted in overall increased clinic usage, increased ante- and post-natal clinic attendance, and more deliveries in the health facilities. The referral system was strengthened in 2009 with the arrival of a community ambulance and formation of an emergency preparedness team.

In terms of disease management, malaria testing with RDT and treating positive cases is ongoing. HIV/AIDS control activities were carried out in 2009 through clinics and schools and at the community level. At the clinic level, a total of 363 pregnant mothers were tested for HIV with five testing positive. The project is currently supporting 19 people living with HIV/AIDS by providing nutrition and logistical support for treatment at the government-designated treatment center. Of the 27 people tested for tuberculosis in 2009, none tested positive.

A total of 373 women received some form of contraception in 2009, more than three times the number in the previous year. This is a result of training health workers in family planning issues, availability of contraceptive materials, and the awareness campaign on family planning conducted at the clinic and community level in 2009.

Water and Sanitation

Tender documents for borehole drilling, hand pump rehabilitation and latrine construction were completed and submitted to the UNDP. As of the end of 2009, there are 13 hand pumps and five motorized boreholes in use within different local institutions in the cluster, namely schools, health centers and the proposed project office. Although a contract was awarded for the construction of five hand-dug wells in five settlements in July 2009, at the peak of the rainy season in Ikaram, actual construction began in early 2010. Water supply interventions began in the Fulani herder settlements of the Ikaram cluster in 2009. Three additional Fulani settlements were also identified in 2009 for water interventions in 2010. In addition, bids were evaluated for rehabilitating 44 faulty or non-functional boreholes and constructing six new water points (one hand pump and five solar powered). Regular monitoring and maintenance of the water supply to the four cluster health centers took place in 2009.

Sanitation continues to be a challenge in the cluster as there has been a low level of acceptance of the dome-shaped SANPLAT latrine slabs. Additional efforts and outreach are underway to promote the construction and use of latrines. The procurement process for the construction of 28 units of VIP latrines was concluded and the contractor will commence work in early 2010.

Information and Communication Technology (ICT)

Tender documents and designs for the renovation of community centers were completed and submitted to the UNDP in 2009. Four ICT/Youth Centers were established in four communities within the cluster (Erusu, Ibaram, Ikaram and Ajowa). Training sessions were held for boys and girls on the use of computer applications. Procurements of ICT equipment in 2009 include a photocopier, photo printer and uninterrupted power supply. Regular servicing and maintenance of ICT equipment took place in the four ICT centers. Provision of a 3.5kVA generator for backup was also procured for the ICT center in Ikaram. A LAN (local area network) was setup in the Ikaram, Ajowa and Ibaram

ICT/Youth Centers. Computer engineering and maintenance training was offered to five youth in the cluster. 3G telecommunication technology was deployed in the villages of Ikaram and Ajowa as part of the Ericsson partnership. Closed user groups using OpenMRS were put in place to improve data flow and enhance primary health care delivery at the grassroots level. Three computers were installed in each of the 16 primary schools across the cluster.



Adolescent and young adult boys and girls participate in computer training sessions in Ikaram.

Gender Equality and Community Development

Outreach programs for youth on entrepreneurial development, career guidance

and discussion on a variety of youth related themes, such as HIV/AIDS, nutrition, and sexual and reproductive health have increased awareness and capacity in the communities. An

annual “Youth Week” was held which provided training to youth in leadership skills. Twelve village girls and boys received training in braiding, barbering and tailoring. A workshop was held on the dangers of teenage pregnancy and the importance of female education in nation building.

Training was provided to adolescent girls and women on nutrition education and the establishment of kitchen gardens. A group of women received training in tie-dye processing and received start-up capital to start a small commercial business. Linkages were made with the LAPO (Lift Above Poverty Organization) microfinance bank to strengthen microfinance in the cluster.

Efforts that began in 2008 to reinvigorate community involvement at the project level have continued to yield positive results in increased community engagement and participation, and good understanding of project principles, policies and concepts. The outcome of the community diagnosis survey in the seven communities has equally helped to foster more people-oriented and need-based project interventions, and has also enriched understanding of the local context. For instance, the last Youth Week drew unprecedented reception, cooperation and participation. Training was provided to 30 MV project staff on participatory rural appraisal techniques and participatory learning and action tools and methodologies. An “International Volunteers Day” was organized and took place in conjunction with the UN Volunteers program.

Finally, a visit to the Ikaram MV by the local media represents a step toward increasing partnership between the MV project and the media and is helping to broadcast the MV model to a wider audience. Quarterly interactive project assessment meetings were organized with Akoko Northwest Local Government representatives, community leaders and the MV project team.

Scaling Up

Based on the success of the Millennium Village clusters of Ikaram and Pampaida in Nigeria, the government is planning a national-level scale-up of the MV approach to reach 111 of the poorest local government areas in Nigeria. The initiative is to be entirely self-financed through the country’s debt relief savings account and will reach a population of roughly 20 million people. Further information about this initiative is available in the section titled “Scaling Up” below.

Main Challenges in 2009

- As a peri-urban area where farming is less important to livelihoods than it is in most other MVs, finding appropriate and viable business development opportunities is posing a challenge. The business development team will continue working with site teams to support local entrepreneurs in finding business opportunities.

Main Priorities for 2010

- Finalize contracts with UNDP/CAP for water point drilling and rehabilitations and latrine construction.
- Complete the business plans for the ICT centers and launch them as self-sustaining businesses.

10. Pampaida (Nigeria)

Context

The Millennium Village of Pampaida—a research village or MV-1—was successfully expanded in May 2009 to cover three new villages (MV-2s) in Saulawa District, bringing the cluster total to four villages with a population of approximately 22,000 people.

The cluster is located approximately 50 km from the city of Zaria, which houses the second-largest university in Africa, and approximately 150 km (93 mi) from the state capital. The livelihoods of village residents are mainly based on pastoralism and small-scale agriculture. Nigeria's climate varies across the country, with the northern region, including Pampaida, characterized by savannahs suitable for dryland crops (i.e. maize, millet, sorghum) and grazing livestock (technically an agrosilvopastoral zone). The main rain-fed crop planting in Pampaida takes place in June for November harvest.



Children in Pampaida (Nigeria).

Pampaida is making substantial progress through the MV project, despite facing multiple development challenges including acute and widespread poverty, predisposition to frequent droughts, desertification and pressure on limited resources from human and livestock populations. Poor soil and competition for the limited biomass sources (e.g., for fuel wood, fodder and compost) are some of the most critical natural resource management problems facing the community. In the face of these challenges, Pampaida has made great strides since the start of the work of the MV project and is gaining momentum to escape the poverty trap.

Agriculture and Business Development

In 2009, the main business development initiatives including those related to agriculture included the following.

Maize

In 2009, following the site's expansion from one to four villages, about 2,500 farmers participated in the fertilizer revolving funds scheme in the cluster. The Apex Farmer Cooperatives have been linked to major institutional produce buyers in northern Nigeria for guaranteed pricing and export opportunities. These cooperatives have started selling their produce directly to Grand Cereals and Oil Mills Limited, a Nigerian integrated foods company.

Agricultural Finance and Value Chain Development

Two business development plans for maize and tomatoes were developed for sustainable agricultural financing. These will be strengthened and implemented in 2010. Additionally, capacity building training was conducted for farmers, especially women, in commodity value chain development and entrepreneurship.

Business Development Training

Provided extensive training sessions on a variety of topics including groundnut production, harvesting and processing (152 farmers), fish farming (47 farmers), basic principles of financial management (80 women and youth), forming and managing cooperatives (375 farmers) and investment and financing for new businesses (29 women and 58 men).

ICT Center

Established one ICT center that will be run partly as a business. Empowered 10 young adults with equipment to establish retail mobile communication services.

Education

Throughout 2009, the MV-1 village continued to provide all primary school students with school meals, with the original 10% harvest contributions from cluster farmers in 2006 and 2007. The school meals program has not yet reached the MV-2 villages.

Enrollment has increased, with 143 new students enrolled in September 2009. The new Junior Secondary School opened with 55 students transitioning there from primary schools. Primary school students now attend weekly ICT classes at the local resource center. The project procured and distributed 200 units of combined desks and benches for 10 primary schools and facilitated the construction of two blocks of classrooms and renovated two more blocks. In addition, the project organized capacity building training sessions for 81 primary school teachers in the cluster on various teaching methods and techniques. Due to community preference and local government policy, Pampaida does not administer a school meals program.



Junior secondary school in Pampaida.

Health

The MV project started with one clinic in Pampaida, but following the scale-up that now covers the entire Saulawa District, three more clinics were renovated and equipped for free basic health services, in-patient care, skilled assistance for delivery, family planning and nutrition services. These services are provided by two medical doctors, one nurse, five health extension workers (HEWs, government seconded staff), one verbal autopsy/data clerk, 10 community health workers (CHWs) and one CHW manager.

In 2009, Pampaida recorded improvements in health care delivery through increased utilization of services (e.g., out-patient and in-patient care, immunization coverage, growth monitoring, family planning uptake and institutional deliveries), as well as identification and management of HIV/AIDS and TB, and a school health program. Filling the gap in mosquito net coverage is a main priority for 2010.

Infrastructure and Energy

Infrastructure development in Pampaida has made considerable progress in addressing some of the basic requirements needed for rapid and sustainable development. In 2009, the project made significant improvements in overall infrastructure development in the following areas:

- Renovated three health clinics in the new MVs of Saulawa, Kwari and Fadamar Kale.
- Constructed one block of two classrooms via community support.
- Constructed two poultry pen houses in the cluster.
- Completed the construction of a 10,000-liter Ferro-cement rainwater harvesting structure at the Pampaida school kitchen.
- Equipped the local resource center with five computer units and supplied electricity from the ZAIN Telecom Base station via the Ericsson/ZAIN partnership.
- Started computer training for primary school students, junior secondary students, youth and teachers at the ICT center.
- Established a multimedia business center at the ICT center and conducted training on community resource management for infrastructure committee members.

Water and Sanitation

The cluster continues to make progress in the provision of safer drinking water and improved sanitation. Two boreholes were drilled and equipped with a motorized pump and storage tank in strategic public locations across the cluster in 2009. About 50 traditional hand-dug wells were disinfected. In the area of sanitation, the project constructed two units of VIP latrines and facilitated the construction of two more at the market and junior secondary school. A monthly Environmental Sanitation Day was introduced and sanitation material distributed across the villages.

Scaling Up

Based on the success of the Millennium Village clusters of Ikaram and Pampaida in Nigeria, the government is planning a national-level scale-up of the MV approach to reach 111 of the poorest local government areas in Nigeria. The initiative is to be entirely self-financed through the country's debt relief savings account and will reach a population of roughly 20 million people. Further information about this initiative is available in the section titled "Scaling Up" below.



Solar-powered borehole in Pampaida.

Main Challenges in 2009

- Since the expansion of the Pampaida cluster from one MV to four in early 2009, the project has had to develop special budgetary and management strategies in order to extend all project services (e.g., the school meals program, health care services, distribution of long-lasting insecticide treated mosquito nets) to the three new MV-2 villages.

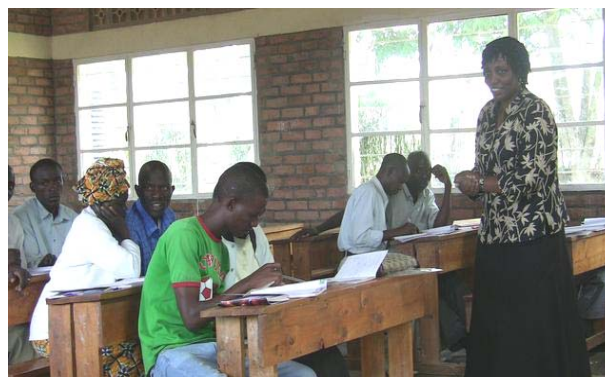
Main Priorities for 2010

- Complete arrangements with UNDP/CAP in order to begin road construction, grid extension and rehabilitation of boreholes.
- Receive, distribute and provide training on application of Agrium of urea top-dressing fertilizer.
- Continue receiving a multi-year commitment of technical and budgetary support from Kaduna State.
- Provide adequate mosquito net coverage to households in the cluster.
- Continue pursuing business development opportunities.

11. Mayange (Rwanda)

Context

The Mayange cluster is located about 40 km south of the capital, Kigali, in central Rwanda. With a population of approximately 25,000 throughout four villages, the cluster largely consists of people who resettled in the area after the 1994 genocide. Unlike most of rural Rwanda where individual homesteads are scattered across the hilly landscape, Mayange has several *umudugudus*, or settlements of closely spaced dwellings, which the government built to house returnees. Sixteen years after the genocide, the district of Bugesera and Rwanda as a whole are intently focused on rebuilding and reconciliation.



Teacher training session in Mayange.

In a country known as the *pays des milles collines* (“land of a thousand hills”), the terrain around Mayange is flatter and drier than most of Rwanda. The community relies primarily on subsistence rain-fed farming for their livelihood. The main planting season is in March for June harvest.

Mayange is making substantial progress through the MV project, despite facing many overlapping development challenges. The area suffers from sporadic rainfall and declining soil fertility, leading to endemic poverty, illness and a lack of economic opportunity. Global climate change and local deforestation are complicating soil moisture management and crop production. HIV/AIDS, malaria and a severe shortage of water resources are all significant development challenges. Before the MV project began, the population was facing impending famine because of failing rains and a poor harvest the year before, and the health center was severely lacking in staff, medicines, equipment and supplies, and had no electricity or running water. Since the project began in late 2005, the community and project team have worked together to transform Mayange from one of the poorest places in Rwanda to a model for successful development.

Agriculture

In 2009, despite ongoing rain failures, Mayange’s farmers stored a total of 242 t of grain (beans, maize and sorghum) in five locations throughout the village cluster. The MV project agriculture team continued to support vegetable gardens at schools and the health center, and promoted kitchen gardens in all households, with 800 households participating in on-site demonstrations. Household kitchen gardens have become common in Mayange, significantly improving nutrition. Over three years, more than 500,000 fruit and agroforestry trees have been planted throughout the cluster. In 2009 alone, more than 52,500 fruit and nearly 210,500 agro-forestry trees were raised and planted throughout the cluster. This has resulted in increased vegetation cover and farmers have started harvesting fruit from trees planted in 2007. The project offered training to farmers on best agricultural practices such as integrated soil fertility management and post-harvest management through community grain warehouses.

Business Development

In 2009, the main business development initiatives included the following.

Cassava

In November 2009, the first cassava processing plant in the eastern province began operations. Mayange's 418-member cassava growers co-operative (KOTKA) secured a loan of approximately \$50,000 from the project's local community development fund to build a basic cassava flour plant. The plant consists of a receiving platform, rasping machine, soaking tanks, pressing machine, drying facilities and flourmill. The plant employs over 100 people as casual workers and five permanent staff, and provides a good and stable price for cassava, a crop that has been intensively promoted for its tolerance to the erratic rainfall patterns in the region. The high-quality cassava flour has so far received great demand in the neighboring town of Nyamata and city of Kigali.



Cassava processing house in Mayange.

With the capacity to process up to 16 t of raw cassava into five t of flour weekly, initial projections estimate profitability for the plant within two years, and the loan paid within five years. These profits will be divided among the cooperative members, thereby capturing the value added by the flour processing.

To help ensure that the processed flour will be sold, the project has opened discussions with the Rwandan military, the World Food Program and both upscale and open-air markets in Kigali and the broader region. Contracts have yet to be signed but the initial indications for agreements with these purchasers are promising.

Livestock and Poultry

Livestock development was also a focus in 2009, including commercial poultry and pig production, upgrading cattle through artificial insemination for increased milk production, and training farmers on improved pasture management and making silage. The project contracted local veterinary stocks to keep all necessary drugs and medicine, providing them with initial stocks. Farmers are now able to easily access these services in addition to support from the MV project veterinarian.



Poultry farming in Mayange.

Amid fear of avian influenza, the government of Rwanda ordered all poultry be destroyed in 2007, resulting in a significant gap in supply. Based on initial conversations with experts from a U.S.-based poultry producer group and preliminary research completed by the cluster's

business development coordinator, the cluster piloted a project for 25 farmers to raise broilers from 2,000 hatchlings using different types of feed.

As broiler production is currently very profitable (farmers selling broilers within 42 days at a price of RWF 2,150 have profit margins of up to 50%), the most pressing challenges the farmers face are an inconsistent supply of hatchlings, and a seasonal demand that increases significantly around holidays at the end of the year.

Given the recorded profitability for the farmers using locally produced feed, they are supporting the expansion through offering the use of the community truck to help transfer the slaughtered chickens to markets in Kigali in a timely manner. Micro-credit financing for poultry farmers has been arranged through Urwego Opportunity Banking.

Pomegranate

A trial plot of 1,000 seedlings over 32 ha is underway, but challenges have arisen with both the cooperative and the agronomy. Plans for this initiative are being reevaluated.

