

THE MILLENNIUM VILLAGES PROJECT

Annual Report

January 1 – December 31, 2008

THE EARTH INSTITUTE
COLUMBIA UNIVERSITY

Millennium
 **Promise**
Extreme Poverty Ends Here



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OVERVIEW

The Millennium Villages Project (MVP)—implemented in partnership between the Earth Institute at Columbia University, Millennium Promise, and the United Nations Development Programme (UNDP)—aims to demonstrate that even the poorest and most remote communities in rural sub-Saharan Africa can implement and manage the range of interventions required to achieve the Millennium Development Goals (MDGs). By demonstrating “what success looks like,” the MVP seeks to contribute to global accountability—with requisite urgency—by drawing attention to the feasibility of evidence-based, high-impact, integrated approaches to supporting community-level achievement of the MDGs, and moreover, by mobilizing greater support from diverse stakeholders for targeted investments to address extreme poverty.

The MVP partners with communities to create and facilitate sustainable, community-led action plans to help achieve the MDGs that are context-specific and tailored to meet communities’ priorities. Simple solutions, such as the use of high-yield seeds, fertilizers, and anti-malarial bed nets, combined with infrastructure improvements of key public facilities, like clinic and schools, and capacity building at the local level are effectively combating extreme poverty and nourishing communities into a new age of health and opportunity. The project also leverages new advances in science and technology to help empower communities and maximize impact on the ground.

By the end of 2008, the MVP had completed two and a half years of work—reaching the halfway mark in its first five years of operations—and served over 400,000 people in 14 sites in ten countries. The 14 locations are: Koraro, Ethiopia; Bonsaaso, Ghana; Dertu, Kenya; Sauri, Kenya; Gumulira, Malawi; Mwandama, Malawi; Tiby, Mali; Toya, Mali; Ikaram, Nigeria; Pampaida, Nigeria; Mayange, Rwanda; Potou, Senegal; Mbola, Tanzania; and, Ruhiira, Uganda (see Appendix A for a map of Millennium Village sites). This annual report describes progress made and challenges faced during 2008.

The project achieved a major benchmark in November 2008 when the Overseas Development Institute (ODI), a leading London-based think tank, conducted an external review of the MVP. The review’s final report finds that “the MVP has recorded remarkable achievements on the ground” and that it “successfully demonstrates that it is possible to achieve rural development outcomes across a whole range of sectors, even in remote rural villages, with a committed team, the necessary political will and sufficient donor funding, that is well within the boundaries of international donor commitments” (p. 15). Consequently, the report calls on donors to support African countries that wish to join or scale up the project:

When governments want to emulate the MVP by making increased investments in basic development interventions at the village level, donors should support them. [...] We advocate that, in those sites where governments have expressed their intention to introduce or scale up MVP-type investments, development partners support them with additional finance. Such efforts should be located within national development strategies, such as PRSPs and national development plans, and indeed should be key components of them. (ODI, pp. 52–53)

Summary of Progress to Date

In its first 18 months, the MVP's five main objectives were to: (i) Provide universal access and free distribution of long-lasting, insecticide treated bed nets to fight malaria; (ii) Achieve significant increases in staple crop yields; (iii) Ensure universal access to functioning health clinics; (iv) Increase primary school enrollments; and (v) Provide community access to improved and year-round water for consumption. In addition, the MVP emphasized cross-cutting interventions focused on addressing gender inequality; on community mobilization, participation and leadership; and on infrastructure for transport, energy, and information and communications technologies (ICT).

In 2008, the MVP focused on sustaining and building on progress toward these objectives as well as concentrating on six additional priorities: (i) Increase crop diversification; (ii) Begin transitioning farmers from subsidized inputs to credit; (iii) Implement a universal school meals program; (iv) Accelerate the design and implementation of critically needed infrastructure projects; (v) Identify and launch business development opportunities; and (vi) Build a network of partners for the MVP and achieving the MDGs.

The achievements and challenges for these six key priorities include:

Increasing Crop Diversification. Traditionally, farmers in the Millennium Villages focus on producing a single staple crop. In its first years, the MVP prioritized dramatically increasing the production of these crops through subsidized fertilizers, improved seeds, and intensive training in farming techniques. In 2008, increased agricultural yields were sustained, and the project increased its focus on crop diversification to improve both income and nutritional outcomes for farmers and their families. For example, cowpeas, chickpeas, and soybeans were grown with success in Bonsaaso, Ghana and Ikaram, Nigeria on a subsidized basis. In Bonsaaso, onion production tripled in 2008, resulting in substantial profits for farmers. Crop diversification strategies included livestock in some sites, such as Dertu, Kenya, which is a semi-nomadic/pastoral community. Another example is Mayange, Rwanda, where erratic rains call for an alternative approach to traditional rain-fed agriculture.

Transitioning Farmers from Subsidized Inputs to Credit. In 2008, the MVP began to transition farmers from subsidies to credit to purchase agricultural inputs. The goal is to sustain the improved crop yields through market-based mechanisms in countries where limited national subsidy programs exist to support farmers. Furthermore, in 2008, the MVP faced significant agricultural budget constraints, exacerbated by the spike in global fertilizer prices and decreased value of the dollar, which made this transition imperative. In all sites, the MVP worked to increase farmers' access to microcredit through partnerships with local commercial banks or microfinance institutions. The project also pursued large-scale pilot credit schemes in three sites: Sauri, Kenya; Tiby, Mali; and Mbola, Tanzania. The overall picture indicates that national smallholder input support programs, such as the program in Malawi, remain the most fundamental positive incentive to boosting smallholder production, and that the transition to credit needs to be pursued in a growth-oriented manner as an essential complement to those programs.

- In **Sauri, Kenya**, the first large-scale MVP mass transition to credit was piloted in January 2008, in time for the planting season, amid the devastating post-election violence in the country. During this period of turmoil, MVP was, remarkably, one of the only projects able to facilitate the delivery of agricultural inputs to the Rift Valley region of Kenya. It was also remarkable that the progress in the Sauri cluster was resilient to the general upheaval, despite its proximity to the epicenter of much of the civil disturbance. Nonetheless, the unrest did undermine the opportunity for community sensitization in Sauri prior to the loan distribution, and the task of introducing a universal access credit system to more than 10,000 households (alongside ongoing subsidies for the most indigent households) proved significant. In late 2008, the MVP worked to improve the credit scheme for the 2009 planting season and launched a partnership with Equity Bank, a Kenyan commercial bank, and the Alliance for a Green Revolution in Africa (AGRA).
- In **Tiby, Mali**, the MVP continued a successful transition program from input subsidies to credit through a revolving capital program where the ratio of subsidy to input is reduced overtime. In 2008, over 90 percent of farmers received a 50 percent subsidy to support the fertilizer requirement for rice, millet, and sorghum. The remaining 50 percent of the input cost was loaned to the farmers for repayment after harvest. Approximately 95 percent of farmers have repaid their loans. This scheme is scheduled to continue in 2009, with the subsidy reducing to 25 percent of direct input cost requirements. The initiative is bolstered by a national input support program and MVP support for administrative costs.
- In **Mbola, Tanzania**, all farmers received their agricultural inputs on credit for the November 2008 planting season. The loans combined inputs for maize, a staple crop, with sunflower, a cash crop, to help maximize food security and income-generation opportunities. Farmers, who were organized into 60-member groups, will be responsible for re-paying their credit after the harvest. The MVP is negotiating with regional mills for the large-scale purchase of the sunflowers.

Implementing a Universal School Meals Program. The school meals program was introduced in select sites in 2006 and 2007 and expanded to reach all sites in 2008, except in Ikaram, Nigeria, where community interest in this program is limited. The program improves food security and increases enrollment in primary schools by providing a homegrown, daily, nutritious meal for children. By the end of 2008, approximately 80,000 children across the Millennium Villages received school meals on a regular basis. In most sites, school meals are made possible through contributions from the community's farmers in return for subsidized agricultural inputs. In several sites, the World Food Programme (WFP) is an implementing partner.

As the transition from subsidies to credit continues, the MVP must maintain community contributions to the program. The MVP is working closely with communities to address this while also pursuing activities such as school-owned and operated gardens. The MVP also continues to advocate at national and international levels to include MVP schools in national and partner school meals programs.

Accelerating the Design Process and Implementation of Key Infrastructure Projects. In 2008, the MVP focused on enhancing coordination with local governments and partners to improve

joint planning of infrastructure projects—roads and transportation, energy/electrification, and information and communications technologies (ICT)—and ensuring their sustainability. For roads and transport, the MVP prioritized road rehabilitation, particularly by upgrading road surfaces, installing culverts, and building small bridges over water crossings. The project worked closely with communities on these projects and organized training sessions on labor-based road work techniques to improve communities' capacity for contributing to construction and maintenance. For energy and electricity, where possible, the MVP worked to facilitate the connection of sites and key facilities to the national electric grid. Where this is not possible, the MVP worked to provide alternative sources of energy, primarily through solar power.

In ICT, mobile phone and Internet connectivity were established through a partnership with Ericsson in Dertu, Kenya; Mayange, Rwanda; and Ruhiira, Uganda. Several other sites, such as Sauri, Kenya and Ikaram, Nigeria, are already connected to mobile phone networks and the Internet. This connectivity has allowed the MVP to install computers in schools, create mobile health applications, and launch small businesses around the use of cell phones. Connectivity will be extended to many more sites in 2009.

Identifying and Launching Business Development Opportunities. In 2008, the MVP initiated an intensive investigation to identify viable agricultural production and agro-business development opportunities across the Millennium Villages, including existing businesses that can be enhanced and new businesses that can be launched. Business opportunities are evaluated in terms of their feasibility and potential return for the community. Given the rural, agricultural nature of the Millennium Villages, most business opportunities are agro-business initiatives. The three top business development prospects identified in 2008 concentrate on honey in Ethiopia, Shea butter in Mali, and sunflowers in Tanzania. In 2009, the MVP aims to launch three to five additional business development initiatives.

Building a Global Network of Key Partners. In 2008, the MVP continued to build a diverse, global network of partners to support the Millennium Villages and the MDGs. This network of partners was brought together in New York for the first time at Millennium Promise's First Annual Partners Meeting on September 26. This event included a keynote address from President Bingu wa Mutharika of Malawi, along with presentations of partners' contributions and announcements of new commitments to the Millennium Villages and MDGs.

Partnerships with governments—at the local, regional, and national levels—are critical to the project's success and long-term sustainability. Within Millennium Village-participating countries, highlights of MVP-government collaboration in 2008 are included in the report section on partnerships.

Donor government partnerships are also critical to the scalability of the Millennium Villages approach. Indeed, support from the government of Japan, through the United Nations Trust Fund for Human Security, helped make possible the first expansion of Millennium Village sites in 2006. In 2008, excellent progress continued to be made in engaging key donor nations to support MVP's expansion. The Republic of Korea will support four existing Millennium Village sites in the Mbola, Tanzania and Ruhiira, Uganda clusters. This support built on its recent partnership with UNDP to implement a Millennium Village in Madagascar. Meanwhile other UNDP-

managed sites were launched in Liberia through the financial support of the Government of Norway. In May 2008, the Government of Japan announced its commitment to scaling-up the MVP to Benin, Cameroon, Madagascar, and Mozambique (see Appendix C for further information).

In addition to government partners, the MVP has mobilized support from the private sector, non-governmental organizations, and multilateral organizations. (For more information about many of the MVP's key partners, please visit <http://www.millenniumpromise.org>).

In 2009, MVP priority intervention areas include: (i) Completing key infrastructure projects; (ii) Improving the quality of health care at the clinic and household levels, partly by developing a cadre of community health workers; (iii) Further transitioning sites from project input subsidies to national subsidies and local credit for agricultural inputs; (iv) Continuing crop diversification; and (v) Launching business development initiatives.