Business Training and Business Plans

In 2009, the MV project provided technical support to cooperatives and individuals on developing business ideas, linking with financing institutions, and training in cooperative and business management. In addition to the business initiatives mentioned above, the project also continued management support for existing businesses such as basket weaving, community tourism, school businesses, soap making and ICT kiosks. A business plan competition drew 200 participants, and Urwego Opportunity Bank and the Mayange community development fund evaluated the proposals and provided funding in the form of small loans to about 100 small businesses in 2009.

Education

In collaboration with the government and community, the MV project constructed six classrooms that will be used for the nine-year basic primary education program. The project had constructed five and rehabilitated 77 classrooms in previous years; this brings the student-to-classroom ratio to 35:1. The project also constructed two latrine blocks of 12 stalls each at two schools, and installed hand-washing stations at all schools. All five schools have been equipped with 12 institutional cookstoves and tests indicate a reduction in fuel wood consumption of more than 50%, saving about five metric tons of wood per stove per year.

The project also conducted various teacher-training sessions and provided textbooks and other school materials. The project's partnership with UNICEF allowed education interventions to be extended to the neighboring county of Nyamata, and the World Food Program continued to support the school meals program. The project also supports the community's six nursery schools and five adult learning centers with education materials and teacher training.

Health

The MV project continued to work on improvements in health services delivery at the health center and three health posts, and places emphasis on strengthening the community health program. Community health workers (CHWs) received training and were supplied with materials on family planning services to provide to the community. More than 1,160 people began using family planning in 2009. Institutional delivery rates remained high due to a number of factors including a 24-hour

ambulance service, and CHWs were provided with bicycles and mobile phones with toll-free numbers to be able to respond to any emergency. A well-equipped maternity ward and trained health personnel have significantly reduced maternal deaths, and a new building to house the maternity ward is almost complete, thanks to support from the Global Fund to Fight AIDS, Tuberculosis and Malaria. The Global Fund also supported the construction of a laboratory that houses the voluntary counseling and testing center for HIV. The project provided food rations for weaning 27 children born to HIV-positive mothers.

The project introduced the RDT (rapid diagnostic test) for malaria, and more than 10,500 people were tested. This greatly saves on the wait time for patients and empowers CHWs to easily detect malaria cases in the community and provide timely treatment. (All children under five years old who have a fever are treated for malaria.)

Infrastructure and Energy

In collaboration with the Rwanda national electricity company, plans are underway to implement a US\$400,000 project to extend the electricity grid to key trading centers and institutions in the cluster and facilitate the connection of at least 1,500 households. Four schools are already connected to electricity.

The extension of a water pipeline to reach points no farther than 500 m from each household is in progress, and all schools and strategic public points have been connected to water points. Five shallow wells for drinking water were also constructed for those households that are located near the valleys. Three blocks of public latrines with 12 stalls were constructed. The latrines are managed by a local hygiene and sanitation cooperative that maintains the cleanliness of the three trading centers where the latrines are located.

A cooperative of 40 members was trained to fabricate efficient household cookstoves that sell for US\$2.60 each, consume as little as 50% of the firewood as a traditional three-stone fire, and reduce particulate matter by as much as 300%. A total of 500 rechargeable LED household lights were sold by a cooperative to the community in collaboration with Lights for Life. The lights are less expensive in the long-term and environmentally friendly since they use pedal generators for recharging. As this was a successful trial phase and demand is high, more lights will be supplied to the cooperative.

Gender Equality

Gender is mainstreamed in all MV project interventions; however, some programs focus on women specifically. Examples in Mayange include all-women business cooperatives for weaving, knitting, soap making and raising pigs. The project helped communities celebrate International Women's Day in 2009, where women displayed their achievements to the public and facilitated the formation of a women's activist group to defend and promote women's rights. Improved health, infrastructure such as safe water, better lighting and more efficient cookstoves have reduced the labor burdens for many community members, especially women.

Main Challenges in 2009

- Erratic microclimate rainfall patterns remain the main challenge for farmers in Mayange, and relying on rain-fed agriculture is not sustainable. The MV project is working with farmers on promoting small-scale irrigation through the use of farm ponds. In the last two years, 88 farm ponds have been constructed and 50 of them lined with plastic to prevent infiltration, and these are being used for supplemental irrigation.

- Small businesses face financing challenges, whereby banks charge 2.5-3% monthly interest rates and offer only short recovery periods. In the case of the new cassava plant, in order to reduce the barriers created by high interest rates, the project is providing the seed money for a revolving community development fund.

Main Priorities for 2010

- Build two health posts and two classrooms.
- Procure a medium-voltage line for connecting 800 households to the electricity grid.
- Finalize the RECO (Rwanda Electricity Corporation) electricity contract for the connections to Kibenga and Muyenzi.
- Finalize the RECO water contract for the JM Eagle piped water extension, which also needs to be elaborated in collaboration with the local water agency (AEP).
- Transport JM Eagle pipes from the port in Mombasa (Kenya) to the site.
- Continue pursuing business development opportunities.

12. Potou (Senegal)

Context

The Potou cluster consists of six Millennium Villages (total population approximately 32,000) spanning the coastal and inland drylands region of northwestern Senegal. Potou is situated about 40 km (25 mi) from the nearest city center of Louga. Most residents practice agriculture, livestock production and fishing. The main rain-fed planting season is in July for October harvest, and off-season planting for irrigated crops takes place in October for April harvest.

Potou is making substantial progress through the MV project in the face of many overlapping development challenges. The coastal plain is a fragile, resource-poor area under tremendous strain. In this arid landscape, there is significant pressure on water resources for irrigation and human consumption. From an irrigation perspective, water management through the use of drip-irrigation is critical to conserve groundwater and reduce the risk of saltwater intrusion. As for drinking water, the use of chemical pesticides and herbicides negatively impacts groundwater quality and therefore providing access to improved drinking water sources remains a constant challenge. Since the MV project began in Potou in 2006, village residents have made significant advances in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.



Leaders of young women's group in Potou.

Agriculture

Food production (mainly millet and cowpea) reached 5,484 tons in 2009, significantly reducing the food deficit in the cluster. The remaining gap is offset by earnings from the sale of groundnuts, which generates an average income of US\$4,734 to producing households. Onion production saw a modest increase in 2009 over the previous year. Strategies are being developed to satisfy the entire annual 160,000-ton national demand for onions. In addition, 34 drip irrigation kits were installed to serve 3.4 ha.



Community grinding mill meeting in Potou.

Business Development

In 2009, the main business development initiatives included the following.

Irrigation

Onions and shallots are the major crops in this region and the profits from commercially growing them could be substantial if labor costs can be reduced. To do this, a drip system is needed to remove the labor of watering the plants manually. The project is pursuing funding possibilities through partnerships with microfinance institutions.

Hibiscus

Some of the women in the cluster have formed a women's hibiscus cooperative, and in 2009 they successfully cultivated 100 ha of hibiscus. This was a substantial increase from the 2008 season. Small-scale marketing of dried hibiscus for the popular beverage *bissap* is well underway. Larger markets outside of the cluster are also being sought and samples have been sent to Celestial Tea. If arrangements can be successfully concluded with such a large buyer, production could be scaled up substantially.

Livestock

In pursuit of establishing a dairy industry, progress on livestock-related initiatives, such as artificial insemination, have been strongly pursued in the cluster, with support from the local government agencies. A partner or investor is still being sought.

Fishing

Three boats have been provided to the cluster and over the past three years they have generated about \$20,000 in income for the fisherman. The project is continuing to expand this activity, for example by seeking better nets and a cold storage mechanism that can preserve the fish and get it to market without spoilage.

Girl's Economic Empowerment

The project is proceeding with income generating activities for girls, which includes training on tailoring, horticulture gardening and soap making.

Education

Unlike the first two years of the project that focused on infrastructure in the cluster, in 2009 gains were made in organization and partnership development in the education sector. Sustained awareness campaigns, coupled with the expansion in coverage of the school meals program, have been instrumental in improving enrollment. To speed up the attainment of universal education, the formal curriculum was extended to five private schools, additionally enabling more than 100 boys and girls to access basic education. In addition, through the PHASE program, 48 out of 50 schools have been connected to piped water in order to improve personal hygiene and sanitation.

Health

In 2009, emphasis was placed on maternal and child health, especially the delivery of emergency obstetric care (EMOC) equipment cluster-wide. Training was provided on various aspects such as newborn resuscitation, rehabilitation of severe acute malnutrition and long-term family planning. TB diagnosis can now be done in the cluster with a newly-built laboratory.

Infrastructure and Energy

In late 2009, the project launched work on a 17.3 km road to improve movement within the cluster as well as access to isolated clinics. About 11 km of this road was completed to link the cluster road network with the regional quarry in Bolting. The work should be completed in early March 2010. The process of connecting 31 villages to the electricity grid is also progressing. An agreement has been made with partners to connect 19 villages, and negotiations are ongoing to include the remaining 12 villages. Meanwhile, the Potou primary school has been connected to the grid, and 18 solar power systems were installed in various locations. In the area of ICT, clinics are now equipped with computers and furnished with media software. The installation of community multimedia centers also began toward the end of 2009.

Water and Sanitation

Since all villages were connected to piped water in 2008, activities in 2009 were mostly geared toward facilitating 600 government-subsidized household connections. The borehole in Same Ndiaye, which serves nearly one third of the cluster, was repaired with external donor funds through the CR-Leona. In addition, 440 improved latrines were constructed out of a demand for roughly 800. Schools and health facilities throughout the cluster have been connected to water points and provided with latrines. Training was also provided to water users' associations in matters such as accounting, water-borne diseases and maintenance of water infrastructures.



Water tank in Potou.

Main Challenge in 2009

- The Team Leader/Science Coordinator in Potou departed for a senior regional position in Cameroon in early 2009, leaving an acute leadership gap. The project worked to select a replacement while Bamako- and New York-based and regional personnel provided additional support and made additional site visits. A replacement has recently been hired.
- In terms of extending the electricity grid throughout the cluster, complex multi-party negotiations are ongoing among the MV project, UNDP, ASER (Senegal's rural electrification agency) and ONE (a Morocco-based firm that specializes in electricity grid installation), and there have been delays to reaching a satisfactory agreement and setting a timeline for implementation. The MoU was signed in early 2010 and the timeline for implementation is due to coordinators at the MV project and UNDP by the end March 2010.

Main Priorities for 2010

- Finalize arrangements between UNDP and ASER for installation of the electricity grid extension.
- Construct two maternity wards, one each in Syer and Ndialakhar.
- Fill the accountant and infrastructure coordinator positions.

13. Mbola (Tanzania)

Context

The Mbola cluster is located in the Uyui district in central Tanzania, 36 km from the nearest city center of Tabora. Located on low, hilly terrain, the six Millennium Villages (total population approximately 34,000) in the Mbola cluster are spread out over an expansive area within Tanzania's central woodland savanna/plateau region.

Subsistence farming is the main economic activity in Mbola, consisting mainly of rain-fed agriculture and the production of local livestock breeds. Farmers rely on maize and tobacco crops and have the largest agricultural plots of any Millennium Village cluster. The village has two distinct seasons, a rainy season between November and April and a dry season for the remaining parts of the year. The main planting season is in November for March harvest.



Schoolchildren in Mbola.

Mbola is making substantial progress through the MV project, despite facing many overlapping development challenges. The main development challenges in Mbola include the high rate of environmental degradation and declining agricultural production resulting from poor crop management practices, and destruction of the Miombo woodlands for fuel wood used in the tobacco industry. Overgrazing and expansion of agricultural land have also contributed to the decline of land productivity. In addition, roads are in a poor state, thus limiting easy access to markets. There is a general lack of basic infrastructure for health and education. In recent years, the rain has become increasingly erratic. Since the MV project began in Mbola in June 2006, village residents have made significant advances in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.

Agriculture

During the two-month distribution period between November 2008 and January 2009, nearly 5,600 of Mbola's farmers received agricultural inputs on credit through the MV project input credit scheme. The project provided input credit on an individual household basis to all 57 hamlets (sub-villages). The project contracted 50 extension workers to assist in providing training in improved farming practices to all farmers. In 2009, farmers diversified their crops to include high-value crops, such as sunflowers, improved cassava cultivars, fruits and vegetables.

Although maize yields fell slightly compared to the previous year, the harvest was sufficient for household consumption. The slight drop in harvest was attributed to the change in fertilizer from di-ammonium phosphate (DAP) to Minjingu rock phosphate (MRP) which was a new fertilizer to most farmers and labor-intensive in its application. The abrupt global change in prices for agricultural inputs forced the project to change to the MRP, which is locally produced and less expensive.

Business Development

In 2009, the main business development initiatives included the following.

Sunflower Oil

In 2009, sunflower was added as a second crop to be grown by farmers in the Mbola cluster, in addition to maize, because of its low requirement for fertilizer and its high-value in the local markets. In the previous year, a small number of households grew sunflower, and the agronomy of this crop was found to be both suitable to the area and economically viable.

The project extended a loan in the amount of \$160 to each of approximately 5,500 households for the purchase of an amount of seeds and fertilizer needed to cultivate two acres of sunflower alongside one acre of maize. Each household was projected to earn approximately \$450 after repayment of the loan, assuming a price of \$220/t for maize and \$320/t for sunflower. It was assumed that farmers would be able to earn a relatively high price for the sunflower seed because the project had established a contract with the largest sunflower oil mill in the country.

The harvest season was very successful in terms of expanding sunflower production throughout the community. However, loan recovery was much lower than expected due to a number of reasons, including the variability of the rains and a grasshopper infestation, as well as a breakdown in the purchasing chain that had been agreed to with the large-scale buyer.

Despite these challenges, sunflower remains a viable cash crop in the Mbola cluster. To fully realize the sunflower value chain, the project has the potential to establish a large-scale oil mill in the area or begin to partner with the small oil mills in the nearby city of Tabora. Finally, the waste that is produced in the form of sunflower seed cake can be a valuable resource for cattle and poultry feed, and could support an auxiliary industry.

SACCO Development

In 2009, the project determined that it was important to establish a strong governance unit to deal with small and medium enterprises and micro credit in the cluster. Using the new savings and credit cooperative organization (SACCO) rules established by the Government of Tanzania, the site team began work on a comprehensive development plan to establish a SACCO in the cluster, focusing on governance structures and capacity development to ensure a firm foundation. The SACCO is currently still in the planning stages.

Micro Mills

Three mills for the grinding of maize and extracting oil from sunflowers were donated to the cluster and should become operational in 2010. These will allow cooperatives to realize the full value chain for maize and for sunflower, with commensurate benefits in jobs and incomes.

Poultry

Poultry production is currently taking place at the household level, and the project is currently evaluating plans to develop a larger and more comprehensive opportunity as producer capacity improves into a more extensive operation. In addition, sunflower cake can be blended with maize and fortified for use as chicken feed.

Honey

The project coordinated 15 traditional beekeeping groups with nearly 200 members to train in modern beekeeping practices.

Education

There are 17 junior primary schools and four secondary schools in Mbola, and for 2008 and 2009 consecutively, the Ulimakafu School has been the best in the district, with all students passing their national standard seven exams and proceeding to secondary school. In 2009, four of a planned six classrooms were constructed, all schools received moderate rehabilitation and 14 of a planned 16 improved kitchens were built and supplied with portable rocket stoves. With the continued school meals program in January 2009, more than 8,000 schoolchildren received daily school meals, provided in partnership with local farmers. In 2009, Mbola's farmers met the need for supplying grain to support the school meals program. Other notable achievements in 2009 were the construction of 17 ventilated pit latrines, supply of desks and textbooks and refresher training sessions for teachers. All these factors contributed to an increase in attendance.



School in Mbola.

Health

Access to health care continued to increase in 2009. Emergency obstetric care services were strengthened through the introduction of ambulance services and mobile phones to all health facilities and community health workers (CHWs). Successful and well-publicized malaria control interventions in the cluster received positive government recognition. Rapid diagnostic tests (RDTs) and indoor residual spraying to combat malaria have been intensified. Approximately 95% of all MV-1 households received two spray treatments in 2009. In terms of addressing HIV/AIDS, both awareness for voluntary counseling and testing and efforts toward prevention of mother-to-child transmission continued in all health facilities within the cluster. Care and treatment centers for people living with HIV/AIDS were established in February 2009 with 30 people, and this number increased to 78 by the end of 2009.

Infrastructure and Energy

Designs for all planned road construction and rehabilitation projects (45 km in total) were completed in 2009. Bids were requested for a contract on 13.4 km of the roadwork, and work is scheduled for completion in 2010. Work on the remaining 31.6 km will be done by the local government and is scheduled for completion in mid-2011. In 2009, two health facilities and two classrooms were equipped with electricity from the grid, while solar electricity was provided in one new clinic and four classrooms. Assessments for both the extension of the grid and off-grid sources for the remaining clinics, households and the community center were completed and connectivity work is expected to take place in 2010.