An additional strategic priority in 2009 will be to continue enhancing the scaling and sustainability of the project. A recent concept note on related issues is presented in Appendix F. At the community level, the MVP will work to enhance the capacity of the communities and appropriate governmental bodies to assume greater ownership and management of MVP activities. The MVP will work to scale up the holistic MVP-approach to the national levels and continue the scale up of successful, sector-specific interventions to the regional and national levels. For example, the Government of Mali presented its plan at a donor roundtable in June 2008 to scale up the MVP-approach to 166 of its most vulnerable communities covering approximately two million people. This scale-up initiative is being supported by a joint taskforce including the Earth Institute, FAO, Millennium Promise, the MDG Center for East and Central Africa, UNCDF, UNDP, UNICEF, and UNV. The Government of Nigeria is also taking lessons learned from the MVP to inform a national MDG scale-up effort in 111 local government administrations, reaching approximately 20 million people. And in Uganda, the Ministry of Health expressed strong interest in scaling up across the country the successful midwife program launched in the Millennium Village site of Ruhira.

At the international level, the MVP will continue its effort to incorporate lessons learned and best practices into global policies on poverty reduction strategies. Furthermore, the MVP also aims to significantly increase public mobilization around the MDGs in 2009 as well building on its successful track record of engaging international and African media on these issues (see Appendix E for media coverage of the MVP and its implementing partners). The goal of this multi-level engagement strategy is to use the MVP as a platform for mobilizing greater investments in proven, cross-sector community-managed intervention packages to help achieve the MDGs in rural Africa.

SECTOR-BY-SECTOR REVIEW

Significant program advances were made in each sector of the Millennium Villages Project in 2008, as the project focused on consolidating the achievements from the first 18 months of operations and moving forward on initiatives aimed at enhancing the project's sustainability and scaling prospects. In agriculture, the MVP concentrated on increasing staple food production, introducing crop diversification strategies, and establishing input credit schemes. In health, critical progress was made in increasing access to healthcare services, testing and treating critical diseases, and increasing the capacity of community healthcare systems. Impressive gains were also realized in community development and governance (e.g. participatory planning, monitoring and evaluation); education (e.g. universal school meal coverage); environment (e.g. soil fertility management and erosion control); infrastructure development (e.g. roads and transport; energy and electricity; and information and communications technologies); and water and sanitation (e.g. irrigation initiatives).

The following sections describe key sector-by-sector developments in 2008.

AGRICULTURE



A farmer in Kasungu, Malawi. The Millennium Villages Project has dramatically improved maize production in many parts of Africa.

At the beginning of the MVP's operations, work in the agriculture sector emphasized alleviating hunger and boosting food security by increasing the production of staple food crops. This was achieved through the provision of subsidized fertilizers and improved seeds combined with intensive field based training of farmers. While food production remains a priority, in 2008, there was a greater emphasis on supporting the commercialization of agriculture. This proceeds alongside the project leadership's international efforts with the UN and other senior global policy makers to launch a global coordination mechanism to finance national input support programs for smallholder farmers. Other related activities included a focus on diversification for quality nutrition and the empowerment of women in agriculture.

Sector Achievements

Increased Production of Staple Food Crops. Food production has more than doubled in villages covered by the MVP compared to neighboring villages. Average maize yields for 2008 in Mwandama, Malawi were 2.7 times higher on farms plots that received both fertilizers and improved seeds while yields were over five times higher in intervention plots in Mbola,

Tanzania. The harvest in Mbola was a source of particular joy among villagers, with many elders citing it as the best in memory. Farmer contributions from the food surplus led to a major expansion of the school meals program. Meanwhile, yields of major crops in non-maize growing villages also increased; onion yields in Potou, Senegal tripled, resulting in large profits for farmers.

The major challenges for crop production in 2008 were: (i) Erratic rainfall in Mayange, Rwanda and Koraro, Ethiopia, where low yields were consequently experienced in parts of those sites; (ii) Escalating fertilizer prices, which more than doubled during 2008, further squeezing the MVP agriculture budgets and constraining the use of fertilizers; and (iii) Shortages of sufficient, appropriate storage facilities led to some post-harvest losses.

To overcome the risk of erratic rains, the MVP agriculture team is linking with irrigation specialists to explore possibilities of introducing cost-effective water harvesting and irrigation technologies. Agriculture coordinators from the MVP sites attended a one-month training course on irrigation. Household grain drying cribs have been promoted for increased and improved storage, and community cereal banks were constructed in Mwandama, Malawi; Ruhira, Uganda; and Bonsaaso, Ghana. A study was conducted in Mwandama and Sauri, Kenya to identify post-harvest storage losses. Initial steps have also been taken to link the project with institutes that have expertise in post-harvest and mycotoxin management.

Agriculture for Income Generation. Two particular areas were emphasized in 2008: (i) Market linkages for income generation from surplus staple crops. In Ruhira, Uganda, for example, farmers were linked to banana markets in Kampala, which has almost doubled the price farmers have received for their banana crop. (ii) Crop diversification for income generation. In Mbola, Tanzania, sunflowers, which are a high value crop, were grown by over 2,000 households and sold for high prices. This year, sunflower has been promoted to all households, and markets have been identified for the crop. In Potou, Senegal, onions have also been a large success. The biggest challenge for all sites as they transition to markets is to maintain a continuous production of sufficient quantity and quality for markets.



Onion harvest in Potou, Senegal

Agriculture for Nutrition. In all villages, highly nutritious crops have been promoted or introduced, including vegetables and fruits, protein rich legumes (cowpea, chickpea), cereals (quality protein maize), and orange-flesh sweet potatoes. The major challenges in promoting nutritious crops for home consumption are cultural practices and beliefs that constrain adoption of nutritious crops, such as traditional vegetables, and the lack of balance between income generation and home consumption. As most nutritious crops are also income generating, there is a tendency to sell them rather to consume them at home. Awareness campaigns and training on

home gardens for good nutrition are conducted to help overcome this barrier. The introduction of livestock, mainly poultry and small ruminants, is also increasing nutrition quality and generating income. This has not reached a large scale yet and requires training for the care and maintenance of livestock.

Transition from Input Subsidies to Loans. In previous years, fertilizers and improved seeds were subsidized by the MVP; in 2008, however, the emphasis was on decreasing subsidies and the transition to credit. To this end, the project piloted agricultural finance programs in Sauri, Kenya; Tiby, Mali; and Mbola, Tanzania. It also worked to facilitate the linkage of farmers to financial institutions. The major challenges in the transition to loans have been low value to cost ratios, exacerbated by dramatic fertilizer cost increases in recent years, and the lack of an established system to provide agricultural loans in rural African settings. The experience in the Millennium Villages indicates that national price subsidies remain the most fundamental positive incentive to boosting smallholder production and that the transition to credit must be pursued as an essential complement in a context more focused on proportionate growth (see Section V for further information about agricultural finance).

Women's Empowerment. Women have been supported for income-generating crops, such as vegetables and hibiscus for bissap production in Potou, Senegal, and soybean and rice in Pampaida, Nigeria. The major challenge is access to land by women.

Project priorities for the agriculture sector in 2009 include: (i) Crop diversification for income generation and nutrition; (ii) Promotion of organic inputs to complement fertilizers; (iii) Facilitation of access to fertilizers and seeds through loans; and (iv) Improved post-harvest management.

HEALTH

2008 was an important year for strengthening service delivery and improving health-seeking behavior. Building on the foundation of the MVP's infrastructure development efforts, human resource recruitment, and good progress on removing financial barriers to access across the majority of the villages, activities in the health sector were targeted at: (i) Increasing utilization of primary healthcare services with a focus on strengthening of maternal health services, including antenatal care, facility deliveries, and family planning; (ii) Firmly establishing diagnosis and treatment of HIV/AIDS and tuberculosis; and (iii) Expanding and improving prevention and basic treatment services at the household level. Activities that were already well-established in 2007, including malaria prevention and treatment, continued at the same intensity. For those sites where 2007 goals were not fully complete, these goals were re-prioritized alongside those targets goals enumerated above.

Sector Achievements

Increased Access to Service Delivery. By the end of 2008, 20 of the 31 planned new clinics in the MVP sites had been completed, bringing the total number to 51. In addition, all functioning

clinics are staffed by at least a nurse or midwife. Over half of these facilities have at least three nurses, and 10 percent have a clinical officer (equivalent of nurse practitioner) or physician on staff. The greater number of access points for service delivery and increased human resources in the sites ensured that services reached more people than in previous years. The number of outpatient visits was over 300,000, a 25 percent increase since 2007.

At the referral facility level, MVP is collaborating with the closest district hospitals to provide quality secondary-care services, including emergency obstetric care (EmOC). In addition, every site now has one or more vehicles allocated for emergencies and referral for transportation between homes and clinics and clinics and the referral facility.



Community health workers in Mbola, Tanzania

Maternal Health Services. Efforts to reduce maternal mortality have focused on getting women to seek care early and to attend at least four antenatal care visits before delivery. In addition, EmOC practices have been strengthened in the clinics and referral hospitals, and an emphasis has been placed on encouraging women to deliver in health facilities (attended by a skilled birth attendant). In regard to behavior change for seeking care early and often during pregnancy, community health workers (CHWs)—who serve as the interface between the health system and households—identify pregnant women during routine visits to the home and

refer them to the clinic. In addition to improved geographic access and better services, this direct

engagement has improved health seeking behavior. Whereas at the start of the project only 35–40 percent of women received antenatal care, with the first visit occurring most often in the third trimester, 85 percent of women now attend antenatal care clinics, starting, at the latest, in the second trimester.

Improvements in maternal health indicators have also included a significant increase in the proportion of deliveries at health facilities—which are attended by skilled birth attendants. The percentage of skilled attended deliveries across the sites was below 30 percent at baseline—and was even as low as 8 percent in Ruhira, Uganda. Preliminary estimates suggest that the average figure has nearly doubled by the end of 2008. And in Mayange, Rwanda, almost all deliveries take place in a supervised institutional setting.

Due to the small populations of the Millennium Villages in relation to the number of live births that must be observed to report accurately on maternal mortality, this indicator cannot be offered to demonstrate success. It is still significant to note, however, that the number of women dying each year from pregnancy-related complications continues to fall. In two sites, Bonsaaso, Ghana

and Mayange, Rwanda, no maternal deaths have been observed for two years. In others, including Ikaram, Nigeria and Toya, Mali, there were no maternal deaths in 2008, with most of the remaining sites observing no more than two deaths.

HIV & Tuberculosis (TB) Diagnosis and Treatment. Through the Global Fund and the US AIDS relief program, most sub-Saharan African countries now fully subsidize treatment and diagnosis of HIV/AIDS and TB. Due to the remoteness of the MV sites, however, none had a geographically accessible service point prior to the MVP's operations. Drugs to treat TB are now available in all sites, and lab technicians have been trained to conduct sputum tests. Where labs are not available, a system is in place to transport the sputum to the closest lab facility, with the results being reported back to the MVP clinic. Patients, therefore, no longer must travel long distances for either diagnosis or treatment. As a result, the case detection rate has improved from 36 percent to 50 percent on average, and the treatment success rate has improved from 77 percent to 85 percent on average. The site that has seen the greatest gain in its case detection rate is Bonaaso, Ghana, with an increase from 19 percent to 79 percent. Also, more than half of the Millennium Village sites have reached higher treatment success rates than the national average and have reached or exceeded WHO targets.

Testing and treatment services for HIV/AIDS have been strengthened. Prevention of mother to child transmission (PMTCT) services are now fully available in six sites. Among the non-pregnant population in the villages, over 3,500 people were placed on ARV treatment, with over 90 percent of them residing in Sauri, Kenya and Mwandama, Malawi, where the HIV/AIDS rates are the highest.

Household Services. Over 700 Community Health Workers (CHWs) are now providing prevention education and basic treatment services at the household level. CHWs have been allowed to carry Oral Rehydration Salts (ORS), condoms, and first-aid tools since the MVP's inception. In 2008, however, a significant breakthrough was made in receiving approval from Ministries of Health in eight Millennium Village countries to allow CHWs to carry Artemisinin Combination Therapy (ACT) to treat malaria. This policy has further improved access to this life-saving therapy for residents of the Millennium Villages. Essential to the success of this policy is capacity building and monitoring CHWs' activities, and a number of initiatives commenced in mid-2008 in this respect. A team of computer programmers and public health specialists are developing a cell-phone based CHW-support tool, called CommCare, which will assist CHWs in tracking visits to households and recording key information. It will also provide modules on key intervention areas. Parallel to this process, a comprehensive CHW program is being developed, consisting of a manual as well as training, management, supervision, and monitoring tools. Both initiatives are in the piloting phase and are expected to be ready for roll-out in early 2009.

Innovation. Although not originally identified as 2008 priority, a partnership with Ericsson and continued support from a private foundation has facilitated the upgrading of patient-level data collection and emergency response. Mobile-phone connectivity with enhanced Internet access is being provided to all sites, and a range of digital health interventions are currently being developed, tested, and implemented. A toll-free emergency number access has been piloted in Mayange, Rwanda, and the use of cell phones as a support tool and data collection tool for

CHWs is being field tested in Ruhira, Uganda. Electronic medical records have been established in Kenya, Rwanda, and Uganda, and vital statistics are now collected electronically in several other sites. The availability of ambulances or vehicles for transporting patients coupled with improved connectivity has strengthened the referral and emergency response system. Patients are now able to access the emergency response system to be transported either to the clinic or the nearest referral facility. At least 2,500 people accessed this service in 2008.

Policy Development. As mentioned above, a number of MOHs have been advised to allow the use of ACTs by CHWs. Although this is not yet widespread across all countries where the MVPs are located, allowing the project to pilot this life-saving initiative will provide the evidence necessary to drive policy change. In Mali, the National Malaria Control program has adopted universal, free bed net distribution as a national policy and is preparing to roll it out starting in 2010. The MVP in Tiby, Mali, contributed to this shift, as the government's document on this policy cites it as a successful case study.

The health sector's priorities for the coming year include the following:

Further Infrastructure Development. Enhancement of clinics with essential equipment, electricity, and access to clean water is a key priority.

Strengthen and Upgrade CHW Program to Improve Household-based Health Services. As part of a new program called Community Based Management for Health, the MVP is establishing a comprehensive CHW program with a supervisory structure, re-training existing and newly hired CHWs, providing tools and supplies, and implementing basic data collection system at the household level. This undertaking will rely heavily on the cell-phone based CommCare application and the newly developed CHW manual and tools piloted at the end of 2008. With a better trained cadre of CHWs, additional services—including diagnosis and treatment of malaria, treatment of malnutrition, and the management of adherence to HIV/AIDS and TB medication—can be shifted to the household level.

Improve Quality of Care. Clinic consultations are expected to increase with the strengthening of the CHW program. This underlines the need for a minimum quality of care at the clinic- and community-levels. In addition to the standardization of clinical protocols, refresher training for clinical staff may also be considered. The focus of this priority is improved prevention, diagnosis, and treatment of infection and other illnesses and improved patient confidentiality.

Increase Supply & Demand for Long-term Contraception. The goal is to ensure all family planning commodities are available in clinics, train staff in provision of methods, and generate demand through behavior change communication and other community engagement tools.

EDUCATION

The MVP reaches over 300 schools with over 90,000 students. The 2008 priorities for the education sector were to: (i) Increase student access to school; (ii) Create safer learning environments; (iii) Increase availability of non-formal education opportunities; (iv) Ensure universal school-meal coverage; and (v) Improve the quality of education. The site teams implemented a variety of interventions, localized to their situations and needs, to meet these objectives. In 2008, the project made great strides towards the goal of universal primary enrollment (UPE).

Sector Achievements

Increase Access and Safe Learning Environments. All sites placed great emphasis on increasing access to education by improving school infrastructure, building new schools, and ensuring that schools are safe, child-friendly learning environments. In 2008, over 220 classrooms were built and over 200 infrastructure improvements were made, including water points, electricity, classroom rehabilitation, and gender-sensitive pit latrines. In Dertu, Kenya, the site adapted the MVP model to its local circumstances by constructing separate boys' and girls' dormitories for pastoralist children and introducing a mobile school to the community. Within eight months, more than 300 pastoralist children and 36 adults enrolled at the mobile school.

Non-formal Education. The MVP realizes that the formal education system will not be sufficient to achieve the goal of UPE and the target of improved literacy for youth. Through collaboration with local partners and Ministries of Education, functional literacy classes tailored to the needs of the learners and their schedules were implemented in ten MVP sites. Targeting school leavers and adult learners, the MVP enrolled over 6,500 students in

non-formal education programs. In 2009, these programs will be extended to all sites, and opportunities will be expanded to enroll more learners.



Children receiving lunch through the school meals program in Ruhira, Uganda

Universal School Meal Coverage. The MVP school meals program aims to increase food security and increase enrollment in primary schools by providing a homegrown, daily, nutritious meal for children as recommended by the UN Millennium Project Hunger Task Force. Since

2007, when these programs, were launched, the project has seen tremendous success, with nearly all sites offering a daily meal to all school children in 2008.

Improved Quality of Education. The MVP has a three-pronged approach to improving the quality of education: (i) Teacher development; (ii) Improved management by school administrators, PTAs, and School Management Committees; and (iii) Improving the status of the learner. Working closely with the Ministries of Education, partners, and local Teacher Training Colleges, roughly 1,300 teachers were trained in child-centered methodologies, refresher courses, and/or other topics identified by teachers. In Malawi and Ghana, the MVP provided intensive training for volunteer and unqualified teachers to assist them in meeting government teacher qualifications.

The sustainability of the MVP's education programs requires capacity building of school management and administration to manage a well-run school. Trainings on school management, implementation of school meals programs, monitoring and evaluation, and community mobilization were just a few of the trainings offered this year. The MVP highly prioritizes these trainings and will continue to work with the community development sector to ensure that these activities are carried out.

The education sector's priorities for 2009 include universal school meal coverage and the provision of education (formal and non-formal) to vulnerable groups. Key interventions include trainings of School Management Committees/PTAs; teacher trainings and exchanges; establishment of non-formal education schools for youth who have dropped out or never enrolled; gender-based violence training at the school level; finishing infrastructure improvements; and conducting assessments of enrolled, dropouts, never-enrolled, and completed primary aged students across the sites.

COMMUNITY DEVELOPMENT AND LOCAL GOVERNANCE

The 2008 priorities in community development and local governance were to (i) Enhance participatory planning processes; (ii) Develop participatory monitoring and evaluation (PM&E) systems; (iii) Improve community, organizational, and institutional capacity building; and (iv) Begin refurbishment of at least one multipurpose community center per site.

Sector Achievements

Enhancing Participatory Planning Processes. To improve and deepen the participatory planning processes in all MVP sites, training workshops were offered to staff, community leaders, and government officers in participatory planning and facilitation techniques and gender mainstreaming. These trainings focused on how to broaden stakeholders' involvement and link to decentralized planning systems that are traditionally underutilized. For example, in Bonsaaso, Ghana, district assembly members were trained in how to prepare community action plans (CAP). Four sites—Mwandama, Malawi; Tiby, Mali; Potou, Senegal; and Ruhiira, Uganda—

achieved targets for strengthening decentralized participatory planning systems. In Mwandama, decentralized participatory village planning structures were revitalized. In Tiby and Potou, local development plans were aligned with the MDGs, and, in Ruhiira, bottom-up, building-block planning systems were strengthened through new linkages with sub-district planning units.

Developing Participatory Monitoring and Evaluation (PM&E) Systems. Many of the sites engaged in PM&E activities and quarterly and annual review meetings with multiple stakeholders. In Sauri, Kenya, a comprehensive PM&E system was developed that engages each sector, the community, and key government stakeholders.

Improving Community, Organizational, and Institutional Capacity Building. Ongoing community capacity building efforts focused on leadership, gender relations, group dynamics, the strengthening of organizational mandates and objectives, and development of effective by-laws. Concurrently, the sites also developed five-year strategies for institutional development, with a focus on a core set of institutions with the potential to manage community development in the long-term. Capacity building efforts with these institutions focused on goal setting, planning and implementing projects, mobilizing and allocating resources, monitoring progress, and managing donors and partners. For example, in Pampaida, Nigeria, the development management committee received training on advocacy and negotiation skills. In addition, 13 sites completed an institutional mapping of all relevant organizations present when MVP was launched and those created since. This mapping serves as a baseline report on the platform that exists for developing institutional strategies.

Refurbishing at Minimum One Multipurpose Community Center per Site. In 2008, seven sites constructed new or upgraded existing multipurpose community centers, including Bonsaaso, Ghana; Sauri, Kenya; Gumulira, Malawi; Ikaram, Nigeria; Pampaida, Nigeria; Potou, Senegal; and Ruhiira, Uganda.

In 2009, the community development and governance sector will continue to prioritize the four objectives from 2008. A new priority area in 2009 will be to focus on the sustainability of community development initiatives. This will include organizational and institutional assessments to develop and implement capacity building strategies for priority organizations and groups that are central to handover and exit strategies in each MVP sector. Community participation in the design and creation of management and transition plans will be critical to their success. The community development and governance sector will also prioritize the harmonization of organizational and institutional roles and responsibilities through capacity building of local institutions that play key functions in the phase out and sustainability of the project.

ENVIRONMENT

The MVP seeks to ensure and protect environmental sustainability and does not compromise the environment to achieve goals in other sectors. In 2008, the environment sector focused on three main activities: (i) Establishing tree nurseries to start reforestation activities; (ii) Rebuilding soil fertility and soil organic matter through integrated soil fertility management practices; and (iii) Erosion control for crop areas with slopes greater than 30 percent.

Sector Achievements

Establishing Tree Nurseries. The creation of nurseries and tree seedlings had variable success in the sites. No site reached the 2008 target of 200,000 seedlings per 5,000 people, but approximately 500,000 seedlings each were created in Ruhiira, Uganda and Mwandama, Malawi, and 250,000 produced each in Sauri, Kenya and Koraro, Ethiopia, with 100,000 created each in Tiby, Mali and Mayange, Rwanda. In addition to the number of trees planted, the type of tree is also important. Most of the sites are focusing on creation of fruit trees or exotic trees for fuel wood. Few sites have significant numbers of indigenous trees for reforestation activities. The sites that still have significant tree cover, such as Ikaram, Nigeria and Bonsaaso, Ghana, have focused on awareness programs to reduce tree-cutting activities.



Women in Koraro, Ethiopia planting trees to address soil degradation and erosion

Integrated Soil Fertility Management Practices. These practices include the combination of mineral fertilizers with organic inputs, including leguminous trees and cover crops, composts, and animal manures. In Mwandama, Malawi and Mbola, Tanzania, these practices have reached over 50 percent of the farmers; although, the area of the farms under such practices has been very difficult to determine. The adoption of leguminous tree fallows has been the most successful method, but adoption still reaches less than 20 percent of farmers and small areas of the farms are under leguminous fallows.