Water and Sanitation

Hydro-geological surveys for the remaining 48 water sources were completed in 2009, 12 of 20 planned shallow wells were dug by local artisans, seven of 14 planned drilling boreholes were completed as per contract specifications, and 19 improved wells were maintained. In 2010, work continues on both digging shallow wells and borehole drilling, and the water scheme for three villages is expected to start after the arrival of pipes.



Aqua Well Drilling Co. equipment arrived in Mbola in December 2009 to begin drilling seven boreholes.

Main Challenges in 2009

- Payments of top-ups to seconded staff from government agencies were previously channeled through the UNDP. In November 2009, UNDP stopped paying top-ups to seconded staff, resulting in a major drop in productivity with potential long-term consequences for the project. Action from the MV team in New York and the MDG Center in Nairobi addressed this issue and a solution was found.

Main Priorities for 2010

- Construct the 13.4 km road from Ilolangulu to Mbola.
- Build SACCOs and a village bank to enhance revolving fund programs for agricultural inputs.
- Implement the electricity grid extension to Ilolangulu, Mpenge and Mbola.
- Implement the JM Eagle piped water systems in three villages.
- Continue pursuing business development opportunities.

14. Ruhiira (Uganda)

Context

Ruhiira is a cluster of eight villages located in the Isingiro District of southwestern Uganda, near the town and commercial center of Mbarara. Ruhiira and the neighboring area is a recent settlement, created after the clearing of a sub-tropical forest reserve in the early 1950s. The villages, with a population of about 52,000 people, are spread over several hundred square kilometers.

Ruhiira has a sub-humid climate with two rainy seasons. The first rainy season begins in March and ends in May, and the second begins in August and ends in December, though sometimes stretches into the following year. June, July and August are generally the driest months. With elevations ranging between 1,350 and 1,850 meters (approximately one mile) above sea level, the hillsides of this highland region drain into the valleys creating a stream system. Primarily a smallholder farming community, the main rain-fed crop planting in Ruhiira takes place in September for the January harvest, and off-season bean crops are planted in March for the June harvest.



Banana harvest in Ruhiira.

Ruhiira is making substantial progress through the MV project, despite facing many overlapping development challenges. One major challenge is declining food production resulting from the land shortages and reduced soil productivity caused by overpopulation. This, along with an overdependence on banana as the main food source, leads to malnutrition, especially among women and children. Low school attendance, a high disease burden, little access to clean water, deforestation and inadequate roads compound the challenges to development. Since the MV project began in Ruhiira in June 2006, village residents have made significant advances in overcoming these challenges and are gaining momentum to escape the cycle of extreme poverty.

Agriculture

Crop diversification was promoted in the project area in 2009. Banana, which is a major crop, was promoted for both food and income while maize and beans were promoted mainly for food security. Soybeans and vegetables including carrots, green amaranth, spinach and others were promoted for nutritional security. During 2009, 6,323 farmers received training in banana production and management, including control of banana diseases. In addition, 23 farmer groups and 129 individual households were assessed on adoption of improved banana management practices such pest- and disease-control as well as construction of soil and water conservation structures, and adoption was recorded at over 95%. A total of 679 farmers (407 women and 272 men) were also supported with 1.4 t of three improved soybean seed varieties to plant.

Input distribution and capacity building for farmers continued in 2009 to support increased and sustainable production of maize and beans. A total of 1,109 farmers (573 women and 536 men) received training in accessing inputs via subsidy and on the importance of using improved seed and

fertilizers. In addition, 682 farmers (400 women and 282 men) received training in post harvest handling of maize and beans.

The project distributed vegetable seeds for carrots and spinach to 4,683 households (3,436 women and 1,247 men) and provided training to 320 households (102 women and 218 men) as well as 354 teachers and 928 students in backyard vegetable gardening. The project monitored the utilization of carrots and leafy vegetables in 1,056 households and three schools (1,460 students) and all of them were found to be consuming leafy vegetables. In addition, 22 cooking demonstrations involving 2,994 participants (2,678 women and 316 men) were conducted using locally produced foods. The team also undertook a rapid assessment of 17 farmers growing coffee at different altitudes in the cluster.

In terms of livestock, a total of 82 heifers were artificially inseminated and another 20 were purchased and distributed to 15 farmers and four schools for dairy production. The pass-along system of distribution was developed (i.e., a farmer passes along some of the offspring of their livestock to neighboring farmers) and will be used to support more farmers with dairy cows and goats. On disease control, 2,840 heads of cattle were vaccinated against hoof and mouth disease, while 1,634 heads of cattle were treated against *Trypanosomiasis*, 31 against East Coast Fever and 2,910 were de-wormed. Some 113 livestock farmers received training in dairy management, zero-grazing and artificial insemination.

Business Development

In 2009, the main business development initiatives included the following.

Coffee

Initial steps were taken to develop the market for coffee from the Ruhiira cluster in 2009. The project is focusing first on increasing the technical capacity of local farmers for coffee growing, followed by improving processing capabilities and expanding production. At the same time, the project is negotiating to ensure a fair market price for the high-quality beans that the farmers are expected to produce.

Ginger

The pilot project to cultivate ginger under the canopy of the banana trees proved the agronomy of ginger to be very successful in the cluster. Therefore, a second investment of US\$7,000 was made in late 2009. However, launching this as a business is contingent upon expanded production. Given the lifecycle of the ginger root, the recently expanded trial planting (with 200 farmers added to the initial 100) will not be harvested until late 2010 or early 2011. The project has prepared a business plan for the post-processing of the ginger (drying and grinding), and is seeking potential buyers for the finished product. If a market is successfully identified, then production will be expanded beyond the first 300 farmers and the project will seek funding for the ginger processing facility.

Irrigation

The project ran a pilot program in 2009 with drip systems donated by companies in Israel. In addition, the companies also donated a set of three flexible storage tanks. Water was brought up the hill from the valley by pack animals and paid for as a commodity. After all costs were deducted, it was estimated that the cluster could make close to \$2,000/ha per growing season for high-value horticulture crops.

Boer Goats

A donation provided 60 farmers with Boer goats. The benefit of this breed is that a typical healthy female when mated will consistently produce twinned offspring, doubling the return of an average local goat. If these twinned kids are fostered through maturity, the returns on the initial investment are significant. Secondly, if these goats are mated with the local varieties the offspring are considerably larger and therefore have far greater economic value. The project is looking to ensure these returns are achieved through extensive record keeping and evaluating which goats produce the healthiest and most numerous offspring. In the longer term, the project is seeking partners to invest in a slaughterhouse and cold chain to provide even greater returns to local farmers.



Boer goats in Ruhiira (Uganda) from the pass-along goat program.

The project followed up with 40 farmers who received 60 goats in 2008, and all but three were found with appropriate housing structures, while five beneficiaries had inadequate pasture for the animals. Another batch of 85 improved Boer goats were received by donation and distributed to 60 farmers (40 women and 20 men). For grazing pasture improvement, the project distributed *chloris gayana* (57 kg), lablab (50 kg) and napier (975 kg) seeds to farmers.

Grain Warehouse

At present, a women's cooperative manages a warehouse with a 350-ton capacity for maize and beans. This warehouse was built with funds provided by the cluster, and the project supported the community in improving the grain warehouse to a level recommended by the Uganda Commodity Stock Exchange and the World Food Program (WFP). Improvements made in 2009 included installing wooden pallets on the floor of the store, installing translucent sheets on the roof, and installing fencing around the store to improve security. In addition, the project facilitated the grain warehouse to acquire weighing scales to help in its operations.



Grain warehouse in Ruhiira where harvest surplus is stored until it can be sold for higher prices later.

More than 150 t of beans were sold from the grain warehouse to WFP. The beans were of good quality and comprised of single color beans (8,350 kg) and mixed color beans (74,900 kg) totaling 153,250 kg.

The team has now begun the construction of a second large-capacity warehouse (300 tons). Funds in the amount of US\$30,000 have been raised from a donor and will be provided to the community as a soft loan over 3-5 years. The community itself will contribute an additional US\$10,000 toward the project. Instead of developing three separate overlapping

or competitive institutions (two warehousing co-ops and a community truck committee) to manage these existing and potential resources, the business team is working with the community to incorporate the three resources into one centrally managed, partially diversified entity.

Discussions with the WFP have been ongoing to connect the smallholder farmers to the WFP's Purchase for Progress program, providing ready access to a stable buyer for the staple crops at market prices. At the same time, the WFP may provide technical training and support through their expertise in warehousing and logistics.

Community Truck

The sector is overseeing the use and management of two community trucks that are primarily being used to transport building materials and farmers' produce to market centers. It was agreed to review the functioning of the scheme to ensure better controls and improved performance. With support from the regional business coordinator based at the MDG Center in Nairobi, a business plan has been developed linking the truck operations to the grain warehouse activities.

Agricultural Financing

In 2009, the Ruhiira SACCO (savings and credit cooperative organization) registered 39,187,150 Uganda Shillings (US\$20,095) in deposits as savings from members. It also disbursed loans to members mainly for agriculture, business and school fees. The Kisyoro SACCO mobilized 23,999,550 Uganda Shillings (US\$12,300) as savings from members and disbursed loans to members mainly for business-related activities and school fees.

The project has held an initial discussion with Opportunity International to gauge their interest in warehousing and agro-finance schemes. Their response has been positive, but a full partnership is contingent on detailed financial analysis and projections, as well as a clear plan for management and capacity development. These components are being prepared in coordination with the regional business development team and the business development coordinator.

Education

The Ruhiira cluster has 21 primary schools and school enrollment for 2009 was recorded at 10,374 students (5,382 girls and 4,992 boys).

In support of the school meals program, during the year the project distributed 198,000 kg of maize, 66,000 kg of beans, 840 liters of cooking oil, 2,100 kg of sugar and 525 kg of salt to schools. Students received three lunches and three break meals each week during the three school terms of the year. In order to supplement the efforts of the project and parents in supplying food for school meals, schools have been encouraged to grow food and trees in their gardens. Several of them planted vegetables (cabbage, spinach and carrots) along with maize and beans, and most had good crop yields. They were provided with tree seeds (14 kg), potting materials (200 kg), watering cans (21) and hand sprayers (21) to help this process. In addition, tree nurseries have been constructed, and in support of nutrition and income-generation activities related to the school meals program, the project distributed five heifers to four schools.

In order to ensure quality education, the project provided training to teachers in several areas. Thirty Early Childhood Development (ECD) caregivers participated in training session in interpreting the ECD framework, management and administration of ECDs, roles of stakeholders and government policy on ECDs. Teacher training in sexual and reproductive health reached 45 teachers and 42 students from 21 schools, while teacher training on computer usage reached 44 teachers from eight schools. In addition, 85 teachers received training in methods of teaching social studies in primary schools and 81 teachers in methods of teaching mathematics. This training was done in collaboration with the Isingiro district education office.



Classrooms in Ruhiira before project renovations (above) and after (below).



In 2009, 677 students took the Primary Leaving Exam, the standardized test required for all students seeking to enter secondary school, and the results were as follows.

- 22 (3.2%) scored grade I
- 270 (40%) scored grade II
- 197 (29%) scored grade III
- 88 (13%) scored grade IV
- 85 (12.6%) scored grade U
- 15 (2.2%) did not pass

The results show a great improvement over previous years especially in grades II and III, and reduction in the proportion of students scoring poorer grades.

The project continued to support the 16 beneficiaries of the secondary school scholarship program, and most of these students are performing exceptionally well, being among the top three in their classes. The education team visits them at their schools and analyzes their progress on a routine basis. These students have started environmental (e.g., tree planting) and agriculture projects (e.g., vegetable growing) in their former primary schools to help the schools generate income, and have also started a

campaign to urge their classmates to stay in school and work with dedication. Notably, Millennium Promise Japan is planning to support 13 adolescent girls in Ruhiira with scholarships for secondary school during 2010.

Construction of three classrooms, one staff room and one library was completed in four primary schools during 2009. The construction of five-stance latrines (with separate facilities for girls and boys) in four schools was initiated during the year, while the construction of seven five-stance latrines in seven schools has been completed. In addition, the construction of staff housing for eight primary school teachers has been completed.



Teacher training session in Ruhiira.

Forty-four teachers from nine schools received training in the use of ICT to support computer-based teaching and learning. In addition, two teachers completed an online learning course on Youth Media sponsored by Adobe through SchoolNet Uganda. During the year, Kabuyanda Central Primary School joined the School 2 School program, and it will soon be paired with a yet-to-be-identified school in the United States for cross-cultural learning. Twelve teachers and 100 students are expected to participate in this program.

Health

In terms of maternal and child health, in 2009 main activities included conducting family planning clinics, immunizing children against measles, monitoring the growth of the children and ensuring efficient referral systems in the project area. Expectant mothers benefited from 4,188 antenatal care consultations, while 813 women were provided with some form of birth control with 376 of them receiving long-term family planning methods (Depo). A total of 917 children under five received measles vaccinations, while child growth monitoring was also intensified with a total of 12,638 monitored in the year.

A total of 282 sputum samples from patients with TB symptoms were tested, and of these 12% (33) were positive and started on TB treatment using the community-based direct observed therapy (DOTs). During the year, 16 cases were cured after completing TB treatment.

More than 8,000 patients were treated for malaria using Coartem with nearly a third of them being children under five years of age. More than 3,000 patients were tested for malaria, using either rapid diagnostic tests (RDTs) or lab smears at health facilities or at the household levels.

Nearly 2,500 expectant mothers participated in testing for the prevention of mother-to-child transmission of HIV. A total of 1,714 others benefited from voluntary testing and counseling. Sixteen patients started antiretroviral (ARV) treatment, bringing the total number to 174 patients on ARV treatment in the cluster.

Nearly 29,650 patients were visited by CHWs during the year, while more than 5,000 individuals from the cluster benefited from health services from the six health units. Forty patients were referred to emergency health services via the communication system, and 95 patients used the emergency transportation system established by the MV project. Nutrition demonstrations were conducted in all eight villages in the cluster.

Infrastructure and Energy

The opening of new roads and widening of existing roads continued in 2009, bringing the total length of roads opened this year to 31 km. The Ruhiira-Kaberebere Road, connecting the project area to the town of Mbarara and that had greatly deteriorated, was improved with the grading of 17 km of road. The laying of drainage culverts on already-graded roads continued with 35 lines laid in 2009. In addition, the opening of road offshoots or side drains on graded roads also continued. The planned bridge construction at Kiwain Nyamuyanja (on the Ruhiira-Kaberebere Road) and paving Kiwa Hill Road (500m) were not completed due to limitations in funds but are planned for 2010.

Distribution of 500 improved cookstoves from China began through local entrepreneurs and 45 selected “ambassadors” with the help of a student intern from the Earth Institute at Columbia University. Sixteen vendors were identified and trained to sell and distribute the improved stoves. By

November 2009, all 500 stoves had sold out, and due to the high demand, the project has placed another order for 1,000 more stoves. The project is monitoring the performance of the stoves and household feedback will be used to guide future planning and scaling up this intervention. In addition, teachers and cooks received training in the use of institutional cookstoves in the seven primary schools that already have them installed. Bid documents have been prepared to construct 20 more cookstoves in 10 additional primary schools in the area.

The community radio was set up at the allocated frequency, configured and test run, and it worked well for some months. However, during the testing the mixer burned out and hence commercial operation is yet to begin, pending procurement of another mixer.

Water and Sanitation

Bids for the construction of a piped water system were evaluated and a company was selected to do the work. However, due to budgetary constraints this activity has been postponed until resources are found to implement it. The activity has been carried forward for implementation in 2010 and only a small section of the scheme will initially be implemented.



Today, protected water sources make safer water more easily accessible in Ruhiira.

Nearly 1,060 households received training to improve drinking water and received clean reusable plastic storage containers and PuR sachets for decontaminating water at the point of use. Training of 48 CHWs and 2,000 students in the four schools on the use of PuR in water treatment took place, and following this, the improved drinking water program was started in the schools. Spring yield monitoring was carried out three times at 92 water points in the project area to assess the seasonal flow variations.

The household sanitation improvement program began with the selection of beneficiaries and early organizing activities. To implement the program, the MV project contributes sanitary platform latrines (san-plats), ventilation pipes, cement, iron sheets and technical labor, while the community digs the pits and provides the local materials and casual labor required for the construction. So far, approximately 500 pits have been excavated and of these 215 have already been constructed. This activity is planned to benefit about 1,000 households.

Environment

A total of 800,538 tree seedlings were raised and planted by the community during the year, while 2,553 farmers (1,066 women and 1,487 men) constructed 5,935 soil and water conservation structures totaling 156 km in length. Training was provided to 3,814 farmers (2,035 women and 1,779 men) in soil and water conservation measures and general agro-forestry practices.