Erosion Control for At-risk Crop Areas. In Ruhiira, Uganda and Koraro, Ethiopia, there are degraded, steep slopes that require erosion barriers and rehabilitation through tree planting. In Ruhiira, local communities constructed 3,043 trenches (measuring 93 kilometers) for soil and water conservation. In Koraro, several communities were mobilized to rehabilitate eroded gullies by establishing check dams. This is the first step in land rehabilitation. It will be followed by establishing vegetation to stabilize the soils. In the other sites where slope and erosion are less severe though important, such as Sauri, Kenya, there has been extensive trainings on soil and water conservation on farms. In Mwandama, Malawi, 92 kilometers of terraces were installed.

Key 2009 priorities for the environment sector include the following: (i) Systemically planning and drastically increasing the types of tree seedlings and number of seedlings in nurseries or seeds and distributed and planted (minimum of 200,000 per village of 5,000 people) to the communities; (ii) Promoting and expanding integrated soil fertility management practices to half of the cropped area in the village; (iii) Conducting participatory environmental assessments in all sites; (iv) Developing plans for natural resource management (land rehabilitation, conservation areas, tree planting, erosion control, removal of invasive species) made based on the participatory assessments; and (v) Organizing better erosion control through terracing (biological or stones) in sites with slopes of 30 percent or more.

INFRASTRUCTURE

In 2008, the MVP focused on enhancing coordination with local governments and partners to ensure joint planning and sustainability of the core network of interventions. In this regard, some projects were implemented by the MVP following initial government interventions on roads and on the extension of the electricity grid, which provided greater access to markets and services across MVP sites. Alternative sources of energy (primarily solar) have been provided to several institutions in different sites. In addition, small-scale energy programs (LED lighting and fuel efficient cook-stoves) have been introduced in some sites. In the ICT sector, the partnership with Ericsson continues to produce impressive results, and some sites have also made significant progresses on providing equipment and connectivity to several key community institutions.

Sector Achievements

Infrastructure Planning. The MVP worked with local governments and electricity utilities to coordinate and complement project priorities with their plans as much as possible. This effort has resulted in several agreements and has set the foundation for the sustainable delivery of infrastructure at the local level.

Roads and Transport. In coordination with local governments, the MVP has carried out new interventions on road rehabilitation, prioritizing the installation of culverts and small bridges on water crossings, and upgrading the road surface in the eroded sections on the feeder roads. The MVP has also backed up the routine maintenance efforts carried out by local governments in coordination with communities. Additionally, most of the Millennium Villages have organized training sessions on labor-based road work techniques, thereby improving the abilities of local communities to contribute to road maintenance work. Some remarkable examples of this year's achievements are: rehabilitation and maintenance of 85 km of feeder roads and installation of more than 150 culvert rings in water-crossing areas in Sauri, Kenya; construction of a referral hospital and a 20 kilometer road in Tiby, Mali, which connected the site with a near town; and, construction of two concrete decked bridges in Mwandama, Malawi, opening new all-year round access to several communities.

Energy and Electricity. In most sites, the national utility has extended or made new commitments to extend the electricity grid to part of the site and established grid connections at key public institutions, such as clinics and schools. In some sites, plans are underway for additional extensions or connections, including in Mayange, Rwanda and Mwandama, Malawi. In several sites, solar photovoltaic power has been provided by the MVP and, in some cases, through a contribution from the government to key public institutions. Fuel-saving institutional cookstoves have been provided to schools in Sauri, Kenya and introduced in smaller numbers of schools in other sites. In Mwandama, Malawi, a pilot program is developing local vendors and cooperatives to sell improved household lighting (portable solar-powered LED lamps). In Ruhira, Uganda, improved household cookstoves have been successfully tested in preparation for a household cookstove program with a similar, market-driven design as the lighting program.

Information and Communications Technologies. In 2008, a partnership with Ericsson allowed the MVP to extend mobile phone and Internet connectivity to new sites and prepare for their extension to most other sites in 2009. The MVP successfully completed the installation of its village network in Ruhira, Uganda, and most clinics and five schools are now connected on a Wifi network. In addition to providing the Internet, which has made enabled the School2School program between Omniwchamba Primary School and a school in Connecticut, the clinics are now able to store OpenMRS medical records on a central database and communicate effectively by free phone calls using VOIP technology. In collaboration with the GSMA, two Internet kiosks were established in Mayange, Rwanda, providing Internet connectivity and computer classes for the community. Several sites, including Sauri, Kenya and Ikaram, Nigeria, began to install computers in schools. In mobile health, the MVP continued to develop cell-phone based mLearning tools and CommCare. The MVP also held planning meetings in Ghana for a large telemedicine initiative, which is planned to launch in 2009.

The infrastructure sector priorities for 2009 included: (i) Continuing the implementation of roads projects to provide greater access to markets; (ii) Continuing expansion of the electricity grid to key institutions and population and trading centers within the MVP sites; (iii) Providing solar PV systems to priority locations places that are not reached by the electricity grid (with special attention to the providing energy for water pumping, either for drinking and irrigation purposes); (iv) Rolling out the appropriate household technologies program initiated this year, namely LED solar rechargeable lanterns and fuel-efficient household cookstoves; (v) Supporting the development of agro-business through processing equipment (e.g. grinding mills) and through cheaper and more efficient transport services; (vi) In partnership with Ericsson, rolling out GSM networks with data across the remaining sites where possible; and (vii) Continuing ICT support to the health and education sectors by installing computers and adequate software in some key institutions and providing them with Internet connectivity.

WATER AND SANITATION

In 2008, the water and sanitation effort continued to focus on improving access to safer water for drinking and improving sanitation through the: (i) Rehabilitation of existing water points and distribution systems and establishment of new water points and distribution systems; (ii)

Development and initiation of water storage and treatment programs; (iii) Promotion of small-scale agricultural water management systems; and, (iv) Improvement of sanitation and hygiene.

Sector Achievements

Rehabilitating and Establishing Water Points and Distribution Systems. Through a partnership with JM Eagle, the MVP is extending piped water to many MVP sites. In 2008, 108 kilometers of pipes were installed in Potou, Senegal, bringing clean drinking water to over 99 percent of the community and to key public institutions. JM Eagle generously donated the pipes, and the local government provided technical support. Piped water was also extended in Dertu and Sauri, Kenya and Mayange, Rwanda. Designs for piped water in other sites were developed in 2008 with continuing roll-out planned for 2009.



Installation of pipe donated by JM Eagle for the water distribution system in Potou, Senegal

In 2008, the water sector continued to rehabilitate old and establish new water points and distribution systems to increase access for communities and key public institutions, such as health facilities and schools. Water and sanitation strategies were customized to each

site to increase supply and manage use. To increase the supply of safer water, rainwater harvesting, boreholes, hand pumps, shallow wells, protected springs, and other methods are used. For example, 33 boreholes were rehabilitated in Mwandama, Malawi, 13 boreholes with mechanized pumps were drilled in Ikaram, Nigeria, and seven rainwater catchment harvesting systems were established at public institutions in Mayange, Rwanda.

Developing Water Storage and Treatment Programs. Water quality and monitoring took place at all sites through community assessment of causes and pathways of domestic water contamination. Household water treatment took place in Dertu, Kenya and Gumulira and Mwandama, Malawi. In Bonsaaso, Ghana, community members are benefiting from the operations and maintenance of new water treatment facilities installed this past year.

Promoting Small-scale Agricultural Water Management Systems. In 2008, all sites drafted agricultural water management (AWM) strategy plans, which include irrigation development, rainwater harvesting, aquaculture, and watershed management. More than half of the sites initiated pilot programs for their AWM plans, with a focus on irrigation in most locations. For example, in Mayange, Rwanda, 50 farm ponds for micro-irrigation were constructed and 36 were lined with ultra-violet resistance plastic to minimize seepage losses. Fish ponds were also constructed in three sites: Sauri, Kenya and Gumulira and Mwandama, Malawi.

Improving Sanitation and Hygiene. The MVP conducted programs on these topics in the communities and schools, reaching 40 percent coverage in each site. These programs are designed to inform participants and promote behavior change. Community-based water and sanitation committees were created in most sites and given training on leadership skills, project management, operation and maintenance, and sanitation and hygiene. In many sites, CHWs also received sanitation and hygiene training. In addition to these activities, the sector focused on improving latrines and making them gender safe, and facilitating improved latrines in homesteads, reaching 30 percent coverage in each site.

In 2009, this sector will continue its focus on improved access to safer drinking water, improved access to water for agriculture, and improved sanitation and hygiene. Key priorities will be to: (i) Implement the designed water and sanitation strategies in 75 percent of all sites; (ii) Implement the designed agriculture and water management strategies in 50 percent of all sites; (iii) Integrate skills and knowledge acquired through a training program into sector strategies; and (iv) Increase monitoring and evaluation of improved drinking water at the source and household levels.

SITE-BY-SITE REVIEW

The Millennium Villages Project network consists of 14 programs in ten countries, six in East and Southern Africa and four in West Africa. Each site is managed by a core team of management staff (e.g. Team Leader, Science Coordinator/Operations Manager; Finance Officer), technical staff (e.g. Sector Coordinators), and local community-based staff members (e.g. Sector Facilitators, Community Health Workers), all of whom are nationals of the country where the site is located. Throughout 2008, these individuals received scientific, technical, and operational support—in the form of site visits, workshops, and an annual retreat—from colleagues from Millennium Promise (New York), the Earth Institute (New York, Bamako, Nairobi) and the UN Development Programme (New York and Country Offices). Together with local communities, government agencies, and other partners, the MVP network achieved remarkable results last year and effectively addressed a variety of challenges faced by a project of such unique complexity.

The following section describes progress on a site-by-site basis.

KORARO, ETHIOPIA

The Koraro Millennium Villages cluster is located in the Tigray region of northern Ethiopia. Consisting of 11 Millennium Villages and a population of approximately 67,000 people, the Koraro cluster represents the highland mixed agro-ecological zone, and sub-subsistence farmers rely on maize, sorghum, teff, and millet as staple crops. The cluster's extremely remote location contributes to the area's lack of infrastructure development, poor access to health services, and lack of income-generating opportunities.

Agriculture. In 2008, agricultural activities focused on increasing farmers' access to microcredit, diversifying crops to include high-value crops, and introducing irrigation technologies. The Koraro cluster has 14,034 farmers. During the main rains in June, 9,175 farmers purchased agricultural inputs using 50 percent MVP-subsidized support. Approximately 1,300 vulnerable households received fully subsidized inputs from the MVP. Additionally, 5,607 farmers have diversified to include high-value crops, such as oranges, avocados, and spices. Nearly 1,000 farmers have installed irrigation technologies, such as pot-drip irrigation, hand-dug wells, and micro-dams, often with support from the MVP.

Education. All of Koraro's 21 junior primary schools were constructed prior to the start of the MVP in 2005 and 2006. Therefore, education sector priorities were targeted toward improving infrastructure at schools, and continuing the school meals program. Twenty-two of a planned 86 classrooms have been renovated, and an additional 10 new classrooms will be constructed in 2009. Additionally, the school meals program serves 16,600 children in 21 schools. Due to drought in the area and a subsequent lack of farmer contributions, the school meals program was operational for only one-half of 2008.

Health. The Koraro cluster has ten health centers, constructed by the government before 2005. Utilization of the clinics was minimal, however, due to the lack of health staff and essential

medicines. In 2008, all ten clinics were upgraded with improved equipment, essential medicines, and minor renovations. A total of 49 trained health staff were hired and placed at clinics; the presence of trained male and female staff has significantly contributed to increased utilization at the clinics. Additionally, 244 CHWs were trained and are now servicing Koraro's households. CHWs administer malaria treatment, follow-up on births, and provide additional assistance at the household level. Given Koraro's remote location and the distances between households and clinics, the presence of CHWs has greatly improved access to basic health care, especially malaria treatment, for all of Koraro's residents. More than 22,000 individuals were treated for malaria at clinics and by CHWs in 2008.

Water. Drought is a persistent and critical challenge in Koraro. To address the chronic water shortages, in 2008, the MVP team focused on increasing the number of improved water points. Sixteen of a planned 39 water sources were completed in 2008 and completion of the remaining water sources will take place in 2009.

Infrastructure. Infrastructure activities in 2008 focused on increasing electricity at cluster institutions and improving road networks. The local government has committed to rehabilitating the main road through the Koraro cluster in 2009 and 2010. As a result, the MVP planned minimal road works in 2008 and rehabilitated five of a planned nine kilometers. In 2007, significant road improvements were completed on the main road connecting the cluster to the nearest tarmac road. With respect to electricity, 21 institutions will be connected to the electricity grid. Extension of the grid is progressing well, with three of a planned 21 institutions already connected.

BONSAASO, GHANA

The Bonsaaso cluster is located in a humid tropical climate zone west of Kumasi, surrounded by lush vegetation. The six Millennium Villages, which include approximately 30,000 people in total, are scattered throughout the cluster, creating a relatively dispersed population and making service delivery difficult. Most farmers rely on small-scale cash crop farming of cocoa and oil palm, which has limited the production of food for consumption.

Agriculture. To help improve nutrition, the MVP subsidizes Quality Protein Maize and improved varieties of cowpeas, neither of which were cultivated on a large scale prior to project intervention. Over 2,500 of 3,765 targeted farmers participated and received full subsidies. In addition, the agriculture team introduced rice farming and orange tree cultivation on a pilot basis to 230 farmers, reaching approximately half of the initially targeted population. The project also established 12 farmer field schools to support training that improves the management of cocoa plantations, the primary source of income for most cluster residents.

Education. The project completed 30 of the 48 classrooms planned for construction. In addition, the school meals program reaches 1,696 of the 7,554 children enrolled in local primary schools. To increase coverage, the project also built five additional school kitchens that will support school meals in five more communities in early 2009.

Health. The Bonaaso cluster has completed construction or rehabilitation of six of the seven clinics required to meet cluster needs. Most health staff are in place, though some shortfalls remain. For example, no lab technicians are currently working, and only one of the eight required pharmacists is active. There are, however, two physicians, four nurses, five midwives, ten clinical assistants, and four records assistants on staff. In addition, 28 CHWs have been trained to service Bonaaso's households with malaria treatment, follow up on births, and additional assistance at the household level. Given the dispersed population, CHWs have greatly improved access to basic health care, especially regarding malaria treatment and maternal health. More than 14,000 individuals were treated for malaria, and over 1,500 women participated in antenatal care sessions.

Water. Even though rain is consistent, improvements in the supply of drinking water are essential. Of the 30 boreholes planned for completion in 2008, the project completed eight. Despite only reaching 26 percent of the construction target, these points reach 57 percent of the targeted population of 4,200. Construction will continue in 2009. Furthermore, the project is planning to install an extensive piped water network that will further improve the availability of drinking water for over 15,000 residents.

Infrastructure. Infrastructure activities in 2008 focused on increasing electricity at cluster institutions and improving road networks. The local government has played an active role in supporting the maintenance of roads within the project area. Throughout the year, 87 of the planned 100 kilometers were improved and/or maintained. In addition, the national power authority, in collaboration with foreign support, has linked six communities to the national grid. Through the project's support, 14 of 27 planned locations have been furnished with grid or off-grid services.

DERTU, KENYA

Dertu is a stand-alone Millennium Village, with a population of approximately 5,000 people and located 100 kilometers from Garissa in northeastern Kenya. The Dertu Millennium Village is a Somali pastoralist community, with a focus on camels, cows, sheep, and goats. Approximately half of the community is nomadic and the other half is sedentary, living in Dertu town. The most significant challenges are the lack of access to health care and schooling, given the pastoralist lifestyle, lack of access to water sources and overgrazing at existing water sources, and gender inequality.

Livestock and Agriculture. As Dertu's population relies on livestock for its income and food security, livestock restocking in vulnerable and very poor households has been a core intervention. In 2008, the 20 poorest households in Dertu received 40 goats each, 30 of



Community members gather at the water hole in Dertu, Kenya.
Photo courtesy of John and Judy Craig.

which were from the MVP and ten from the community. Restocking activities will continue for vulnerable families in 2009. Additionally, as Dertu town is one of the crossroads for pastoralists throughout the region, the MVP established the Dertu livestock market that serves as a major trading center for animals and other goods. Since its establishment in early 2008, the market has seen approximately \$14,000 in profit each month as well as significant barter trading. This activity is a significant cash-generating opportunity for pastoralists in Dertu and around the region.

To support diversification and provide additional nutrition and income generation for sedentary families, the MVP is supporting Dertu residents to grow small plots of diversified crops. As crop diversification is a very new idea in the community, the MVP established a demonstration plot with tomatoes, peppers, onion, herbs, and melons.

Given Dertu's extremely dry climate, irrigation will be critical for any agricultural activities. In 2008, the MVP assisted ten of a planned 50 farmers to develop irrigation pans to retain water. The water from the pans can be used to irrigate small plots of crops, even during the driest months. Additionally, the MVP has launched an extensive community sensitization campaign on hay bailing. Traditionally, in pastoralist communities, herders graze their livestock wherever water is available, often causing significant overgrazing, deforestation, and environmental degradation. In 2008, the MVP team in Dertu taught herders how to bale and store hay for their animals during dry periods. This activity was a very significant shift in the way that pastoralist households think about feeding their animals.

Education. Education in Dertu is focused on increasing attendance and facilities at the Dertu boarding school, while also increasing access to education for mobile families. There is one school in Dertu town that serves most of the children. In 2008, separate boys' and girls' dormitories were constructed to allow children of pastoralist families to stay at school while their families are mobile. The Dertu school has enrolled 529 children. Additionally, the Dertu team launched a mobile school that follows the movements of the pastoral families. More than 300 children and 36 adults attend the mobile school. All of Dertu's 529 school children receive daily school meals. The 300 children attending the mobile schools do not receive a meal at school.

Health. As Dertu grows as a hub for mobile pastoralists throughout the region, the availability of health care is critical for the residents of Dertu villages and the mobile pastoralists from the region. There is one clinic in Dertu town, and, in 2008, construction began to add a maternity ward and laboratory; the construction will be complete in early 2009. The Dertu team also conducts health outreach clinics for the pastoralist community each month; these have played a significant role in reducing routine illnesses and deaths from malaria, snake bites, and child birth. There are five CHWs, who travel throughout the community, and have received special training in prenatal care and midwifery skills, as very few births take place in clinics. Dertu clinic received patients from throughout the region, some as far away as Ethiopia. In 2008, approximately 11,100 patients were seen at the Dertu clinic for malaria treatment, and more than 8,700 malaria patients benefited from outreach mobile clinics.

Water. The hot, dry climate is one of the most significant health, livelihood, and environmental challenges in Dertu. When water sources are available and functioning, they draw pastoralists

from around the region, putting further strain on the water systems. Therefore, all water interventions have focused not only on serving the needs of the Dertu community, but also surrounding communities that will use the facilities. In 2008, the Dertu team installed 17 new water sources, including boreholes, rehabilitated water springs, and rainwater harvesting systems. The water systems serve approximately 128 sedentary households, 529 students, and 50 pastoralist families daily.

Infrastructure. In partnership with the Government of Kenya, more than 100 kilometers of roads were bush cleared and rehabilitated in 2008. The main road connecting Dertu town to Garissa received most of the work; this road is a critical linkage for health and business development. As Dertu is 100 kilometers from the national grid, extension of the grid will not be possible. Therefore, solar power was installed at the clinic and school. In 2008, in partnership with Ericsson, Dertu received a cell tower and Internet connectivity, and cell service now extends 50 kilometers beyond the town center. Donated laptops provide Internet access at the school. Given the remote location of Dertu and the mobile population, cellular services will be a significant advance in supporting the community to have better access to health services and market information.

SAURI, KENYA

The Sauri Millennium Villages cluster is the largest site in the project, with 11 Millennium Villages and a population that has grown to approximately 75,000 people. Located in Siaya district, in western Kenya, Sauri is in the maize bi-modal agro-ecological zone, and the cluster's subsistence farmers rely on maize and beans as their staple crops. The most significant challenges in Sauri are HIV/AIDS, malaria, neglected tropical diseases, food insecurity, bad roads and poor infrastructure, and a lack of improved water sources.

In January 2008 the Sauri cluster was caught in the middle of Kenya's post-election political upheaval, looting, and violence. Remarkably, the cluster was relatively unscathed by the civil disruption, despite its proximity to Kisumu, one of the country's hubs of unrest. During this period, a large proportion of project staff was unable to return to Sauri from their homes during annual leave. There were multiple anecdotes of MVP activities being protected by the community amidst the broader disturbances. This can reasonably be interpreted as a sign of strong community buy-in for the MVP. The local MVP team was also extraordinarily successful in obtaining bulk agricultural inputs for Sauri farmers on an emergency basis during a period when most economic activity had stagnated and procurement was extremely difficult. Sauri was one of the only locations in that region to obtain major access to inputs for the long rains.

Agriculture. In 2008, the project launched an initiative to transition the vast majority of Sauri's farmers from MVP-supported agricultural subsidies to credit. There were several challenges in introducing the credit program to more than 10,000 households at once, alongside ongoing subsidies for the most indigent households. In particular, the civil disruption made it very difficult to conduct community sensitization and consultation when the program was introduced. The mass transition to credit also focused on universal access rather than discriminating based on particular criteria. The main local microfinance institutional partner faced significant limitations

in its capacity to implement the system. Although more data are needed to draw a more conclusive assessment, the overall picture indicates that national price subsidies remain the most fundamental positive incentive to boosting smallholder production, and that the transition to credit must be pursued as an essential complement in a context more focused on proportionate growth.

Regarding agricultural diversification, in 2008, more than 3,800 of Sauri's 12,720 farmers began growing high-value crops introduced by the MVP. These included onions, tomatoes, kale, herbs, and fruits. Additionally, 90 households started fish ponds to grow small fish for food and income. The MVP is also supporting the development of dairy initiatives through trainings and artificial insemination of cows.

Education. There are 31 schools in the Sauri cluster. In 2008, 20 new classrooms were constructed, and 24 classrooms are planned to be completed in 2009. Additionally, 12 of the 31 schools were rehabilitated. All of Sauri's 19,940 children receive daily school meals consisting of locally grown maize, beans, fruits, and vegetables. Improved school infrastructure and the daily school meals have been a significant improvement in the education system. Presently, the MVP is working to hire additional female teachers to improve student to teacher ratios and gender equity in schools.

Health. There are six health centers in the Sauri cluster. At the start of the MVP, the only health facility was the dilapidated and understaffed Yala sub-district hospital. In 2005, the MVP constructed one clinic in the Sauri MV-1, and, in 2007 and 2008, the MVP completed construction on an additional four health centers in the cluster and upgrades to the Yala sub-district hospital. In addition to primary care, the cluster now has an operating theater and dental services. Sauri's health facilities are staffed by one doctor, two dentists, seven clinical officers, 32 nurses, and 83 trained CHWs. In 2008, approximately 64,500 patients were treated for malaria at Sauri's clinics; 25,000 of those patients were under the age of five. In addition to malaria reductions, significant improvements have been seen in maternal and child health, access to HIV/AIDS testing and therapy, and improvements in overall basic health care.

Water. Sixty of a planned 65 water sources were completed, serving approximately 15,000 people.

Infrastructure. In 2008, 85 kilometers of Sauri's roads were rehabilitated. Although the Sauri team only planned to rehabilitate 70 kilometers in 2008, they were able to accomplish more. As a result, 100 percent of the cluster population now has access to an all-weather road, which has greatly improved access to health care and markets. Two of a planned 26 institutions have been connected to the electric grid. The Sauri team has made excellent progress working with the Kenya Power and Electric Company, and the grid will be extended to remaining institutions in 2009.