Main Challenges in 2009

- Due to topography, the costs associated with a much-needed piped water system are extremely high. Pipes for the system have already been donated and are scheduled to arrive in spring 2010. The government has pledged to contribute additional resources, although MV

- Delays continue on the government side to meet the deadlines on electricity grid extension. The site team, MDG Center and Earth Institute technical staff are determining the best way to address this challenge, possibly through alternative small-scale off-grid solutions.

Main Priorities for 2010

- Complete large-scale projects relating to water, electricity, road maintenance and sanitation.
- Launch the School 2 School program in the Kabuyanda Central Primary School.
- Support institutional development as government and communities start to take ownership of project interventions.
- Continue pursuing business development opportunities.

V. Monitoring and Evaluation

The MV project's monitoring and evaluation (M&E) system was refined in 2008, and ongoing enhancement was a priority in 2009. The M&E system consists of performance monitoring, and developing an impact assessment platform and a method for understanding costs and implementation processes.

Performance Monitoring

Performance indicators provide an assessment of real-time accomplishments and outputs/outcomes for MV sites. A quarterly reporting system for performance indicators has been developed after extensive consultation with various sectors. These are based on sector strategies that have in turn been vetted by external experts. Each site reports on 92 performance indicators in nine different sectors (agriculture, community development, education, environment, gender, health, water and sanitation, energy, and transportation and communicationS).

Related to this, the MV project has also developed the Millennium Villages Information System (MVIS). The beta version of this web-based system is currently in use. Starting in April 2010, all sites will report their activities using the MVIS. The MVIS brings together quarterly indicators and survey-based data in a combined portal.

Impact Assessment and Evaluation

Detailed social, economic and health surveys together form a second critical tool to assess changes in MDG-related outcomes. M&E systems survey 300 randomly selected households, stratified by income, from the MV-1 research villages in each MV project site. Detailed socio-economic and health surveys have been and continue to be conducted in all sites at Years 0, 3, and 5, alongside anthropometric measurements and biological monitoring of diseases.

Within MV sites, data collection allows the project to monitor changes before and after the MV project started implementation. Baseline data from the initial surveys is being cleaned by the Earth Institute data team and will be finalized soon. The Year 3 survey instruments for 2009/10 have been dramatically simplified to reduce processing time from more than 18 months to 4-6 months. Data from Year 3 surveys has been collected at a majority of MV sites and is being cleaned and analyzed in 2010.

Additionally in 2009, a series of matched comparison villages (i.e., non-Millennium Village sites serving as the "comparison groups") were introduced. Comparison villages allow the project to assess the consistency of effects across sites while also making definitive statements about attribution and causality (e.g., whether a given observed change was due to the MV project intervention package or a consequence of policy change, or macroeconomic changes).

Economic Costing Evaluation

In addition to financial inputs, the MVs also receive other material, technical and non-priced contributions. Inputs include those from the core MV budget, support from government, private donors, partner organizations and community members who usually provide in-kind support. The

nature and intensity of these inputs differs substantially across sites. Systems to document these inputs, their source and the cost of each component are critical to understanding the costs and benefits of the project and in assessing the degree to which the project approaches the \$120 per capita threshold. The nature of these contributions also has implications for determining the sustainability of the project. The system to collect this information was piloted in the MV cluster of Sauri (Kenya) during 2009, modified based on lessons learned, and has since been rolled out to other sites during 2010. Analyses of disbursements and expenditures provide important insights into the phasing of interventions, distribution of resources between sectors, cost-effectiveness and scale-up.

Process Evaluation

In maximizing the lessons learned from a complex multi-sector project such as the MV project, it is also important to systematically document the process of implementation and the factors that act as barriers and facilitators to this process in order to understand the mechanism of change. The process evaluation arm of the M&E platform uses qualitative tools to disentangle different processes and causal mechanisms. Periodic interviews with key community leaders and members, sector leaders, project management, government officials and donors and community members are being undertaken by the M&E team.

Results from this system, along with the performance and costing information, are expected to inform the MV's feasibility and effectiveness (i.e., did it achieve its goals?), relevance (i.e., were the "right" interventions undertaken?), efficiency (i.e., were they undertaken in the right way?), and its sustainability. The discussions also will generate institutional memory, provide perspectives on contextual barriers and facilitators to effective implementation and generate lessons for replication. A methodology and field guide for conducting this assessment has been developed and has been piloted. It will be rolled out to MV sites in 2010.

VI. Scaling Up

The Millennium Villages project is designed as a proof-of-concept program to test the characteristic holistic approach that differentiates it from other integrated rural development programs. As such, the intention of the MV project is, in part, to serve as a model for replication. In other words, the impact of the MV project is only fully realized when it is scaled up.

There are five main modes for scaling up the Millennium Villages project:

1. **The straightforward expansion of Millennium Villages to new countries**, such as Benin and Cameroon, both of which have announced their intent to launch a Millennium Village program in 2010.
2. **The expansion of specific village-level interventions**, such as fertilizer support or mass distribution of anti-malaria nets, to countrywide scale-up programs. Millennium Village clusters currently reach up to 55,000+ people at a time, and can therefore inform the national scale adoption of practical interventions. This has already been the case with the agricultural support programs in Malawi.
3. **The launch of new Millennium Village clusters across different regions of countries where MVs are already underway**. The Governments of Mali, Nigeria, Rwanda and Uganda are each in the process of preparing such strategies in the context of their respective national administrative structures
4. **A fourth dimension is the expansion of coverage of existing activities from clusters up to other parts of the country**. The Government of Kenya, for example, is currently crafting plans for 98 new “Millennium Districts” with a total population of nearly four million people.
5. **The expansion of strategic partnerships across existing programs, integrating MDG-complementary activities to initiatives already underway**. For example, existing community-based programs focusing on agricultural interventions could be complemented with an integrated suite of interventions focusing on health, education, infrastructure and so forth.

The early successes of the MV project already point the way toward achieving several “quick wins” in agriculture, disease control, school meals programs and the provision of cleaner drinking water. The evidence suggests that local communities are ready and able to contribute major efforts to achieving the MDGs. The evidence also suggests the ability to manage a multi-dimensional investment program in agriculture, health, education and infrastructure at the community level in rural areas. All of these successes are leading many governments such as Kenya, Rwanda and Uganda to envision national rural development strategies based explicitly on scaling up the approaches of the MV project. An increasing group of official and private donors are stepping forward to support such a scale-up.

Recent highlights of district- and national-level scale-up planning processes include the following.

1. Scaling Up in Ethiopia

In late July 2009, a delegation of senior government officials from the federal cabinet of Ethiopia visited the Millennium Village cluster of Koraro with MV project leadership. This visit was followed by a meeting in Mekelle to discuss opportunities for scaling the program to other regions in the country. Through this visit, the government delegation was able to witness the progress made by the MV of Koraro and learn more about the MV approach.

Then in October 2009, more than 35 Ethiopian Parliamentarians took a two-week tour to the Millennium Villages in Kenya and Uganda to learn more about their counterparts' efforts toward achieving the MDGs in the region. The Ethiopian delegation met with the Kenyan Caucus and the Uganda MDG Forum, as well as with other groups and individuals, and returned to Ethiopia with a refreshed perspective on achieving the MDGs by the 2015 deadline.

The trip was coordinated by the MDG Center for East and Southern Africa and UNDP Ethiopia. It came on the heels of the creation of the Ethiopian Parliamentarian Caucus on the MDGs, which is working to raise awareness among Members of Parliament and their constituents about the Goals and ways to implement them in sub-Saharan Africa before the 2015 deadline. Ethiopia is now considering how to expand the MV-approach to other parts of the country.

2. Scaling Up in Ghana

In October 2009, the government of Ghana launched an advisory board for the MV project. As stated in the board's terms of reference, its purpose is to "monitor project implementation, advise on scaling up initiatives, and provide strategic leadership and guidance to ensure the good practices and lessons learned are shared with the Government and its development partners, as well as in the preparation and implementation of MDG-based development strategies.

The board is chaired by the Ashanti regional minister (the Millennium Villages are located in the Ashanti West district), and includes representatives from throughout the government, the UNDP, the WFP, the private sector and the MV project. The early focus of the board is planning for the scale-up of the Millennium Villages-approach to the entire Ashanti West district, which has a population of approximately four million people. The MDG Center for West and Central Africa is serving as a technical resource for the board throughout this process.

3. Scaling Up in Mali

In June 2008, the Government of Mali presented official donors with a strategy to scale up a Millennium Villages-inspired approach to support the country's 166 most food insecure *communes* (or districts) in achieving the MDGs. "Initiative 166" is a five-year multi-sector program which aims to address food and nutrition security, education, health, water supply and sanitation, energy, and roads and transport. The initiative would reach approximately 2.5 million people, with special emphasis on northern regions. The government is committed to financing 45% of the initiative and has asked the donor community for support for the remaining 55% of the budget.

The President of Mali named the head of the national food security agency as the government focal point for the initiative, and a technical working group was formed in Bamako (Mali), including representatives of the government, UNDP and the local MDG Center. An informal working group, including the Earth Institute, Millennium Promise and UNDP, also meets in New York.

In 2009, the government made noteworthy progress on implementing Initiative 166. In addition to launching a website on the initiative (www.initiative166.org), it completed a more detailed assessment of the budget requirements for the program and conducted outreach missions to the *communes* to discuss the goals and the role of local government and community participation in the initiative. Additionally, at the opening of the UN General Assembly in September, the Government of Mali organized a side event dedicated to Initiative 166, inviting members of the public and private sectors to join, including government and donor representatives.

Through a 2009 grant from the Foundation to Promote an Open Society, Millennium Promise and the MDG Center for West and Central Africa completed an evaluation of the medium-term economic potential of the 166 *communes*.

4. Scaling Up in Nigeria

In Nigeria, the Office of the Senior Special Assistant to the President on the MDGs (OSSAP-MDGs) is leading a Millennium Villages-inspired effort to scale up social sector services to reach approximately 20 million people in 111 of the poorest Local Government Areas (LGAs) in Nigeria. Three LGAs will be selected in each of the 36 states and the federal capital territory. This initiative will be supported entirely by domestic resources, using funds available through the debt relief gains, in the form of conditional grants.

In 2009, the government formed both a technical working group at the country-level and an international advisory board to support the scale-up initiative. Jeffrey Sachs is chairing the international advisory board. Furthermore, the government has announced that the LGAs containing the existing Millennium Village clusters of Ikaram, in Ondo State, and Pampaïda, in Kaduna State, will be included in the 111 selected LGAs. The government aims to begin initial implementation of the initiative in 2010.

VII. Key Partnerships

The lead implementing partners of the MV project are the Earth Institute at Columbia University (EI), Millennium Promise and the United Nations Development Program (UNDP). EI is the world's leading academic center for the integrated study of Earth, its environment and society. EI provides research and expertise on the development of science-based solutions for the Millennium Villages project. UNDP is the UN's global development network, an organization advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. UNDP helps coordinate village and national level activities in eight countries and supports the scaling up of the Millennium Villages project to the national level. The World Agroforestry Center, or ICRAF, is also a key implementing partner in the MVs in Kenya.

The Millennium Villages project is made possible through support from a broad array of partners including governments, businesses, international organizations, colleges and universities, faith-based organizations and individuals who provide the expertise, technology and resources that enable the project to fulfill its goals. The project's most significant supporting partners continue to be the Open Society Institute (OSI) and the Soros Foundations Network, and the Government of Japan through the United Nations Trust Fund for Human Security (UNTFHS).

As an alliance on the forefront of mobilizing global partnerships to end extreme poverty, the Millennium Villages project is always interested in exploring new opportunities to support this growing effort. Some of the recent and most active partnerships in the public, private and non-profit spheres are described below.

1. Government Partners

The MV project is anchored in partnerships with national and local governments in every program country. Some examples of recent project collaborations are described here.

Governments with MV Project Sites

South-South Cooperation

One of the driving principles of the Millennium Villages project is for participating African countries to cooperate with one another in finding solutions to common development challenges in order to attain the MDGs. In the 10 countries of sub-Saharan Africa where the project is currently in progress, the MV teams are composed primarily of nationals who are all working to achieve for the MDGs using the same integrated approach, which promotes closer technical and economic cooperation not only among the village teams but also with the governments of the different countries. In order to promote lesson sharing across MVs, in 2009 a number of site visits took place for government delegations to familiarize themselves with the MV project concept, operational strategies and impact. For example, a delegation from the Government of Ethiopia visited the MV sites in Uganda and Kenya; the Government of Congo (Brazzaville) visited the project in Senegal and Mali; and

delegations from the Governments of Benin and Togo also visited the project in Mali. These exchanges help MV teams to improve, diversify and expand their development strategies at the village level, while simultaneously informing and linking them to national priorities and policies.

Government of Ethiopia

Due to Koraro's remote location and lack of active partner organizations in the region, partnership with the local government is particularly critical in the Koraro cluster. In addition to extensive planned partnerships in electrification and transport, the cluster has received strong support from the local Office of Agricultural and Rural Development to reforest and diversify crops through the launch of a fruit tree nursery and provision of more than 17,000 trees. Additionally, in an effort to improve sexual and reproductive health care, a critical health issue in Koraro, local Hawzien government officials partnered with the Koraro cluster team to host a training and discussion session for local health workers and traditional healers to develop a coordinated strategy. In 2009, the government contributed 30% to construction of the Meghab–Koraro Road. As noted above, the government is considering how to expand the MV-approach to the regions outside Tigray. (*See the section "Scaling Up" above for more details.*)

Government of Ghana

To help improve the capacity of the local government, the project held a workshop to discuss the challenges faced by the Area Councils in three communities. In addition, the project is working with these councils to develop a framework to allow for technical and administrative exchange between project staff and council members. In 2009, the Government of Ghana made huge investment in roads and infrastructure (e.g., construction of steel bridge, installation of number of culverts and resurfacing the main corridor to access to the cluster). In addition, the government extended the electricity grid to some parts of the Bonsaaso cluster. As noted above, the government also launched an advisory board for the MV project, which is preparing a proposal for the expansion of the MV-approach to the district of Ashanti West. (*See the section "Scaling Up" above for more details.*)

Government of Kenya

The MV project leadership collaborates closely with many elements of the Kenyan government on an ongoing basis. At the programmatic level, since the launch of the Dertu Millennium Village in 2006, local government representatives have been deeply involved in both planning and implementing MV project interventions. The Dertu team hosts monthly planning meetings with representatives from the Government of Kenya, UN agencies and other local NGOs. In 2009, the Kenya government greatly supported the Dertu MV project by financially supporting the destocking of livestock as a drought response mechanism.

In Sauri, local Members of Parliament and district officials have been highly involved in supporting the agricultural finance program. Furthermore, all six health facilities in the Sauri cluster are run in cooperation with the Ministry of Health. The Yala local government committed to working with the Sauri cluster to develop a major market center in Yala town, which will serve as a commercial center for individuals from multiple surrounding communities.

Government of Malawi

The project has worked very closely with many government institutions on an ongoing basis. For example, the President of Malawi demonstrated extensive support for the Millennium Villages project, including visiting the Mwandama cluster and speaking in strong support of the MV project at

the Millennium Promise Annual Partner's Meeting in September 2009 in New York. The President of Malawi is also interested in expanding the reach of agricultural interventions, as well as replicating the MVs in more communities throughout Malawi, and talks on this are underway.

The Permanent Secretary in the Ministry of Agriculture has also been a strong supporter, identifying the Mwandama cluster as a center of excellence for national agricultural efforts and committing to specific ongoing support mechanisms, including support for inputs, microfinance and the rehabilitation of feeder roads. The Gumulira Millennium Village has received similarly strong support from the Government of Malawi through subsidized agricultural inputs, training of health workers and support for microcredit programs. In 2009, the Malawi MV project board had its first meeting, which was attended by senior officials from five ministries representing agriculture, local government, child development, water and health.

Government of Mali

The MV project in Mali enjoys strong support from the President and Prime Minister, who have launched a major national scale-up effort based on the early success of the project, as noted above. (*See the section "Scaling Up" above for more details.*) The MDG Center in Bamako also works closely with many government institutions and leaders. In addition, the Tiby site works with local institutions including the Office du Riz Ségou and the mayor's office, keeping both involved in project planning and activities. As the former controls the irrigation canals that are critical to the cluster's agriculture strategy, success would not be possible without their support. In addition, the project also received a delegation from the Ministry of Agriculture and hosted the Prime Minister, both visits allowing these officials to learn directly from the project's successes and experience.

On infrastructure projects, the MV project is receiving strong technical support from the local and regional governments, especially on road planning and construction. In Toya, as project activity began in 2008, project staff placed priority on reaching formal agreements with the local administration in several key sectors. They signed memoranda of understanding with the Regional Commune of Alafia, the Directorates for Health, Social Development, and Energy and Water and the local agriculture authority. These partnerships led to the seconding of local officials in agriculture, health and water to support project activities.