GUMULIRA, MALAWI

Gumulira is a stand-alone Millennium Village of approximately 5,000 people located in central Malawi, approximately one hour from Lilongwe. With a population of 5,000 people, Gumulira's biggest development challenges include lack of access to health services, lack of access to agricultural inputs, poor crop production, and a lack of water sources. As the Gumulira project has a small staff, they receive significant technical guidance from the Mwandama program.

Agriculture. There are 1,200 farmers in Gumulira. In partnership with the Malawi national fertilizer subsidy program, the MVP is able to provide maize seed, DAP, and urea fertilizers at a subsidized rate of 90 percent. 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 repay by providing approximately 100–150 kilograms of maize to the school meals program. Crop diversification has been very successful, and all farmers are growing cowpeas and chickpeas in addition to maize. A pass-along goat program was launched in 2008 to increase livestock production, and 50 female farmers received their first aid package in 2008. Additionally, all of Gumulira's farmers were trained in composting and manure production. Nearly 400 of the 1,200 farmers participated in winter-cropping by irrigating the low-lying areas, known as *dimbas* in Malawi. The Foundation for Irrigation and Sustainable Development, a partner NGO, conducted an assessment to construct a micro-dam, and the project is expected to move forward in 2009.

Education. There was one school in Gumulira at the start of the MVP. In late 2008, construction began on a junior primary school and is expected to be completed by March 2009. Daily school meals are provided in partnership with WFP for all of Gumulira's 1,600 school children.

Health. Given budgetary constraints in Gumulira, a permanent clinic is not possible. The MVP has established, however, twice-monthly outreach clinics. In 2008, more than 2,200 patients were seen at the outreach clinics, which have served as a successful means for providing basic health services to community members and surrounding villages in a low-cost, mobile way. Additionally, five trained CHWs serve the Gumulira community. In 2008, more than 330 people received treatment for malaria through CHWs and community outreach clinics.

Water. All 16 planned boreholes were rehabilitated and one new borehole was drilled.

Infrastructure. In 2008, the Gumulira team conducted a feasibility study on extending the electricity grid and options for non-grid technologies. In 2009, plans will be made to provide electricity at Gumulira's junior primary schools. In 2008, the MVP purchased and distributed ten cell phones to committee members. After training the committees, the cell phones have been very successful in connecting the village to Lilongwe and near-by towns and markets.

MWANDAMA, MALAWI

The Mwandama cluster, which consists of seven Millennium Villages and approximately 35,000 people, is located in southern Malawi, near the town of Zomba. Residents rely on subsistence maize farming and have one long rainy season in November, followed by shorter rains in June. Poor access to health services, drought and flood conditions, and a lack of infrastructure at schools and clinics are some of the most significant challenges.

Agriculture. There are 7,000 farmers in Mwandama. In partnership with the national fertilizer subsidy program, the MVP provided maize seed, DAP, and urea fertilizers at a subsidized rate of 90 percent. 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 kilograms of maize to the school meals program at the end of the season.

Approximately 850 farmers have diversified their production to include high value fruits, vegetables, and herbs. Additionally, the MVP conducted extensive training for farmers on livestock management, post-harvest management, irrigation, and compost and manure production. The MVP also supported 44 households to begin beekeeping. Nearly 900 farmers have participated in irrigation activities and winter cropping in the low-lying *dimbas*. Maize grown during the winter rains and crop diversification is helping farmers avert hunger during the typical hunger months and increase household income.

Education. Education remains one of the most significant challenges. Many children do not attend school because they are day laborers on nearby tobacco plantations. There are four junior primary schools under construction, which should be completed in June 2009. Approximately 8,900 children receive daily school meals, in partnership with WFP.

Health. The cluster is planning to construct three new clinics and upgrade the existing Thondwe clinic. As an alternative strategy, there are twice-monthly mobile outreach clinics to provide basic care, family planning, antenatal care, malaria treatment, and vaccinations. Outreach clinics have been very successful in ensuring access to primary care until the clinics are complete. Furthermore, 45 trained CHWs visited 4,000 households in 2008. More than 4,400 people received treatment for malaria at Mwandama's outreach clinics and Thondwe clinic in 2008.

Water. Thirty-four new water points were constructed or rehabilitated in 2008 and an additional 41 boreholes are planned for 2009. Presently, the 34 water sources serve more than 18,000 people, more than half of Mwandama's population.

Infrastructure. In 2008, all five kilometers of planned road rehabilitation were completed, and two new bridges were constructed. Additionally, the infrastructure team, together with UNDP, conducted a feasibility study to extend the grid, and in 2009, discussions will begin with the utility company to extend the grid to approximately half of the cluster's institutions. A program was introduced to increase household lighting and reduce reliance on kerosene and fuel wood.

More than 200 solar-powered lanterns have already been sold throughout the community and another order for 300 has been placed.

TIBY, MALI

The Tiby Millennium Villages cluster is located in the Dioro rural *commune*, approximately 75 kilometers from Ségou in southeastern Mali. In these 11 Millennium Villages, containing approximately 55,000 people, more than 75 percent of the active population is engaged with agriculture. The production system is based on rain-fed sorghum and millet cereals, tree crops, and livestock, with irrigated rice production along the Niger River floodplain.

Agriculture: The cluster has established a very successful input subsidy and credit scheme; 4,777 of 5,200 cluster farmers receive a 50 percent subsidy to support the fertilizer requirement for rice, millet, and sorghum. The other 50 percent of the input cost is loaned to farmers for repayment after harvest. In all, 95 percent of farmers have repaid their loans in full. This scheme is scheduled to continue in 2009, with the subsidy reducing to 25 percent of input cost. In order to preserve water, the team introduced drip irrigation to 1,365 cluster farmers. This method greatly reduces the amount of water required to support a successful crop and is often used to support market gardening.

Education: In 2008, the project completed construction of 20 of a planned 23 classrooms. Currently 1,588 of 6,329 enrolled children benefit from the school meals program.

Health: The project completed construction of two clinics, bringing the cluster's total to six, which meets the Ministry of Health's standards. These clinics will be commissioned and staffed very soon. There are currently four doctors, 15 nurses, and ten other clinical support staff at work in the cluster. Additionally, 241 CHWs have been trained and service Tiby's households. CHWs administer malaria treatment, follow up on births, and provide additional assistance to the cluster's households. Their presence has greatly improved access to basic health care and encouraged community members to take advantage of the cluster's services. Over 73 percent of the 1,011 recorded deliveries took place in the clinics, and 1,871 women attended antenatal care sessions.

Water: The cluster team has prioritized the installation and repair of boreholes and pumps to maximize the number of residents served by improved infrastructure. To date, 16 boreholes have been constructed, reaching 23,000 people.

Infrastructure: The project made good progress in 2008 with regard to roads, electricity, and ICT. Almost 70 kilometers of roads have been enhanced, either through regular maintenance or scheduled improvement. With an annual target of 85 kilometers, the team nearly reached its goal. In addition, 250 sites now have grid or off-grid electricity. Nearly all of these locations are businesses within Dioro that now receive power from the local parastatal organization for six hours each night. Finally, ten of a planned 12 sites were connected to the Internet for the first time.

TOYA, MALI

Launched in January 2008, Toya is a stand-alone Millennium Village of approximately 5,000 people, located in the north about 30 kilometers from Timbuktu along the fringes of the Sahara Desert. The area receives very low and highly unpredictable rainfall and therefore relies on irrigation from the Niger River to support agriculture activity. Temperatures can reach up to 130 degrees Fahrenheit. Most inhabitants are engaged in agriculture, animal husbandry, and fishing, practiced in both nomadic and sedentary contexts. Farming, while widespread, is expensive and can cost up four times the amount of similarly productive plots in other regions of the country.

Agriculture. The team focused on introducing fully-subsidized inputs for both off- and major-season rice farming. This included over 15 tons of four varieties of improved rice and 40 tons of urea. In total, 13 farmers' groups (1,199 individuals) received inputs, with yields averaging over five tons per hectare. Fields that did not receive subsidized inputs had yields from 1.4 to 4.5 tons per hectare, though the historic average is approximately four tons per hectare.

Education. Prior to the project's start-up, 651 children attended primary school. During the most recent school year, however, enrollment reached 866. This improvement is largely due to outreach within the community. The school meals program reaches 555 children with plans for future expansion.

Health. Fortunately, the clinic infrastructure did not require any improvement. As such, the principal activity was the distribution of 3,453 long-lasting insecticide-treated bed nets to cover 100 percent of sleeping sites. In addition, the project assured that each of the four existing clinics could treat and manage tuberculosis. Finally, the project trained 12 CHWs to monitor malaria at the community level.

Water. Given the importance of irrigation in farming, 17 pumps were repaired, and 17 users trained to maintain them. In addition, the team completed a study to better understand the potential of the irrigable land within the *commune*.

Infrastructure. The village neither planned nor undertook activities in this sector during 2008.

IKARAM, NIGERIA

The Ikaram Millennium Villages cluster is located in Ondo State approximately 400 kilometers from Lagos. 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 receives average rainfall of 1,500 mm. Slash-and-burn agriculture remains widespread, yet many of the cluster's residents rely on commercial activity for income.

Agriculture. In 2008, Ikaram continued to subsidize Quality Protein Maize and improved varieties of soybean, oil palm, and Telferia, a leafy vegetable with edible seeds. Seventy percent of the 1,000 targeted farmers participated, receiving a full subsidy.

Education. The cluster completed construction on all 30 classrooms planned in 2008. Due to low community interest and local government policy, school meals are not part of the local strategy in Ikaram. Sixteen schools have access to grid power.

Health. The Ikaram cluster has four health centers that were constructed by the Nigerian government before 2005. The project has sponsored the refurbishment of two of these centers, and facilitated connection of all four clinics to the national grid. In addition, the project facilitated the posting of a complete health team, with two physicians, 19 nurses, five laboratory technicians, and six pharmacists, meeting 100 percent of the local trained staffing needs. The 40 CHWs who serve the local community administer malaria treatment, follow up on births, and provide additional assistance at the household level. Their presence has greatly improved access to basic health care, especially malaria treatment, for all residents. More than 8,000 individuals were treated for malaria at Ikaram's clinics and by CHWs in 2008, against an initial estimate of 4,500.

Water. The initial infrastructure available prior to MVP's outset had been over-used and run down. As such, the team has focused on borehole rehabilitation and establishing water management committees. In 2008, the project rehabilitated all 18 planned boreholes to the benefit of the entire cluster population of over 18, 000. In addition, the project formed seven water and sanitation committees to manage oversight of improved boreholes and monitor sanitation within the community.

Infrastructure. The Ikaram cluster greatly benefits from infrastructure existing prior to project commencement. The national grid reaches every community, and a national highway passes through a section of the cluster. As such, the project attempts to maximize the use of these existing resources. One example is the construction of community resource rooms with computers and Internet access. The team finished 16 such rooms in 2008 and will outfit them with the appropriate hardware in early 2009. All cluster households are within 500 meters of an electric grid transformer. During 2008, 11 additional institutions were connected to the grid.

Strategically, one very positive new development was the decision to redirect resources from the Ikaram cluster to the Pampaida cluster to help establish three new Millennium Villages (a.k.a MV-2s) in the Pampaida region. As background, based on a recent demographic study it was recognized that the Ikaram cluster had an excess of financial resources committed to it given its population size, which is significantly less than what was initially believed, and the requirements of the MVP model. In early 2009, the three new villages will be launched in Pampaida with financial support expected from the Kaduna State Government, which is strongly committed to the MV model and the prospect of further growth and development.