Government of Nigeria

The MV project has worked closely with government leaders at the national, state and local levels in Nigeria. As noted above, at the national level, the Office of the Senior Special Assistant to the President on the MDGs (OSSAP-MDGs) is leading a Millennium Villages-inspired effort to scale up social sector services to reach approximately 20 million people in 111 of the poorest Local Government Areas (LGAs). (*See the section "Scaling Up" above for more details.*) The MV project is working closely with the government on this effort.

At the cluster level, the Ikaram project leadership met with the local governing authority to present cluster activities and harmonize the budget planning process between the two entities. In addition, the project increased its interaction with the Ondo State Government and inaugurated a project steering committee with the governor's support. One outcome of this is the expected release of state equipment to support road building within the cluster. In Pampaida, the government's engagement is very positive, as nine delegations visited the project to learn of its successes and challenges

throughout the year. One of these visits, by the Parliamentary MDG Steering Committee, stimulated their interest and served to support momentum for the nationwide scale-up effort.

Government of Rwanda

The Government of Rwanda has provided strong support to health and infrastructure programs in Mayange through the seconding of health staff, participation in gender and health training programs, and extension of the national electricity grid. It has formally committed to scaling up a Millennium Village-related model to every district in Rwanda as part of its national Vision 2020 Umurenge strategy. In 2009, the government agreed to equally share the cost of extension of the grid to the cluster with the MV project.

Government of Senegal

The project maintains close contact with local, regional and national officials in Senegal. At the local level, the project has helped the communities work with authorities to integrate the MDGs into local development plans. In addition, the project regularly receives and meets with national officials, including the Minister of Maritime Economy, the National Director of Fisheries and the Minister of Territory Management and Decentralized Cooperation. Within infrastructure, partnership with the national government has supported the installation of the cluster-wide piped water network described earlier in this report. This partnership continued in 2009 as the project expanded the network of all-weather roads and extended the national electricity grid in the Potou cluster.

Government of Tanzania

The Uyui local district commissioner has been a very strong supporter of the project, and has asked for support to scale up the program to become a Millennium District. At the local level, the Mbola cluster has received strong support from local Ministry of Health officials in developing a fund to support community health programs and the hiring and training of community health workers. National leadership has also been carrying forward lessons from the school meals program.

Government of Uganda

The previous and current Ministers of State for Finance, Planning and Economic Development have been particularly strong supporters of the MV project. In Ruhira, planning collaboration with district officials has become increasingly streamlined. As one example, the local government-operated Kampala Development Project and MV project have partnered to address the needs of individuals with physical disabilities, particularly focused on services for the deaf. In 2009, the district provided an in-kind contribution of a motor grader for several months to assist in the expansion of the road network in the cluster.

Donor Governments

Japan

The Government of Japan was a critical early partner of the MV project, providing support through the United Nations Trust Fund for Human Security (UNTFHS) to launch nine villages in nine different sites. The Government of Japan has more recently supported new MV-3 sites in Benin, Cameroon, Madagascar and Mozambique in partnership with the UNDP.

Republic of Korea

In November 2008, a memorandum of understanding was signed with the Korean International Cooperation Agency (KOICA), the UNWTO ST-EP Foundation and the Province of Gyeongsangbuk-do to implement the Korean Millennium Villages Project (KMVP) in support of two villages in Mbola (Tanzania) and two villages in Ruhiira (Uganda). The KMVP initiative is for a five-year period, from 2009 to 2013. Korea is also supporting the expansion of the project in Madagascar.

2. Major Private Sector Partners

Private sector partners are critical to the MV project. To date, the project has mobilized at least \$40 million of in-kind contributions, including from the following companies.

Agrium

Agrium is a major retail supplier of agricultural products and services in North and South America and a leading global producer and marketer of agricultural nutrients and industrial products. It produces and markets three primary groups of nutrients: nitrogen, phosphate and potash as well as controlled-release fertilizers and micronutrients.

In late 2009, Agrium partnered with MV project for an initial year-long pilot program during which it will invest up to \$500,000 to provide urea fertilizer to Millennium Village farmers and underwrite all associated costs of the product's transportation, delivery and clearance. If expected outcomes are met, the partnership may expand into a multi-country initiative in subsequent years. The pilot sites are Sauri (Kenya) and Pampaida (Nigeria) where over 5,000 farmers will have access to increased inputs and where increased food production will improve the food and income security for over 5,000 households. Overseas shipments will begin soon. Preparations continue at each site concerning clearance, in-country transportation, construction and installation activities.

Ericsson

In 2009, the partnership between the MV project and Ericsson continued to make strides to bring Internet connectivity to the MV communities in an effort to leverage telecommunications infrastructure and services to accelerate the achievement of the MDGs, beginning with those related to health. Major achievements included the completion of network coverage in Bonsaaso (Ghana), Ikaram and Pampaida (Nigeria), Mbola (Tanzania) and Ruhiira (Uganda) as well as negotiations with Zain and MTN to provide toll-free emergency voice services and closed user groups for community health workers, or CHWs. In 2008 and 2009, Sony Ericsson donated over 900 handsets for clinics and CHWs and has committed to completing all health networks across all MV project sites in 2010, which will bring the total contribution to over 1,200 handsets for the health sector.

In 2009, focus on telecommunications services shifted to applications development. With the successful piloting of ChildCount, a Rapid SMS or text messaging-based child health monitoring system in Sauri (Kenya), the MV project was able to demonstrate systematic tracking of nutrition monitoring and immunization coverage for over 9,000 children. This mobile phone-based community health events reporting and alerts system is now being expanded as ChildCount+ to improve the health outcomes of pregnant women, newborns and children under five through mobile phone-based, real-time collection of household level data through text messages to trigger alerts, reminders

and health promotion messages through CHWs. Replication of the expanded system is planned for all MV project sites in 2010.

As part of MV project's telemedicine initiative in Ghana sponsored by the Novartis Foundation for Sustainable Development, pilots were conducted for the Ericsson Mobile Survey Tool and more advanced Sony Ericsson handsets for teledermatology. With the planned launch of a tele-consultation center in 2010, these systems along with other mHealth support tools will be strategically deployed to provide point-of-care support for CHWs and facility-based staff. Through the partnership with Ericsson, the MV project has also benefited from the Swedish Program for ICT in Developing Regions (SPIDER) in the form of junior ICT experts who work alongside local program staff in select sites to support the development and implementation of mobile phone-based tools.

GE Healthcare

The MV project has been working with GE since 2006 when the company announced that it had expanded its philanthropic initiative to improve primary healthcare facilities in Africa. GE in-kind donations of healthcare, water, energy and electrical system products have benefited more than a dozen hospitals in or near Millennium Village project sites. In 2009, GE completed most of its equipment donations, including emergency obstetric care equipment to village health centers. In addition to equipment donations, the company has provided the necessary training and support to ensure ongoing use and maximum community benefit. This effort by GE Healthcare, GE Infrastructure and GE Industrial is part of the parent company's five-year, \$20 million humanitarian project to provide a combination of equipment and services to improve community health and reduce infant and maternal mortality in selected sites throughout Africa.

In addition, in 2009 Millennium Promise launched an ambitious digital outreach campaign with GoodAdds and GE, featuring fourteen real project needs from the MV site of Ruhira (Uganda). From late 2009 into 2010, the program delivered over 100 million brand impressions through prominent banner ads on mainstream sites such as GE's NBC/Universal brand sites, CNN.com, the Huffington Post and others. In addition, through the GoodAdds project and the partnership with GE and their media partners, Millennium Promise was recently featured in a YouTube video contest that delivered another 1.2 million impressions among the important young adult demographic.

GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care. The company's expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, performance improvement, drug discovery and biopharmaceutical manufacturing technologies is helping clinicians around the world re-imagine new ways to predict, diagnose, inform and treat disease, so their patients can live their lives to the fullest.

JM Eagle

In 2009, the MV project and JM Eagle continued working together with the United Nations Development Programme (UNDP), the International Center for Research in Agroforestry (ICRAF) and the governments of eight African countries to meet the MDGs for improved access to safe drinking water for all. Providing resources and materials for piped drinking water, JM Eagle is enabling the project to secure access to water for more than 120,000 people in eight MV sites (Ghana, Kenya, Malawi, Mali, Rwanda, Senegal, Uganda and Tanzania). Since October 2008 over 13,000 people in more than 80 villages have gained access to the piped systems. These systems are managed and operated by the local communities with technical support from government water agencies.

By the end of 2009, overseas shipments had begun. Preparations continue at each site concerning clearance, in-country transportation, construction and installation activities. Weekly conference calls between JM Eagle and the MV project staff in New York are assisting with the oversight and monitoring of this initiative.

Work in Senegal is mostly complete, the designs for piped systems for the remaining seven sites have been completed and the required PVC pipes (55 containers and more than 260 miles of piping) are currently in transit to the sites. Construction of the remaining seven systems will begin upon arrival of the pipes (expected mid-2010).

Table 2. Summary of Planned Water Pipe Delivery (February 2010)

Site	Population to be Served	Total Length of Piping (miles)
Bonsaaso (Ghana)	16,633	57
Tiby (Mali)	38,921	60
Mayange (Rwanda)	18,900	32
Ruhiira (Uganda)	21,922	66
Mbola (Tanzania)	5,660	21
Mwandama (Malawi)	2,666	12
Sauri (Kenya)	3,500	20
Potou (Senegal)	13,500	67
Totals	121,702	335

Lenovo

The MV project and Lenovo are partnering to scale up the presence of ICT across all 14 MV sites, and Lenovo has committed to support the implementation of about 15 ICT kiosks and school labs. (ICT kiosks are small businesses operated by village entrepreneurs that will offer a sustainable way of offering basic ICT services in rural areas.) Schools will receive 5-10 computers depending on whether or not they have access to the electricity grid. The computers in schools without electricity will be powered by solar panels. Where 2G/3G equipment is available, another partner, Ericsson, will equip the lab with Internet access.

As of the end of 2009, details were being finalized for air shipments to begin soon. Weekly conference calls between MV project staff in New York and Lenovo are assisting with the oversight and monitoring of this initiative.

The school computer labs established by Lenovo will play an integral role in supporting the Millennium Villages project's School 2 School program. The School 2 School initiative is an innovative program that uses technology to link schools in the United States with partner schools in the

Millennium Villages. Students from both classrooms share a common curriculum based around the Millennium Development Goals, which fosters a rich cultural exchange.

Mosaic

In late 2008, Mosaic formed a partnership with the MV project to improve farm productivity in the MVs. In 2009, details and logistics for fertilizer shipments were arranged and shipping is scheduled to begin in early 2010. Mosaic committed to delivering 2,640 t (metric tons) of di-ammonium phosphate fertilizer, or DAP, per year for three years. Mosaic also donated up to \$600,000 for costs to bag and transport the product from their facility in Florida to the MVs in Ethiopia, Kenya, Malawi, Mali, Nigeria, Tanzania and Uganda, and covering about 55,250 households (approximately 277,000 people). This donation will be used to implement the MV project's agriculture priorities and empower communities to achieve the MDGs.

Mosaic is the world's leading producer and marketer of concentrated phosphate and potash, two of the primary nutrients required to grow the food the world needs. Its business engages in every phase of crop nutrition development, from the mining of resources to the production of crop nutrients, feed and industrial products for customers around the globe. Its customer base includes wholesalers, retail dealers and individual growers in more than 40 countries.

3. Multilateral Organizations, Foundations and Academic Institutions

In 2009, the MV project intensified its work with several major intergovernmental, private philanthropic and academic organizations.

Multilateral Organizations

UNAIDS

UNAIDS and the MV project are partnering to eliminate mother-to-child transmission (MTCT) of HIV/AIDS. The partnership, announced in September 2009, aims to create "MTCT-free zones" in Millennium Villages where the coordinated, science-based application of emerging best practices in the prevention of MTCT can be demonstrated in a cross-section of rural communities across the continent. MTCT is a persistent problem in sub-Saharan Africa, with only 10% of HIV-infected women receiving the antiretroviral treatment that is nearly 99% effective at preventing MTCT.

World Food Program

The World Food Program is working with the Millennium Villages project to expand joint action to cut hunger and malnutrition across Africa. The enhanced partnership objectives, announced in September 2009, include ensuring universal school meal coverage for children in primary schools within Millennium Village clusters, finding the best way of meeting the nutritional needs of children affected by HIV/AIDS, tuberculosis and other pandemics, and working with smallholder farmers to boost productivity and incomes. These objectives build upon earlier collaboration in the area of school meals.

Foundations

Bill & Melinda Gates Foundation

In addition to supporting the Earth Institute's scientific team, the Gates Foundation supports the MV project's advocacy and outreach efforts around the MDGs, including media outreach, partnership building and information dissemination on the MDGs.

Open Society Institute and the Soros Foundations Network

OSI and SFN work to improve the lives of the world's most vulnerable people and to promote human rights, justice and accountability. OSI and SFN are the largest supporter of the Millennium Villages project providing crucial partnership across a broad range of implementation, policy and business development activities.

SNV

SNV helps support business development in the Millennium Villages. From November 2008 through end-2009, SNV supported MV business development positions at the regional-level in Africa and at the site-level in five countries: Ethiopia, Ghana, Rwanda, Tanzania and Uganda. In addition to this grant, SNV is an important thought partner on income-generation in the Millennium Villages, specifically for identifying and launching new agro-business opportunities, introducing and expanding smallholder farmers' access to financial services, and identifying new markets for village agricultural output.

Table for Two

Table for Two is a non-profit organization committed to providing school meals for children in developing countries. Through a partnership with the MV project and the World Food Program, Table for Two contributes to the school meals programs in Gumulira and Mwandama (Malawi), Mayange (Rwanda) and Ruhira (Uganda).

University Communities

Carleton University

Spurred by a global call to action on the MDGs, undergraduate students at Carleton University in Ottawa (Canada) successfully mobilized thousands of students to pass a university-wide referendum that would help support the Millennium Villages project. Student organizers collected thousands of signatures to put the measure on the ballot, and then to secure a majority of votes for its passage, ensuring that the \$6 per student levy will be applied toward efforts to help end extreme poverty. The MV project is proud to partner with Carleton and other universities throughout North America to raise awareness of the MDGs, and to develop tangible Calls to Action that can be readily embraced by student populations everywhere.

VIII. Key Priorities Moving Forward

Critical priorities for 2010 are focused on achieving Phase I goals and a successful transition to Phase II. In addition to broader policy support for scale-up efforts, key goals include strengthening systems to support private sector development, completing infrastructure projects and strengthening health systems. Phase II will then focus on four strategic priorities:

1. Promote private-sector development to achieve the income poverty MDG and set in motion self-sustaining economic growth. This will include investments at four scales:
 - a. Household-based enterprises (e.g., up to \$1,000 through microfinance).
 - b. Mid-scale “incubation” cooperatives and village-level businesses (e.g., up to \$25,000 for community gardens, livestock businesses, etc.).
 - c. Large-scale enterprises, in particular agribusiness (e.g., \$500,000+ for sunflower processing mill, oil palm processing, large-scale honey production, etc.).
 - d. Partnerships with local commercial banks to expand credit for smallholder agricultural finance (e.g., joint guarantee with Equity Bank in Kenya).
2. Ensure continued successes in health, education, infrastructure and other core areas in the Millennium Villages.
3. Promote ongoing innovations for rural service delivery through continued local leadership of the MV project team.
4. Promote major scale-up of the MV project model.

In the second phase, MV project donors will provide less direct financing for interventions while national governments, local communities and international partners like UNAIDS and the World Food Program provide increased resources. Government programs include those backed by official development assistance (ODA) (e.g., national health strategies will receive support from the Global Fund to Fight AIDS, TB, and Malaria, the U.S. President’s Emergency Program for AIDS Relief). Meanwhile national smallholder agriculture programs should receive support from the new commitments announced at the 2009 G8 Summit. MV project leadership will work with government partners to ensure MV cluster sites receive prioritized support in the context of national programs.

1. Business Development

To support the piloting of key business support systems for MV project Phase II, five key focus countries for business development have been selected for 2010: Ghana, Kenya, Malawi, Mali and Uganda. This will not exclude initiatives from starting in other clusters. It will, however, imply a focused effort that concentrates on the following priorities.

- Identifying business opportunities.

- Organizing groups of households into legal cooperatives.
- Building the management capacity in the cooperatives.
- Determining the support, infrastructure, logistics and transportation needs that will be required to complete the entire value chain for proposed business development initiatives.
- Pooling resources across businesses and organizations in order to optimize their use.