PAMPAIDA, NIGERIA

Pampaida is a stand-alone Millennium Village, soon to be expanded to a cluster of three villages, as noted above. Located in northern Kaduna State, the Pampaida site faces multiple challenges: acute and widespread poverty, predisposition to frequent droughts, desertification, high temperatures, and pressure from human and livestock populations. Farmers practice mixed cropping, growing cereals (millet, sorghum, and maize) and vegetables (tomatoes and onions), with cattle raised in the upland areas. The rainy season is from June to September, giving up to 600 millimeters of rain annually.

Agriculture. 663 of the 952 farmers in the cluster participated in a revolving credit scheme for fertilizer that offered interest free loans. The monetary support for the fertilizer purchase derived from excess grain collected the previous year. The project has opened negotiations with Bank PHB to link farmers to commercial agriculture financing opportunities. Furthermore, 703 total farmers cultivated Quality Protein Maize, improved varieties of soybean and oil palm, and Telferia.

Education. The cluster continues to benefit from a strong partnership with the local and regional government. Because of increased enrollments, supported largely through the cluster's successful school meals program—which reached 100 percent of the approximately 1,600 students—more children are progressing to secondary school. As such, the government built six classrooms to complete a Junior Secondary School within the cluster, and the project built an additional six classrooms to support increased enrollment at the primary level.

Health. Services within the cluster are centered on a clinic connected to the grid. One physician currently provides clinical expertise and is supported by one records assistant. This staff is supported by ten CHWs who extend basic services to residents' doorsteps, promote antenatal care, and monitor bed net use. A total of 111 cluster women took advantage of antenatal care sessions, representing 64 percent of the 172 recorded births during the year. In addition, over 1,000 people were treated for malaria.

Water. Nine of 12 new boreholes were installed in 2008. In addition, the project rehabilitated 12 more existing boreholes, meeting 100 percent of the team's target. As such, the entire cluster population of more than 5,500 benefits from these improvements. Any additional work in 2009 will work to reduce pressure on the existing infrastructure.

Infrastructure. In 2007, the Nigerian Government completed work to connect Pampaida to the town of Sauwala. Thus in 2008, the cluster provided maintenance support to this significant donation. Although the government extended the electricity grid to the village's center, only 8 percent of cluster households are within 500 meters of this extension. The team planned to connect 24 public institutions to this extension throughout the year, realizing this goal for 11 locales. To support Internet connectivity and community access, the project built and commissioned a local resource center, which will be outfitted with computers and an Internet connection in 2009.

MAYANGE, RWANDA

The Mayange cluster is located approximately 40 kilometers from Kigali. The cluster, which includes a population of 20,000 across four villages, largely consists of people who resettled to the area after the 1994 genocide. Although the community relies on subsistence farming, heavy deforestation has changed rainfall patterns and resulted in drought conditions and very little crop production. HIV/AIDS, malaria, and a severe lack of water sources are all significant development challenges.

Agriculture. In 2008, all of Mayange's 4,744 farmers received subsidized agricultural inputs from the MVP. Because of the drought, farmers did not receive credit but were given inputs on a loan basis and required to repay a portion after the harvest. More than 2,300 farmers have diversified their crops to include cowpeas, cassava, groundnuts, mushrooms, and chickpeas. A total of 245 cows were inseminated and will be used for dairy production, and over 70 ponds have been constructed and will be stocked with fish for farming. Given the persistent drought, dairy and fish farming will provide good opportunities to improve nutrition and increase income.

Education. In 2008, the Mayange team completed rehabilitation of all 77 planned classrooms; an additional seven new classrooms are planned for construction in 2009. In partnership with WFP, more than 5,500 students receive daily school meals. In partnership with Ericsson, a new computer lab was launched in the primary school. The lab, with ten computers, is a resource for both teachers and students and created excitement throughout the community about the introduction of Internet technologies and improved access to information.

Health. Since the main health center in Mayange existed prior to MVP's operations, the project has upgraded the clinic, rehabilitated existing rooms, constructed new rooms, and provided trained staff, equipment, and medicines. In 2009, a new maternity ward and laboratory will be added. The cluster is served by 70 CHWs who were trained in reproductive health in 2008; in addition, a CHW malaria treatment program was launched to diagnose and treat malaria at the household level using Coartem. Approximately 2,500 patients were treated for malaria at the clinic and through CHWs in 2008. One significant development was the drop in the number of patients seeking treatment for malaria at the clinic, largely due to use of insecticide-treated bed nets. More than 2,500 people received voluntary counseling and testing at the clinic, and more than 1,800 women were seen for prevention of mother to child transmission of HIV/AIDS.

Water. Thirteen of a 14 planned water sources were completed in 2008, serving 500 people. In 2009, construction will begin on a major piped water system, which will be the main source of water for most residents.

Infrastructure. In 2006 and 2007, the government completed a major road connecting Kigali with Burundi. The road goes directly past the cluster and significantly improved access to the cluster and the number of people living near an all-weather road. Six of a planned 30 institutions were connected to electricity in 2008. A significant focus was on completing the feasibility study for grid extension, and grid work will continue in 2009. Ericsson constructed a cell tower and Internet connectivity. Several entrepreneurs have opened Internet kiosks for small business and community use, and 100 percent of Mayange's households have cell-phone coverage.

POTOU, SENEGAL

The Potou Millennium Villages cluster consists of six Millennium Villages and a population of approximately 30,000 people. Two different subsistence strategies co-exist: agricultural production and coastal artisanal fishing. The cluster initially faced multiple challenges, including the pollution of water sources by leached fertilizers and pollutants, the expansion of sand dunes towards agriculturally productive lands, and limited primary school attendance.

Agriculture. The cluster has yet to provide credit to farmers on a wide scale for major crops; however, 2,525 farmers have accessed credit to support market gardening. In addition, 659 of the targeted 1,255 farmers cultivated three varieties of improved onion seeds, two of cabbage, two of watermelon, and one of hibiscus. The project also began supporting drip irrigation on a small scale, and 35 of the planned 50 farmers started using this system to support onion production. Given the importance of this crop to livelihoods and the diminishing availability of water, the success of this intervention is critical to the long-term viability of onion gardening for local farmers. Finally, farmers continue to experience improved yields.

Education. During 2008, the education sector exceeded all targets for classroom construction and school meals. Due to a successful collaboration with BuildOn, a NGO, the team completed all 51 planned classrooms, as well as four others. In addition, 3,107 of 4,164 enrolled students receive school meals. The team is pursuing a gradual strategy to introduce this program, helping to ensure community support. In 2008, the cluster reached 119 percent of its target of 2,591.

Health. Prior to MVP's inception, an extensive health infrastructure had been in place, centered on smaller local health posts with only one clinic. In 2008, the project finished constructing four additional clinics, and refurbishing of existing clinics is underway. Although no physicians are available, these clinics are staffed by trained nurses, who are supported by 91 CHWs and three health facilitators. CHWs monitor conditions at the household level and encourage residents to seek treatment at facilities when necessary. Their efforts have helped ensure that deliveries take place with professional supervision at clinics: 736 of 824 recorded deliveries in 2008. In addition, 1,490 women attended antenatal care sessions, against a target of 1,002. This large number is due in part to multiple visits by the same women.

Water. Thanks to a successful partnership between JM Eagle and PEPAM, the government entity charged with managing water and sanitation projects, the MVP installed an extensive piped water network with taps at 119 community locations. This project, along with six shallow wells, reaches more than 22,000 villagers. Combined with pre-existing infrastructure, this network provides clean, piped, drinking water to over 99 percent of cluster residents.

Infrastructure. Thirty kilometers of road were scheduled for construction by the government, but the commitment has been delayed until 2009. In 2008, scheduled plans for a grid extension line were also not realized. As a result, currently 14 percent of cluster households are within 500 meters of a transformer. Furthermore, 18 of 46 planned public institutions are currently connected. This has slowed activity in the area of ICT. Although Internet connections were not established in 2008, the project did complete two community multi-media centers, which are planned to receive hardware and Internet access in 2009.

MBOLA, TANZANIA

The Mbola Millennium Villages cluster is located in central Tanzania, approximately 30 kilometers from Tabora. The six Millennium Villages in the Mbola cluster include approximately 30,000 residents and represent the mixed-maize, unimodal agro-ecological zone. Farmers in Mbola rely on maize and tobacco and have the largest plots of any Millennium Village cluster. The major development challenges in Mbola are a heavy reliance on tobacco for cash cropping, a severe lack of water sources, and poor infrastructure in clinics, schools, and transport networks.

Agriculture. The major spring harvest produced tremendous yields that were over five times the levels on farms outside the MVs. The harvest was a source of particular joy among villagers, with many elders citing it as the best in memory. This was also a major boost for the project in light of seed germination problems that had occurred the previous year. Farmer contributions from the food surplus led to a major expansion of the school meals program. In November 2008, all of Mbola's farmers received their agricultural inputs on credit through the MVP. Farmers were organized into 60-member groups and will repay their credit after the harvest. In 2008, nearly all of Mbola's 6,000 farmers diversified their crops to include high-value crops, such as sunflowers, fruits, and vegetables. Processors are being contracted to purchase sunflowers produced during the 2008 season, with the aim of generating a significant income boost for Mbola's farmers.

Education. There are 17 junior primary schools in Mbola. In 2008, six of a planned eight classrooms were constructed, and all schools received moderate rehabilitation and improved kitchens. With the launch of the school meals program in January 2008, 7,355 school children receive daily school meals, provided in partnership with local farmers. In 2008, Mbola's farmers contributed more than 100 percent of the grain needed for the school meals program.



Primary school children in Mbola, Tanzania

Health. There were four existing health facilities in the Mbola cluster and a new clinic was constructed by the MVP. Mbola's health centers are staffed by six clinical officers, six nurses, two social workers, one laboratory technician, one laboratory assistant, and two medical attendants. It is also served by 34 CHWs who visited all 6,000 households in the cluster during 2008. Approximately 12,000 patients received treatment for malaria at the Mbola's health clinics in 2008.

Water. Seventeen of 66 planned water sources were completed in 2008, serving 6,000 people. In 2009, work continues on a geological survey to drill an additional 41 boreholes.

Infrastructure. A total of 62 kilometers of road were marked for rehabilitation and maintenance in 2008. As a result, half of the Mbola cluster will now be reached by the grid extension and the other portion of the cluster will be served by off-grid sources. In 2008, assessments were conducted for both the extension of the grid and off-grid sources, and the clinics were internally wired. Connection is expected to take place in 2009.

RUHIIRA, UGANDA

The Ruhiira cluster, which includes eight Millennium Villages and approximately 40,000 people, is located in southwestern Uganda, near the town of Mbarara. The hilly topography and severe deforestation contributed to severe development challenges, including a lack of infrastructure, poor health, and chronic malnutrition. In 2008, priorities included completing construction of health facilities, gully rehabilitation and reforestation, and advancing the extension of a piped water system and the electric grid.

Agriculture. There are approximately 6,000 farmers in the Ruhiira cluster. In 2008, nearly all farmers diversified their farms to include high-value crops such as leafy vegetables, spices, and goats. As a result of the hilly landscape and severe deforestation and resulting erosion, the effectiveness of agricultural inputs has been minimized. A key intervention aimed to decrease soil erosion through the construction of anti-erosion gullies and terraces. More than 3,300 farmers constructed approximately 130 kilometers of erosion terraces and 3,800 gullies in 2008. Additionally, more than 436,000 seedlings have been planted.

Education. Ruhiira has 20 schools serving more than 11,000 children. After extensive construction in 2007, the MVP focused on completing upgrades at schools and continuing the school meals program, which serves twice-daily meals to all 11,000 children. In 2008, in partnership with a school in Connecticut, Ruhiira became the first site to launch the School2School program, which uses Internet technology to connect children in the United States with children in rural African schools.