Business development activities will be driven by three key principles:

- **Building upon success.** In 2009, many of the pilot projects showed varying degrees of success, and those that were more successful provided the MV project with the prototypes on which expansion can be modeled. Because these pilots are now operational, it is easier to find investors for the scale-up, as well as to refine the costing models, identify potential markets and develop the linkages with input and output markets. Capacity building for business development skills is also offered at most sites to support success in this sector.
- **Developing value chains through partnerships.** The project will work with multiple partners to develop the complete value chain for each project. The goal is to launch projects that can come to scale, have significant impact and are large enough to also have regional impact.
- **Sharing lessons learned.** As projects expand and deepen, new lessons will emerge. It will be beneficial to find a way to share these lessons with various partners and supporters, whether on a formal or informal basis, and see what synergies might be possible. Informal discussions at the country and regional levels have already been highly beneficial in arriving at potential solutions to some of the challenges.

Agricultural finance will continue to be a central aspect of the business development sector's priorities in 2010. Early partnerships show that rural credit programs to farmers can work and that loans can be repaid, if screening is done carefully and the penalty for defaulting is perceived as real. For the knowledge and the systems to become institutionalized, additional support will be needed in the form of technical expertise and finance.

2. Infrastructure Development

The key priorities for 2010 are to implement the remaining large infrastructure projects, particularly the extension of national electricity grids to broad areas in the MV clusters, and complete the road rehabilitation plans. Both will have a strong impact on promoting new business development activities in the MV project areas, among other benefits. Working in tandem, improved communications, transportation and energy infrastructure and services can enhance and support government activities, while enabling income-generation and cost savings.

In places where the national grid is too far from the cluster and unlikely to reach in the MV project in the immediate future, mini-grids (10-30 household coverage) will be implemented to ensure affordable access to energy to as much of the population as possible.

The community-level energy programs for non-network technologies (lanterns, household cookstoves, etc.) that have shown encouraging steps toward sustainable self-management will continue in 2010 and will be expanded to several other clusters.

With respect to ICT, the partnership with Lenovo will provide the MV clusters with a higher number of computer labs in schools, improving the quality of education. It will also focus on small business development, putting in place small ICT kiosks that will provide a number of services such as use of computers, internet, phone calls, phone charging, photocopies and so on.

3. Health

With the core building blocks of the health sector now largely in place—major barriers to access have been reduced, basic infrastructure has been built, and so on—major efforts are now underway to improve the quality of care. This will be done through optimizing the use of information for health decision-making, and establishing management systems to provide additional support to community health workers (CHWs) in their role as an extension of the primary care system. Finally, the project will be working to fill gaps in a number of areas by, for example, introducing simple, cost-effective interventions to reduce neonatal mortality, and working to improve uptake of modern, long-acting methods of contraception through meeting supply-side issues.

All 14 sites are planning around five main goals for the coming years: (1) strengthening management and supervision structures, (2) building better health operations systems, (3) scaling up use of effective technologies (mainly Rapid SMS-like solutions), (4) increasing community engagement and (5) improving the quality and reliability of service delivery.

As Rapid SMS and other mobile technology transforms the way health care is delivered in the Millennium Villages, a key priority in 2010 and beyond is to support health outreach services. Building on early success with the ChildCount+ system piloted in Sauri (Kenya), the health sector will be working to scale up these effective technologies, bringing them to additional MV sites over the coming years.

Successful health outreach services depend on the CHW program, which has been highly successful in the first years of the MV project, delivering health services to village residents directly in their homes. The health sector will continue to support this program by helping with training, equipping and facilitating CHWs.

In terms of reducing maternal and infant mortality, the project will continue to promote safer childbirth by reinforcing antenatal care, implementing safe childbirth checklists in all of delivery wards, strengthening post-natal care services and establishing community-level neonatal care activities, including mandatory CHW household visit within 48 hours after a birth. In addition, through the new partnership with UNAIDS, the project is working toward establishing mother-to-child transmission-free zones by implementing new prevention of MTCT protocols in all sites.

Additionally, the health sector will continue to face the challenge of providing access to health care at low or zero cost to village residents after the end of Phase I of the project. Strategies include coordinating with national health insurance plans.

Completing construction, equipping and staffing of all clinics will continue, along with training staff and CHWs in skills ranging from emergency obstetric care to rapid diagnostic tests. The project also will continue to strengthen and improve data collection and reporting.

4. Financial and Human Resource Constraints in Small Sites

The MV project also continues to tackle some key administrative challenges, particularly in small sites. The project's financial model budgets only \$10 per capita for management costs to support this local villages teams. This is generally sufficient to cover the fixed cost of a team in the large clusters, but in single Millennium Village sites—including Dertu (Kenya), Gumulira (Malawi) and Toya (Mali)—the management budgets are insufficient to cover minimum staff requirements. Small budgets lead to additional program challenges, for instance when lack of housing contributes to a shortage of teachers in small sites.

To address the “small site” issue, project management is applying one or more of the following measures, where appropriate: (1) mobilizing additional resources for strained management budgets, (2) re-allocating sector-related management expenses to the respective sector intervention budget, and (3) mobilizing additional resources to finance adjacent Millennium Villages, thereby “growing” the site. If these strategies are not possible or successful, the project will need to consider scaling back staffing and potentially operations in particular sites.

IX. Conclusion

This report has detailed the many ways in which the Millennium Villages are making major progress on the project's goals while also contributing to a broader global understanding of the viability of holistic, integrated approaches to tackling extreme poverty. While more detailed statistical assessments of progress will be published in the first half of 2010, early MV results can be summarized as follows:

- Tremendous improvements in food production, food security and nutrition.
- Increases in gross enrollment rates in many sites.
- Major advances in disease control, particularly malaria.
- Major progress in child health and important early progress on maternal health.
- Major progress in access to improved drinking water.
- A wide array of improvements in basic infrastructure.
- Significant progress in opportunities for income generation, with a focus on women.

The project is now focused on preparing for the transition to Phase II. This includes major emphasis on completing progress toward core MDG goals by mid-2011. It also includes a focus on consolidating Africa-based management systems, building a platform for supporting private sector activities in and around the villages, and identifying mechanisms for local governments and partners to take on an increasing share of service delivery responsibilities. The aim is for the Millennium Villages to become national flagships for system innovation in each country, in line with the precedent established by the project's UNAIDS partnership to create MTCT-free zones as centers of policy learning.

The September 2010 UN summit on the MDGs will be the last major opportunity for governments to put in place a coherent plan for achieving the Goals in time for the 2015 deadline. The Millennium Villages project is hard at work rallying increased support among partners and policy makers in advance of the summit to ensure key priorities are incorporated into the meeting's outcomes. In addition to major global breakthroughs in agriculture and health over the past year, recent Millennium Village endorsements by the UN Secretary-General, UN member states and African governments all suggest that a broader policy breakthrough can soon be achieved for holistic approaches to community-based development. Our community of partners, supporters and stakeholders continue to play an instrumental leadership role in making these and other forthcoming breakthroughs possible.

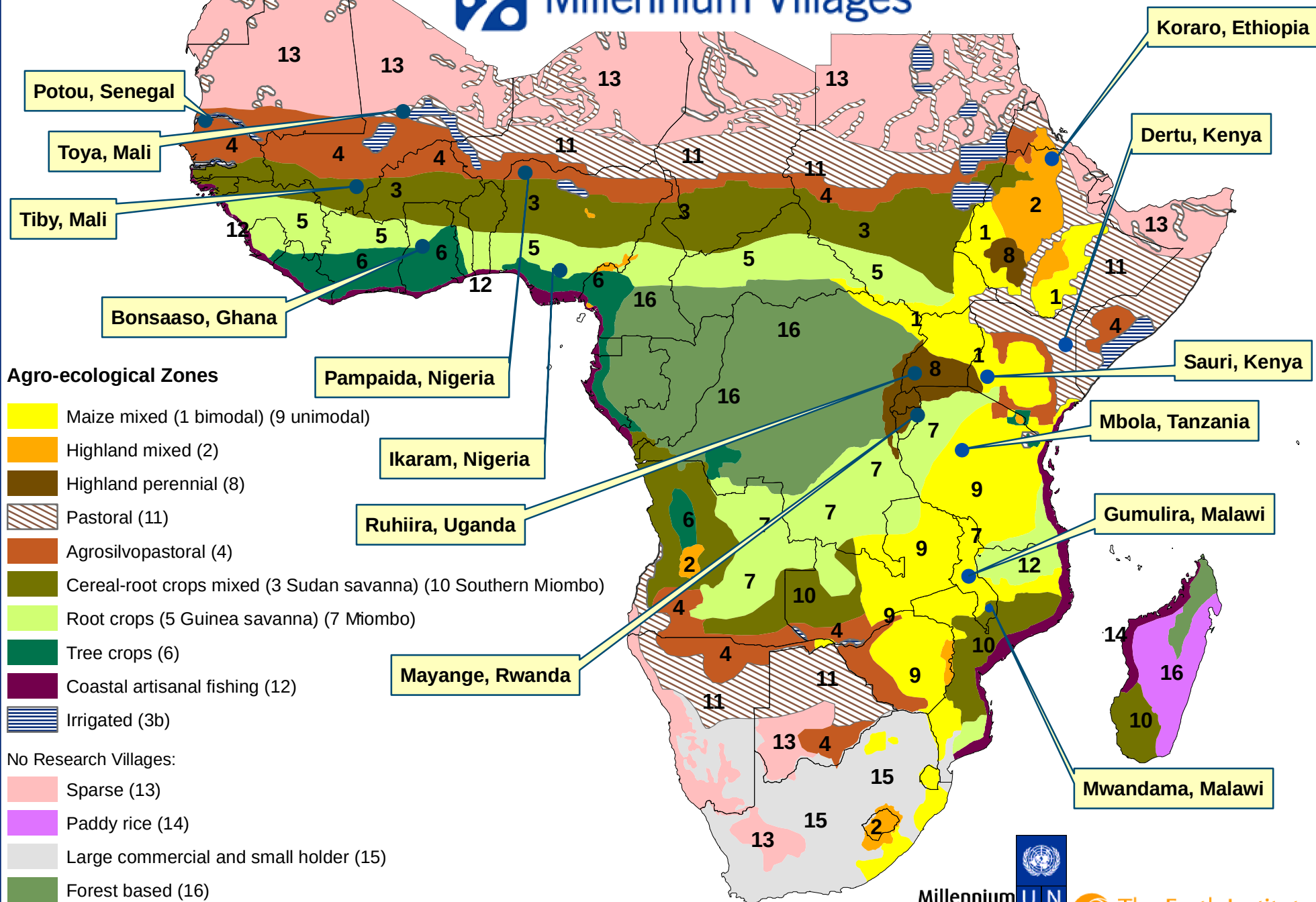


A road in Mwandama (Malawi) before rehabilitation (left) and after.

X. Appendices

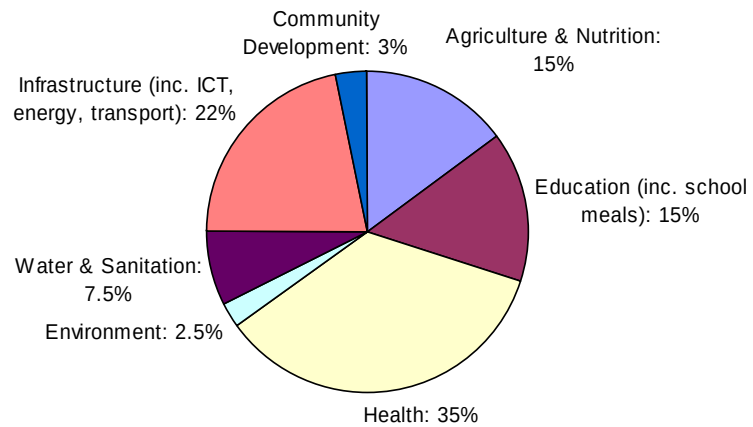
- A. Map: Africa's Agro-ecological Zones and the Locations of the 14 MV Project Sites**
- B. MV Project Budget Model: Allocation by Sector**
- C. Millennium Villages by Type, Source of Funding and Implementing Partner**
 - 1. List of Millennium Villages that are Implemented and/or Funded by the Millennium Villages Project (as of December 31st, 2009)
 - 2. List of Millennium Villages that are neither Implemented nor Funded by the Millennium Villages Project (as of December 31st, 2009)
- D. Examples of 2009 Infrastructure Projects – Maps and Pictures**
- E. UNAIDS Partnership – Press Announcement**
- F. World Food Program Partnership – Press Announcement**
- G. Selected 2009 Media Coverage of the Millennium Villages Project**
- H. “Shower of Aid Brings Flood of Progress” by Jeffrey Gettleman, New York Times, March 8, 2010.**
- I. Overview of the Millennium Development Goals (MDGs)**

Millennium Villages



Adapted from Dixon et al. 2001. Farming Systems and Poverty. FAO

Appendix B. Millennium Villages Project Budget Model: Allocation by Sector



Appendix C. Millennium Villages by Type, Funding Source and Implementing Partner

Exhibit C1. List of Millennium Villages implemented in partnership by the Earth Institute, Millennium Promise and UNDP (as of December 31, 2009)

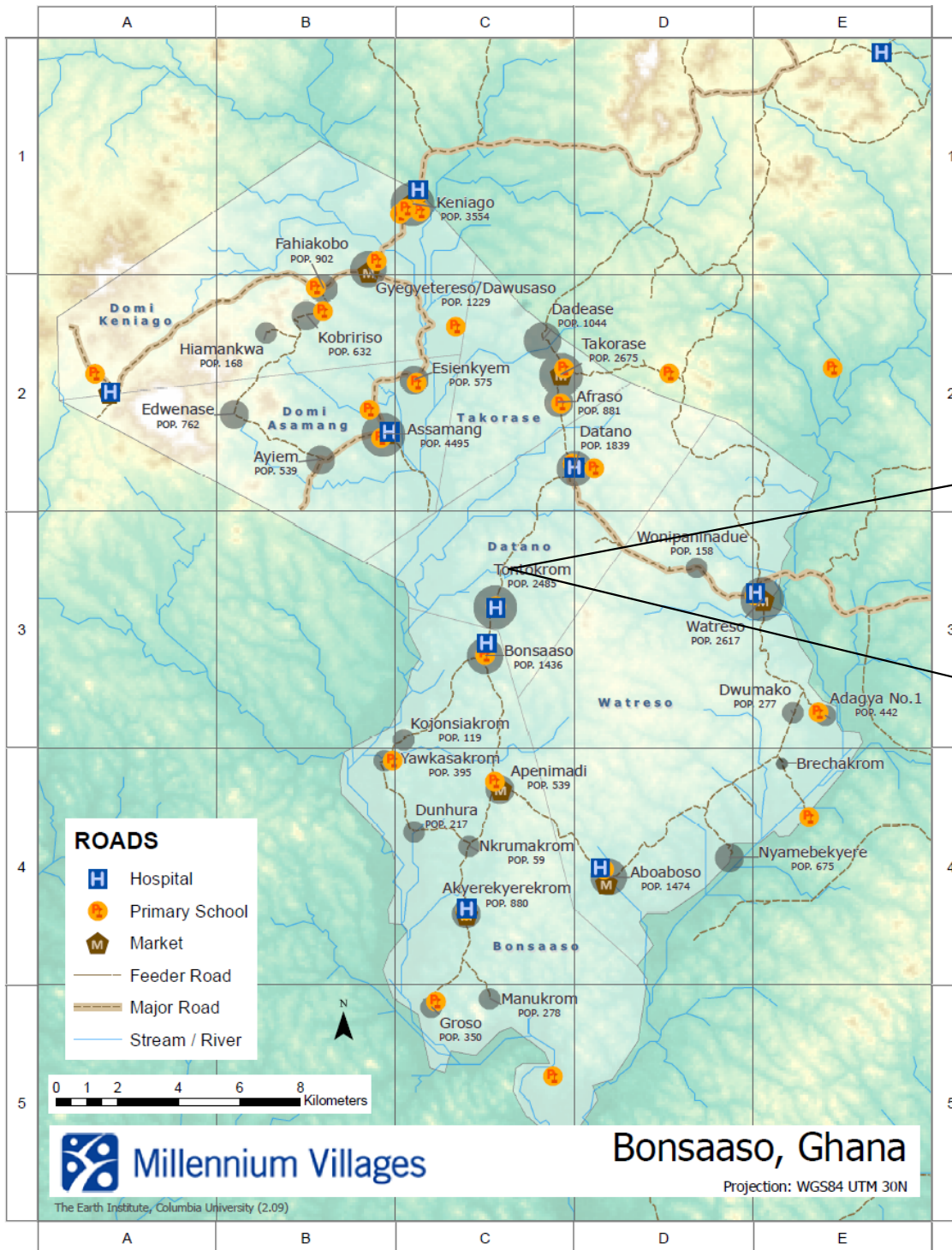
Country	Site	MV Type	Number of Villages	Source of Funding	Local Implementing Organization	Launch Date
Ethiopia	Koraro	MV-1	1	EI	MDE	Feb. 2005
		MV-2	10	MP	MDE	June 2006
Kenya	Sauri	MV-1	1	EI	ICRAF	Aug. 2004
		MV-2	10	MP	ICRAF	June 2006
	Dertu	MV-1	1	UNTFHS	UNDP/ ICRAF/ EI	June 2006
Ghana	Bonsaaso	MV-1	1	UNTFHS	UNDP	June 2006
		MV-2	5	MP	UNDP	June 2006
Malawi	Mwandama	MV-1	1	UNTFHS	UNDP	June 2006
		MV-2	6	MP	UNDP	June 2006
	Gumulira	MV-2	1	MP	UNDP	Oct. 2006
Mali	Tiby	MV-1	1	UNTFHS	UNDP	June 2006
		MV-2	10	MP	UNDP	June 2006
	Toya	MV-2	1	MP	UNDP	Jan. 2008
Nigeria	Ikaram	MV-1	1	UNTFHS	UNDP	June 2006
		MV-2	2	MP	UNDP	June 2006
	Pampaida	MV-1	1	UNTFHS	UNDP	June 2006
		MV-2	3	MP	UNDP	May 2009
Rwanda	Mayange	MV-1	1	EI	MVP Rwanda (EI)	June 2006
		MV-2	3	MP	UNDP	June 2006
Senegal	Potou	MV-1	1	UNTFHS	UNDP	June 2006
		MV-2	5	MP	UNDP	June 2006
Tanzania	Mbola	MV-1	1	UNTFHS	UNDP	June 2006
		MV-2	5	MP	UNDP	June 2006
Uganda	Ruhiira	MV-1	1	UNTFHS	UNDP	June 2006
		MV-2	7	MP	UNDP	June 2006
TOTAL			80			

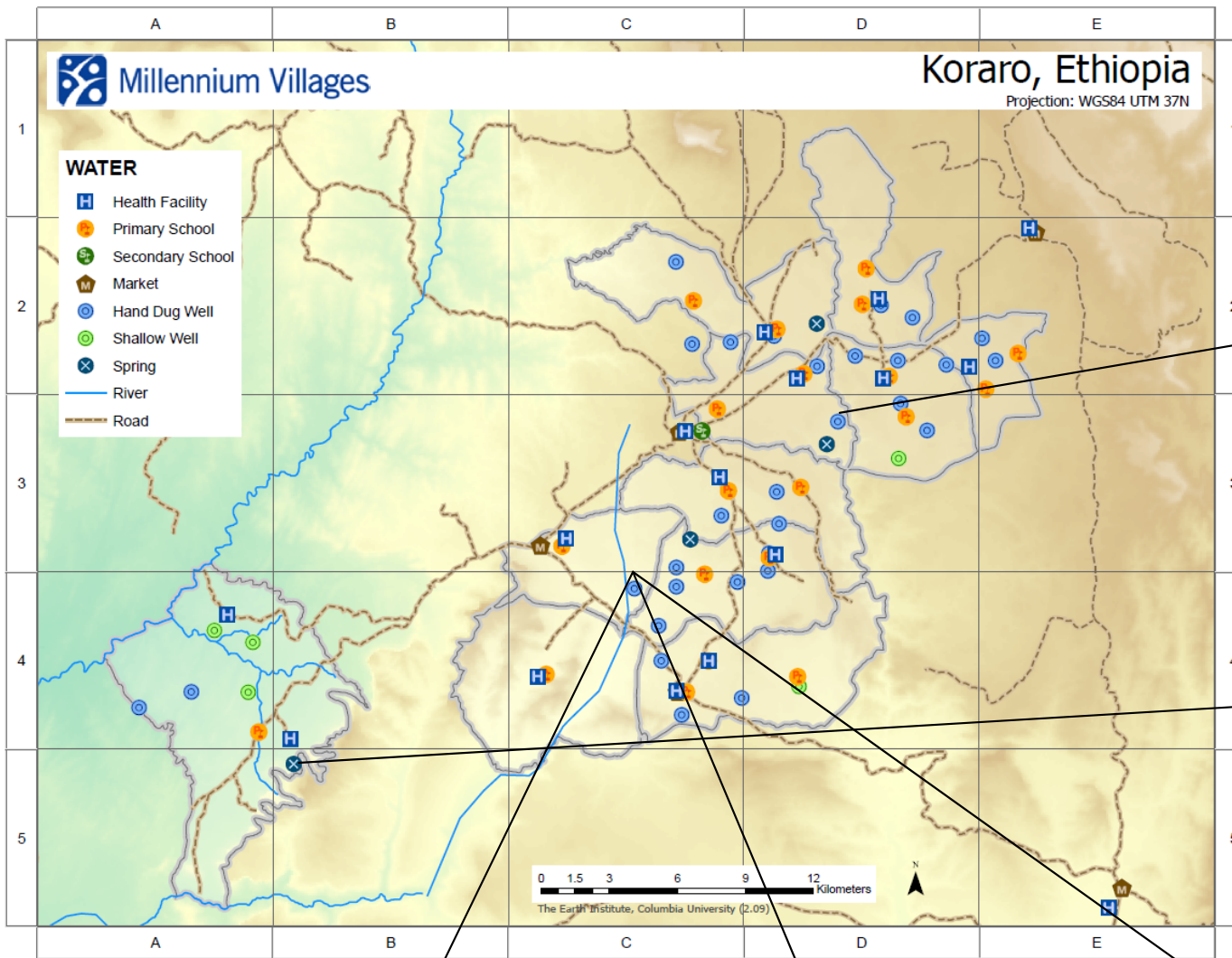
Exhibit C2. List of new Millennium Villages

Country	Site Name	MV Type	Number of Villages	Source of Funding	Implementing Organization	Launch Date
Benin	Banikoara	MV-3	3	CEF	UNDP	Funding to be approved July 2010, start expected Q4 2010
Cameroon	Maroua	MV-3	3	CEF	UNDP	Funding approved Feb. 2010, start expected Q3 2010
	Meyomessi	MV-3	3	CEF	UNDP	Funding approved Feb. 2010, start expected Q3 2010
Liberia	Kokoyah	MV-3	3	Norway	UNDP	Sept. 2008
Madagascar	Sambaina	MV-3	1	Korea	UNDP	June 2008
	TBD	MV-3	TBD	CEF	UNDP	TBD
Mozambique	Chibuto	MV-3	1	UNDP/Portugal	UNDP	Jan. 2007
	Chokwe	MV-3	1	CEF	UNDP	Sept. 2009
	Lumbo	MV-3	1	Portugal	UNDP	Jan. 2007
	Alto Molocue	MV-3	1	CEF	UNDP	Sept. 2009
	Monapo	MV-3	1	CEF	UNDP	Sept. 2009
Uganda	Kabera-maido	MV-3	TBD	TBD	UNDP	2009
TOTAL			18 +			

List of acronyms:

- CEF: Community Empowerment Fund, through which the Government of Japan's support for most MV-3s is channeled
- EI: Earth Institute at Columbia University
- ICRAF: World Agroforestry Centre
- MDE: Millennium Development Ethiopia, a locally registered not-for-profit organization
- MP: Millennium Promise
- MV-1: A research Millennium Village, funded through the UNTFHS or the Earth Institute, where the EI conducts additional data collection for scientific investigation
- MV-2: A Millennium Village supported by financial resources from Millennium Promise
- MV-3: A new Millennium Village financed outside of Millennium Promise and usually implemented by the UNDP
- MVP Rwanda: Millennium Villages Project Rwanda, a locally registered not-for-profit organization operated by the Earth Institute
- UNHSTF: UN Trust Fund for Human Security, through which the Government of Japan's support for MV-1s is channeled
- UNDP: The United Nations Development Programme





Appendix E.

Press Announcement on the UNAIDS Partnership with the Millennium Villages Project

UNAIDS, Millennium Villages join forces to keep children free from HIV in Africa

21 September 2009

UNAIDS and the Millennium Villages Project signed an agreement in New York to strengthen efforts to eliminate mother-to-child transmission of HIV in Africa. The aim of the partnership is to help local governments create “Mother to child transmission-free zones” in 14 ‘Millennium Villages’ across ten African countries.

The Millennium Villages Project, a partnership between The Earth Institute at Columbia University, Millennium Promise, and UNDP, seeks to end poverty by working in rural areas throughout Africa. The new initiative will use the existing infrastructure, human capacity and technical resources in the villages, to help rapidly expand family- and community-centered health services with focus on stopping new HIV infections among children.

UNAIDS Executive Director Michel Sidibé and Prof. Jeffrey Sachs, Director of the Earth Institute, signed the agreement in the presence of business and African leaders. The ceremony was held

under the auspices of President Yoweri Museveni of Uganda and President Abdoulaye Wade of Senegal.

“I salute this partnership to help protect mothers and their children from HIV. This initiative will mobilize resources and generate political will to save young lives, leading to a generation of African children born free of HIV,” said President Wade.

Also speaking at the ceremony were Dr Lydia Mungherera, a Ugandan HIV prevention activist representing the organizations HIV+ and TASO. The Executive Director of UNICEF, Ms Ann M. Veneman, the Minister of State of Mali, Mr. Abou Sow; the South African Minister of Health Dr. Aaron Motsoaledi; and Ambassador Eric Goosby, MD, the United States Global AIDS Coordinator participated in a panel discussion at the event.

Each day 1,200 children under the age of 15 are infected with HIV; 90% of these infections occur in sub-Saharan Africa. According to Mr. Sidibe, “In all of Western Europe there were fewer than 100 mother-to-child transmissions (MTCT) in 2007, whereas in sub-Saharan Africa, there were more than 370,000.”



UNAIDS Executive Director Michel Sidibé (left), Prof. Jeffrey Sachs, Director of the Earth Institute, Dr. John W. McArthur, CEO and Executive Director of Millennium Promise, and H.E. Dr. Abdoulaye Wade, President of Senegal signing the agreement. September 21, 2009, New York.

The top priorities outlined in the memorandum include measures to ensure that women of child bearing age avoid getting infected, those that are infected avoid unwanted pregnancy; increase access to antenatal care services; HIV testing and counselling to expectant mothers; and expanded access to HIV prevention and treatment services for children.

The agreement will bring together the Millennium Village Project's multi-sectoral and science-based development and primary healthcare strategy with UNAIDS' expertise in community and family-centred prevention strategies in order to create 'MTCT-free zones', whose progress will be monitored by both entities.



Executive Director of UNICEF, Ms Ann M. Veneman, South African Minister of Health, Dr. Aaron Motsoaledi, and UNAIDS Executive Director Michel Sidibé.

Credit: UNAIDS/B.Hamilton

"We hope that the creation of 'MTCT-free zones' in the Millennium Villages will serve as a model that can be used throughout Africa whereby communities are engaged, men and young people are active partners, and children are born free from HIV," Mr Sidibé said.

In 2007, there were 2 million children under 15 years living with HIV, up from 1.6 million in 2001 and less than 15% in need of treatment were getting it. In sub-Saharan Africa, only a third of pregnant HIV-positive women received the antiretroviral treatment (ART) to prevent transmitting the infection to their infants, compared with nearly 100% in Western Europe.

Operating in 14 sites in 10 sub-Saharan African countries, the Millennium Villages project has been working with local governments to introduce a model primary health system which will cover approximately 500,000 people.

The Villages work on a model primary health system and include education, nutrition and economic development. The primary health systems include; free services at the point of care; trained professional community health workers; a network of adequately staffed primary clinics; access to a mobile communication network and emergency transport services to facilitate referrals; and a local referral hospital to support second-tier care. The system houses a monitoring and evaluation platform that can readily assess the adequacy, uptake and impact of HIV testing and counseling and family centered HIV prevention services.

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Appendix F.

Press Announcement on the World Food Program Partnership with the Millennium Villages Project



WFP and Millennium Villages Unite to Cut Hunger and Malnutrition

UNITED NATIONS – Highlighting the growing challenge of hunger and malnutrition and the urgent need for solutions and partnerships, the World Food Programme and the Millennium Villages project today announced plans to expand joint action to cut hunger and malnutrition across Africa.

At a time when one in six people worldwide do not have enough to eat, the partners will work to establish “undernourishment-free zones” in Millennium Villages and ensure the poorest have access to sufficient, nutritious food. Currently, there are 80 Millennium Villages in 10 countries.

"Hunger stands at the core of extreme poverty," said Professor Jeffrey Sachs, Director of the Earth Institute at Columbia University and Special Advisor to the UN Secretary General. "Without enough food, people suffer, die of disease, and too often descend into violence and conflict. Without enough food, a farmer cannot feed her family, much less earn an income and look after the children in the household."

"Hunger can be cut"

"We're proud to partner with the World Food Programme, the pre-eminent global institution on the ground fighting hunger in the world's poorest and disaster-hit countries," Sachs said. "The Millennium Villages will carry out the exciting interventions pioneered by WFP, and demonstrate that hunger and under-nutrition can be cut decisively through proven measures in agriculture, school meals, nutritional supplementation, food-for-work programs to build infrastructure, and other powerful WFP tools."

Global recession and continued high commodity prices across much of the developing world increasingly have put food beyond the reach of the poorest and most vulnerable. Climate change and weather-related disasters threaten to further spread misery and deprivation.

"The G8's historic \$20 billion commitment to hunger and food security must be followed by concrete actions necessary to ensure the world produces enough food and all people have enough to eat," said WFP's Executive Director Josette Sheeran.



WFP Executive Director Josette Sheeran, Professor Jeffrey Sachs, Director of the Earth Institute at Columbia University, and John W. McArthur, CEO and Executive Director of Millennium Promise.
Copyright: WFP/Alejandro Lopez Chicheri

"Hungry cannot wait"

"The hungry and malnourished cannot wait," Sheeran added. "We must act now to build the partnerships and take the comprehensive steps necessary to win this fight. No one organization can do it alone, and we will leverage a growing collaboration with the Millennium Villages project to deliver powerful solutions to malnutrition."

Hunger is the underlying cause of death for 3.5 million children worldwide every year. Africa remains the only region where undernourishment and child mortality rates have increased. Working closely governments, civil society, the UN and the private sector, the partnership will apply coordinated, science-based, emerging best-practices in nutrition and food security.

Partnership objectives include ensuring universal school meal coverage for children in primary schools within Millennium Village clusters, finding the best way of meeting the nutritional needs of children affected by HIV/AIDS, tuberculosis and other pandemics, and working with smallholder farmers to boost productivity and incomes.

For more information, please visit:

<http://www.wfp.org/news/news-release/wfp-and-millennium-villages-unite-cut-hunger-and-malnutrition>

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Appendix G. Media: 2009 Coverage of the Millennium Villages Project

Media highlights, including advocacy and outreach to further the Millennium Villages project and the MDGs, during 2009 include the following. For links to these items and more media coverage, please visit these sites:

- www.millenniumpromise.org/nws_newshome.php
- www.millenniumvillages.org/news/index.htm
- www.undp.org/africa/millennium_villages_news.shtml

1. United Nations

“UN Declares 2010 as Year of the Millennium Development Goals”

December 22, 2009

Coming amid mixed progress towards the Goals and new crises that threaten the global effort to halve extreme poverty, the 2010 MDG Summit will be a crucially important opportunity to redouble our efforts to meet the Goals by the agreed deadline of 2015.

(www.un.org/apps/news/story.asp?NewsID=33322&Cr=MDG&Cr1=)

2. IRIN Africa

“Ghana: Cell Phones Cut Maternal Deaths”

December 1, 2009

Cell phones have cut dramatically the number of women dying during childbirth in Amensie village in south-central Ghana, according to local health officials.

(www.irinnews.org/Report.aspx?ReportId=87261)

3. Ottawa Citizen

“Remember Our Promises”

By John McArthur

November 27, 2009

Over the next 12 months, the world will establish new norms and systems that should set the course for a generation. The Canadian government and broader citizenry have a special responsibility to lead.

(www.ottawacitizen.com/business/Remember+promises/2274298/story.html)

4. The Ugandan Observer

“UN Village Experiment Shows Healthy Progress”

By Evelyn Matsamura Kiapi

November 11, 2009

The Millennium Villages project shows how moderate interventions like one reliable ambulance and a free delivery kit are helping to reduce maternal mortality in Uganda.

(http://www.observer.ug/index.php?option=com_content&view=article&id=5959:feature-un-village-experiment-shows-healthy-progress&catid=57:feature&Itemid=69)

5. ITNewsAfrica

"Zain and Ericsson Join Forces to Provide 3.5G in Rural Ghana"

November 4, 2009

Working with the Millennium Villages Project, a collaboration between The Earth Institute at Columbia University, Millennium Promise and the United Nations Development Programme (UNDP), Ericsson and Zain have deployed mobile communications services in the Amansie-West district of the Ashanti region of Ghana.

(<http://www.itnewsafrika.com/?p=3311>)

6. The Ugandan Observer

"Isingiro's MDGs Project Overturns Peasants Fortunes"

By Evelyn Matsamura Kiapi

November 1, 2009

The Ugandan Observer highlights the improved harvests and living conditions for Paul Mugisha and his family as examples of success in the Millennium Village project in Uganda.

(www.observer.ug/index.php?option=com_content&task=view&id=5798&itemid=59)

7. Peace FM Online.com

"Ghana MVP Advisory Board Inaugurated"

October 23, 2009

A 16-member Advisory Board for the Millennium Villages Project (MVP), tasked with the responsibility of ensuring the sustainability of the Project through best practices, to enable it to be replicated in other parts of the country has been inaugurated.

(www.news.peacefmonline.com/social/200910/29786.php)

8. Harbus

"An Interview with Millennium Promise Chairman Jeffrey Walker"

By Joanne Knight, Publisher

October 19, 2009

The Harvard Business School's weekly journal has published an interview with Millennium Promise Chairman Jeffrey Walker about his motivations for joining Millennium Promise and his experience transitioning from the business world to the philanthropic world.

(media.www.harbus.org/media/storage/paper343/news/2009/10/19/News/An.Interview.With.Hbs.EntrepreneurInResidence.Jeff.Walker.mba.81-3806488.shtml)

9. Modern Ghana

"UN Team Visits Millennium Villages...To Assess the Progress of the Three-year-old Project"

By Frank Mensah, Chermo

October 12, 2009

A nine-member team from the United Nations Inter Programme Group (UNIPG), led by Mr. Shigeki Komatsubara, has paid a day's working visit to the UN Millennium Villages Project (MVP) at Manso-Bonsaaso in the Amansie West District of the Ashanti Region, to assess progress of work at the Millennium Villages Cluster, since its inception three and half years ago.

(<http://www.modernghana.com/news/243265/1/un-team-visits-millennium-villages-to-assess-progr.html>)

10. IRIN

"KENYA: Improving PMTCT Services through Millennium Villages"

October 8, 2009

PMTCT efforts in Sauri are set to get a boost from a recent agreement between UNAIDS and the Millennium Villages Project that will see the two organizations join forces to create "mother-to-child transmission-free zones" in the 14 millennium villages across Africa.

(www.plusnews.org/Report.aspx?Reportid=86491)

11. The Daily Monitor

"WFP, Millennium Villages Say to Cut Continent's Hunger, Malnutrition"

September 30, 2009

The World Food Programme and the Millennium Villages project on Monday announced plans to expand joint action to cut hunger and malnutrition across Africa.

(www.allafrica.com/stories/200909300749.html)

12. The Ghanaian-Chronicle

"Opoku-Manu Visits UN Millennium Village Projects"

By Sebastian Freiku

September 21, 2009

The Regional Minister commended the UNMVP for the wonderful work to improve the living standard of the people, and appealed to the Manso-Nkwanta Traditional Council and the District Assembly to support the project, to ensure that it was sustained, through learning skills from the project management, before the tenure of the project is phased out.

(<http://allafrica.com/stories/200909210954.html>)

13. The Rwanda Focus

"Rwanda: Millennium Village Brings Prosperity and Unity"

By Yolande Cole

August 27, 2009

Team leader for the Mayange, Rwanda Millennium Village, Donald Ndahiro, speaks about the community's growth since the project began in Rwanda in 2005 and the opportunities in the years ahead.

(<http://focus.rw/content/view/1021/26/>)

14. The New Focus: Rwanda's First Daily

"Schools Get Energy-friendly Stoves"

By Irene V. Nambi

August 24, 2009

With the aim of environmental conservation, an energy consultant, John Munyansanga, has introduced an improved institutional cooking stoves in over 10 schools in the Bugesera district, Eastern Province.

(<http://allafrica.com/stories/200908250123.html>)

15. Senate Foreign Relations Committee Hearings on Foreign Aid and Development in a New Era

“Reforming U.S. Foreign Assistance for a New Era”

By Jeffrey D. Sachs

July 22, 2009

Sachs reminds us of the link between human suffering and vulnerability to extremist groups as he calls on the Senate Foreign Relations Committee to use the MDGs as a target and enact major reform to the structure of U.S. foreign assistance.

(foreign.senate.gov/testimony/2009/SachsTestimony090722p.pdf)

16. World Vision Report

“Aid to Africa has Brought Significant Change”

July 14, 2009

In a radio interview with World Vision Report, John McArthur discusses the recent major success in combating global poverty and disease and underscores the importance of foreign aid commitments to achieve the Millennium Development Goals.

(www.worldvisionreport.org/Stories/Week-of-July-11-2009/John-McArthur-Millennium-Promise)

17. The Huffington Post

“Meeting the Millennium Development Goals: The Best Investment We Can Make”

By Josh Ruxin

June 11, 2009

The author explains why we must keep our promise to end global poverty, even during the economic recession. He cites Millennium Promise and the Millennium Villages as innovative models for development.

(www.huffingtonpost.com/josh-ruxin/meeting-the-millennium-de_b_214482.html)

18. The Guardian (UK)

“Havens of Hope: The Ugandan Villages on Target to Meet Millennium Development Goals”

By Madeleine Bunting

May 27, 2009

A series of articles in the Guardian explores the successes of the Uganda Millennium Villages and how they compare to the Katine project in the northern part of the country.

(www.guardian.co.uk/katine/2009/may/27/uganda-millennium-village)

19. On Point with Tom Ashbrook (NPR radio program)

“Is Aid Good for Africa?”

April 7, 2009

A discussion of the book “Dead Aid: Why Aid is Not Working and How There is a Better Way for Africa” with Dambisa Moyo, economist and author of the book, and Millennium Promise CEO and Executive Director John McArthur.

(www.onpointradio.org/2009/04/is-aid-good-for-africa)

20. CNN

"Jeffrey Sachs Commentary for CNN: 3 Billion Poor People Need World's Help"

March 20, 2009

In a commentary for CNN, Jeffrey Sachs discusses the G20 meeting in London, calling on world leaders to combine stimulus with economic development and sustainability to ensure all of the world benefits from a global recovery plan.

(www.cnn.com/2009/US/03/20/sachs.global.poverty/index.html)

21. CBC Radio

"John McArthur on the Successes of Foreign Aid"

March 11, 2009

John McArthur talks with CBC Radio One about the global successes made possible by foreign aid support and the need for rich countries to keep their commitments.

(podcast.cbc.ca/mp3/dispatchesdonotusepl_20090309_12926.mp3)

22. Ericsson (Press Release)

"Ericsson, Zain Power Millennium Village Site by Wind, Sun"

February 12, 2009

As part of the Millennium Villages project, Ericsson and Zain have built a green-powered site in Dertu, a remote village in northeastern Kenya.

(<http://www.ericsson.com/thecompany/press/releases/2009/02/1289656>)

23. Daily Nation (Kenya)

"Kenya Project to Star in MTV's Obama Inauguration Special"

By Kevin J. Kelley

January 13, 2009

MTV's Obama Inauguration special will highlight a student volunteer's role in bringing Internet service to Omino Primary School in the Lihanda, Kenya Millennium Village. From the MTV Newsroom: "The reason we're here is to get hands-on to help with and document the amazing work a fantastic organization called Millennium Promise is doing here in Kenya."

(www.nation.co.ke/InDepth/-/490068/513692/-/iOutmh/-/index.html)

To join the global coalition to end extreme poverty, hunger and preventable disease, please also join the Millennium Villages project's social network:

- Twitter
 - o <http://twitter.com/endofpoverty>
 - o <http://twitter.com/earthinstitute>
- Facebook
 - o <http://www.facebook.com/millenniumpromise>
 - o <http://www.facebook.com/home.php?#!/group.php?gid=2391704755&ref=ts>

Appendix H. Shower of Aid Brings Flood of Progress

New York Times

March 8, 2010

<http://www.nytimes.com/2010/03/09/world/africa/09kenya.html>

Shower of Aid Brings Flood of Progress

By JEFFREY GETTLEMAN

SAURI, Kenya — In the past five years, life in this bushy little patch of western Kenya has improved dramatically.

Agricultural yields have doubled; child mortality has dropped by 30 percent; school attendance has shot up and so have test scores, putting one local school second in the area, when it used to be ranked 17th; and cellphone ownership (a telltale sign of prosperity in rural Africa) has increased fourfold.

There is a palpable can-do spirit that infuses the muddy lanes and family compounds walled off by the fruity-smelling lantana bushes. People who have grown bananas for generations are learning to breed catfish, and women who used to be terrified of bees are now lulling them to sleep with smoke and harvesting the honey.

“I used to think, African killer bees, no way,” said Judith Onyango, one of the new honey makers. But now, she added, with visible pride, “I’m an apiarist.”

Sauri was the first of what are now more than 80 Millennium Villages across Africa, a showcase project that was the dream child of Jeffrey D. Sachs, the Harvard-trained, Columbia University economist who runs with an A-list crowd: Bono, both Bills (Clinton and Gates), George Soros, Kofi Annan, Ban Ki-moon and others.

His intent was to show that tightly focused, technology-based and relatively straightforward programs on a number of fronts simultaneously — health care, education, job training — could rapidly lift people out of poverty.

In Sauri, at least, it seems to be working. Some of the goals were literally low-hanging fruit, like teaching banana farmers to rotate their crops. Other programs were more sophisticated, like the battle against malaria, which employs cutting-edge mobile technology against a disease that kills more than one million children each year.

The other day, a community health team in Sauri stooped through the doorway of a home of several sick children, said hello to Grandma and got to work. Within minutes, a health worker had pricked a child, sent a text message with the blood results by cellphone to a computer server overseen by a man named Dixon in a town about an hour away and gotten back these instructions: “Child 81665 OKOTH Patrick m/16m has MALARIA. Please provide 1 tab of Coartem (Act) twice a day for three days.”

These small miracles are happening every day now in Sauri, population 65,000. But the question for Mr. Sachs and his team remains: Is this progress, in development-speak, scalable? In other words, is there a

way to take a place like this one and magnify the results by 1,000 times or 10,000 times and wipe out poverty across the developing world?

Hundreds of millions of dollars may hinge on the answer, because African nations and Western donors are closely following the data emerging from the Millennium Villages. Mr. Sachs and his team will publish their midterm review later this year, though influential donors like Mr. Soros are already betting on Mr. Sachs to the tune of several million dollars each year.

Colleagues say Mr. Sachs, 55, has single-handedly done more for foreign aid than just about anybody in recent years. "We need Jeff," said Nancy Birdsall, president of the Center for Global Development, based in Washington. "His combination of passion and analytic acuity has been really important for development."

But there are Sachs detractors. One of the most dogged is William Easterly, a former World Bank economist and author of "The White Man's Burden," a book that critiques aid projects.

Mr. Easterly argues that the Millennium approach would not work on a bigger scale because if expanded, "it immediately runs into the problems we've all been talking about: corruption, bad leadership, ethnic politics."

He said, "Sachs is essentially trying to create an island of success in a sea of failure, and maybe he's done that, but it doesn't address the sea of failure."

Mr. Easterly and others have criticized Mr. Sachs as not paying enough attention to bigger-picture issues like governance and corruption, which have stymied some of the best-intentioned and best-financed aid projects.

For example, one can easily picture what would happen in Kenya, where corruption is essentially a national pastime, if there were a free, donor-supported fertilizer program for the entire nation. The fertilizer would very likely never reach its intended target and would disappear like the national grain reserves that were plundered during a famine in 2008, or the billions of dollars of foreign aid that have ended up in the pockets of Kenyan politicians, according to numerous reports by human rights groups and financial auditors.

Mr. Sachs says he is the first to admit that he cannot do it all.

In Kenya, he says, to eradicate poverty nationwide, the country's leaders would need to improve infrastructure and urban industries substantially.

"What we're focusing on," he said, "is about one-third of the problem."

Another criticism is that Mr. Sachs is not evaluating his programs in a rigorous, scientific way. Many aid experts have suggested that the only way to really know if the Millennium Villages are worth the expense (around \$110 per capita, per year) is to collect data from similar "control" villages that are receiving no help.

“No one would dream of ‘scaling up’ the use of a new pharmaceutical in the U.S. without rigorous evidence comparing people who got the medicine to people who did not,” said Michael Clemens, a research fellow at the Center for Global Development.

But Mr. Sachs says that “Millennium Villages don’t advance the way that one tests a new pill.”

Beyond that, he does not like the idea of going into a village, subjecting poor people to a battery of questions and then leaving them empty-handed, though other aid specialists have said that studying poor people without giving them anything in return is done all the time.

“It pains me to be in a village that doesn’t have bed nets” to protect against malaria-carrying mosquitoes, he said, adding that some comparison studies were under way.

It also pains him how out of touch the American public seems.

“The mood in the country right now is very anti-aid, and they don’t connect the dots very well,” he said, before launching into a discussion about the links between poverty and terrorism.

A few years ago, Mr. Sachs said, he came back from Yemen, which has recently become a haven for Al Qaeda, and spoke to American officials about how the country was “broken by hunger, water-stress, disease and poverty” and “sliding closer to the cliff.”

“I told our government all about this,” he said. “But all I got back was a blank stare.”

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Appendix I. Overview of the Millennium Development Goals (MDGs)

The Millennium Development Goals are the world's goals. They have spurred an unprecedented global agenda for partnership since they were established 10 years ago. Bill Gates has called them "the best idea for focusing the world on fighting global poverty that [he has] ever seen." They have seen remarkable progress, including a 74 percent reduction in measles deaths, four million people on life-saving AIDS treatment and more than 30 million additional children in primary school in Africa alone. The success stories each have major lessons for scale up, including sound technical interventions, institutional mechanisms to deliver services, adequate finance to reach scale and a clear focus on metrics. Ten years ago, most of the MDGs were widely considered unachievable.

GOAL 1: Eradicate Extreme Hunger and Poverty

- Reduce by half the proportion of people whose income is less than \$1 a day
- Achieve full and productive employment and decent work for all, including women and young people
- Reduce by half the proportion of people who suffer from hunger

GOAL 2: Achieve Universal Primary Education

- Ensure that all boys and girls complete a full course of primary schooling

GOAL 3: Promote Gender Equality and Empower Women

- Eliminate gender disparity in primary and secondary education preferably by 2005, and in all levels of education no later than 2015.

GOAL 4: Reduce Child Mortality

- Reduce by two thirds the mortality of children under five

GOAL 5: Improve Maternal Health

- Reduce maternal mortality by three quarters
- Achieve universal access to reproductive health

GOAL 6: Combat HIV/AIDS, Malaria and other diseases

- Halt and reverse the spread of HIV/AIDS
- Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it
- Halt and reverse the incidence of malaria and other major diseases

GOAL 7: Ensure Environmental Sustainability

- Integrate principles of sustainable development into country policies and programmes; reverse the loss of environmental resources
- Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss
- Halve the proportion of people without access to safe drinking water and basic sanitation
- Improve the lives of at least 100 million slum dwellers by 2020

GOAL 8: Develop a Global Partnership for Development

- Develop further an open, rule-based, predictable, non-discriminatory trading and financial system
- Address special needs of the least developed countries, landlocked countries and small island developing States
- Deal comprehensively with developing countries' debt

- In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
- In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies

The History of the MDGs

At the Millennium Summit in September 2000, the largest gathering of world leaders in history adopted the UN Millennium Declaration, committing their nations to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets, with a deadline of 2015, which have become known as the Millennium Development Goals (MDGs). The MDGs are the world's goals, and are expressly dedicated to advancing the wellbeing of the billion poorest and most marginalized people on the planet. They have spurred unprecedented success in forging a common global agenda for partnership. In his 2008 address to the United Nations, Bill Gates called them "the best idea for focusing the world on fighting global poverty that [he has] ever seen."

If achieved, the MDGs would free 500 million people from extreme poverty, ensure that 300 million people no longer suffer from hunger, help 30 million more children reach their fifth birthday, keep hundreds of millions of girls in school, and provide access for 650 million people to basic sanitation, among other achievements. To meet these ambitious yet feasible targets, in 2002, the UN Secretary-General, Kofi Annan, commissioned the UN Millennium Project, an independent advisory body of over 300 policy, academic, and private sector experts to produce a concrete "roadmap" to outline the necessary steps to achieve the Goals.

In fulfillment of its mandate, the Millennium Project presented its final report to the Secretary-General in 2005, outlining in depth how the MDGs can be achieved through simple best practices and current technologies applied within the boundaries of the world's available financial resources. Its recommendations include specific MDG-based, costed, and science-based sector interventions that are underscored by investments in strengthened governance, human resources, and capacity development.

That same year, world leaders endorsed the Project's key recommendations at the UN World Summit, aligning international policy frameworks with the ambition and scale required by the Goals and the Millennium Project's recommendations. Crucially, developed-country leaders also made high-profile financial commitments to underpin the investments required to achieve the MDGs. As a result, the vision, strategic plan, political will, and financial commitments necessary to achieve the MDGs aligned for the first time in history, creating an unprecedented opportunity to end extreme poverty.