Health. Ruhiira has six health facilities, all of which have received significant upgrades and new additions by the MVP. In 2008, the largest health facility at Kabuyanda was completed with an operating theater where cesareans can be performed. Health facilities are staffed with more than 50 trained health staff including three doctors, eight clinical officers, and 16 midwives. More than 99,000 patients from Ruhiira and surrounding communities were seen at the cluster's facilities in 2008, including more than 34,000 patients treated for malaria. In an effort to improve maternal and child health, the Ruhiira team introduced a midwife program that has increased the number of women delivering under supervised care at the clinics as well as increasing the number of women delivering under midwife care at home. The Minister of Health in Uganda indicated his desire to scale up the midwife program throughout the country.

Water. As a result of the hilly terrain, water and electrification are interlinked in Ruhiira. A major piped water system and electrification necessary to power the system must be installed to move water uphill. In 2008, assessments were completed on the designs of the extension of grid electrification, as well as the piped water system; both will begin construction in 2009.

Infrastructure. More than 71 kilometers of roads were rehabilitated in partnership with the local government, connecting more than 5,600 people to an all-weather road. Moreover, 37 of a planned 71 water sources were constructed in 2008. These water sources—including boreholes, water springs, and rainwater harvesting tanks—played a critical role in increasing access to improved water for some of Ruhiira's most vulnerable groups.

PARTNERSHIPS

The MVP is implemented through a partnership between the Earth Institute at Columbia University (including regional MDG Centers in Kenya and Mali), Millennium Promise, and the UNDP. (For more information about these institutions see Appendix G.) The MVP is working to build a diverse, global network of partners in support of the MDGs, and an important component of the Millennium Villages model is collaboration with other organizations to leverage their technical expertise, financial resources, and support for the MVP and the broader global MDG agenda. There are, therefore, dozens of partnerships between the MVP and businesses, international organizations, local non-governmental organizations, government agencies, and other groups. For more information about many of the MVP's partners, please visit <http://www.millenniumpromise.org>.

Public Sector

Partnerships with governments, from the local to the national levels, are critical to the success and long-term sustainability of the MVP. Key public sector partnerships and collaborations include MVP program countries and select donor nations. Many examples of this approach are described below.

Governments with MVP sites

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 partnership 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 for local health workers and traditional healers to develop a coordinated strategy.

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. The government has also been actively involved in road construction and maintenance and electricity grid extension.

Government of Kenya. MVP 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 MVP interventions. The Dertu team hosts monthly planning meetings with representatives from the Government of Kenya, UN agencies, and other local NGOs. In 2008, the Ministry of Livestock supported the Dertu Millennium Village in providing financing for livestock microcredit for local pastoralists. In Sauri, local Members of Parliament

and district officials have been highly involved in supporting the agricultural finance program. All six health facilities in the cluster are run in cooperation with the Ministry of Health. In 2008, the Yara local government committed to working with the Sauri cluster to develop a major market center in Yara 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, President Bingu wa Mutharika demonstrated extensive support for the Millennium Villages Project, including visiting the Mwandama cluster and speaking in strong support of the MVP at the Millennium Promise Annual Partners Meeting in New York. The Permanent Secretary in the Ministry of Agriculture has also been a strong supporter, indentifying 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 feeder roads rehabilitation. 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.

Government of Mali. The MVP 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. 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 Segou 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 MVP is receiving a strong technical support from the local and regional governments, especially on roads 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 saw the secondment of local officials in agriculture, health, and water to support project activities.

As discussed above, Mali is launching an national initiative to scale up the Millennium Villages-approach to 166 of its most vulnerable communities, reaching approximately two million people.

Government of Nigeria. The MVP has worked closely with government leaders at the national, state, and local levels. In January 2008, the Associate Administrator of the UNDP visited the Millennium Village of Pampaida and met with local, regional and national leaders. Also at the national level, members of the Parliamentary MDG Steering Committee met with the Earth Institute, UNDP, and Millennium Promise in New York, requesting technical support to scale up the MVP model to more than 20 million people around the country with domestic resources freed up by debt relief. The MVP continues to work closely with the President's MDG Advisor, who has been coordinating the broader scale up policy 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 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 the Millennium Villages model to every district in Rwanda as part of its national Vision 2020 *Umurenge* strategy, although implementation progress has been gradual in this regard. Nonetheless, the Minister of Foreign Affairs cited the local MVP success in remarks made at the UN special session on the MDGs on September 22, 2008 during the opening week statements at the General Assembly.

Government of Senegal. The project maintains close contact with local, regional, and national officials. At the local level, the project has helped the communities work with authorities integrate local development plans with the MDGs. 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. Continued partnership is expected in 2009 as the project looks to expand the network of all-weather roads and extend the national electricity grid.

Government of Tanzania. In 2008, Tanzanian President Kikwete visited the Mbola Millennium Villages cluster to lend his support to the project and learn about project interventions. He gave particular note to the school meals program as a model for national scale-up. The local District Commissioner has been a very strong supporter of the project, and has asked for support to scale up the program to reach 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.

Government of Uganda. In 2008, representatives from four ministries in Uganda visited the Millennium Villages Project to learn from project interventions and demonstrate ongoing national commitment to the project. The previous and current Ministers of State for Finance, Planning, and Economic Development have been particularly strong supporters. In August the Millennium Promise CEO met with a few dozen Members of Parliament to discuss emerging lessons from the MVP and a large number of this group subsequently proposed expansion of the MVP to their local constituencies. In Ruhiira, planning collaboration with district officials has become increasingly streamlined. As one example, the local government-operated Kampara Development Project and MVP have partnered to address the needs of individuals with physical disabilities, particularly focused on services for the deaf.

Donor Governments

Republic of Korea. A significant new development in 2008 was the Millennium Promise agreement with Korean partners to support the MVP in existing sites. In November, Millennium Promise signed a Memorandum of Understanding with the Korean International Cooperation Agency (KOICA), the UN World Tourism Organization (UNWTO ST-EP), and the Gyeongsangbuk-do Province to implement the Korean Millennium Villages Project (KMVP) in support of Mbola, Tanzania and Ruhira, Uganda. The Republic of Korea also supports an MV-3 launched in January 2008 in Saimbaina, Madagascar, implemented in partnership with UNDP.

Government of Japan. The Government of Japan was a critical early partner of the Millennium Villages, providing financial support through the UN Human Security Trust Fund to launch nine villages in nine different sites. At the May 2008 Tokyo International Conference on African Development (TICAD), the Government of Japan announced a new commitment to support MV-3s in Benin, Cameroon, Madagascar, and Mozambique.

Government of Norway. In early 2008, the Government of Norway joined the MVP by committing financial support for a new MV-3 in Kokoyah, Liberia.

Altogether the new MV-3s supported by Korea, Japan and Norway will reach approximately 75,000 people.

KEY PRIORITIES MOVING FORWARD

The end of 2008 marked the halfway point for the MVP's first five years of operations. In 2009, each sector has key priorities, as outlined above. Moreover, the project is now at a point in which the global aid environment for 2011 is becoming clearer, and the backdrop for planning a second five-year phase of the project can begin. Apart from this, there are several overarching priorities over the coming year, some identified in response to key challenges to date.

Agricultural Finance

In the MVP's first three major growing seasons, interventions of subsidized seed and fertilizer helped doubled or triple yields for farmers, vastly improving food security. Most of the sites are at or near completion of their five-year agriculture budgets, however, with many of the pressures amplified by the commodity price spikes of 2008. Amidst significant global conceptual progress on agricultural aid policy for smallholders, an international finance breakthrough is still needed to support national input support programs that many African countries have put forward. In the meantime, most MVP farmers must pursue the transition from subsidy to credit to sustain yield gains.

The MVP is working to expand farmers' access to agricultural credit but achieving this remains a generally unsolved problem in rural Africa so the challenge is significant. To this end, the MVP, through Millennium Promise, is partnering with other organizations and existing commercial banks or microfinance institutions that are willing to enter frontier rural areas. Meanwhile, the MVP uses its extensive on the ground community facilitators and agronomists as liaison between the banks and farmers. Initial conversations have already begun with commercial banks in Ghana, Tanzania, and Uganda. On a parallel track, MVP is working to expand other financial services to Millennium Village farmers, with a particular focus on crop insurance. Credit is unlikely to be sustainable until the burden of high climate risk facing African rural lender and borrower is addressed in a more meaningful way.

When a local financial partner is not available, MVP funded and administered the lending scheme itself. Such an approach is a significant burden on staff and resources but allows the MVP to minimize retreats in food security gains while seeking the proper financial partner. The MVP uses available proxies of credit history (e.g., past contributions to community school meal programs) to target the most reliable farmers and creates partnerships with area community leaders to provide the necessary pressure for repayment. The goal is to demonstrate that rural credit for rain-fed crops can be done in a manner that ensures continued access to fertilizer for African farmers and allows, at the least, social profits for the partnering financial institutions. Of course, the early years require a research and development cost as the involved partners figure out the lowest cost approach.

Infrastructure Development

In 2009, the partnership with Ericsson and its local provider partners will continue to expand ICT access while the partnership with JM Eagle will expand piped water; both initiatives will provide tremendous dividends for the MVP sites. Most large-scale infrastructure projects will require the

participation and coordination of multiple key stakeholders, including local and national governments, communities, and public utilities.

MVP staff are working to harmonize this coordination and speed up the implementation process of the above mentioned activities. There is now a much better understanding of the national and local regulations, and relationships with communities and institutions have improved due to the mutual confidence and trust that has been built during the first years of the project. Furthermore, the MVP is working to increase the technical capacity at the local level by organizing training programs, recruiting multi-site technical specialists who can share experiences and best practices across MVP sites, and hiring key, short-term local technical positions to support large-scale infrastructure projects. These strategies should help the MVP to meet challenges faced in the past and achieve the desired targets on improved access to services, including energy and clean water.

Business Development

In 2008, the MVP initiated an intensive investigation to identify business development opportunities across the Millennium Villages, including existing businesses that can be enhanced and new businesses that can be launched. Business opportunities are then evaluated in terms of their feasibility and potential return for the community. Given the rural, agricultural nature of the Millennium Villages, most business development opportunities in the sites are agro-business initiatives entailing crop diversification, which is essential for promoting self-sustaining income generation and for improving income and nutrition outcomes. To support this, the MVP will prioritize irrigation strategies and techniques across all sites. The project will also continue work linking farmers growing higher value crops to markets that generate higher profit margins, without compromising food security for income security.

The business development strategy must encompass the entire value chain of on-farm and off-farm activities, from the production to the commercialization of agricultural and non-agricultural products. These include the delivery of agricultural and non-agricultural inputs to the farming and off-farming sectors, post-harvest handling, processing, transportation, and marketing and distribution of products and services to the consumers. Partners will be required to complete the supply chain with domestic or international buyers to ensure that there is a stable market for the products produced.

In 2009, the business development sector's key priorities will be to launch three to five business development initiatives in the Millennium Villages. These pilot projects are necessary to establish a record of success upon which the MVP can attract new investors and launch initiatives in additional sites. Community participation, training, and sensitization to these activities will be critical at every stage to ensure buy-in and ownership of these projects. So far, the three top business development opportunities identified in 2008 involve honey in Ethiopia, Shea butter in Mali, and sunflowers in Tanzania,

Honey Production in Ethiopia. Honey has been a cottage industry in the Koraro site for many years through the existence of a few hundred hives. In 2008, the MVP developed business plans to expand the production up to 15,000 hives and create an export market for this product, which has the potential to lift almost 1,500 households out of the poverty trap.

Shea Butter Production in Mali. Although thousands of Shea trees exist in the region near the Tiby site, there is no infrastructure to maintain the trees properly, or collect and process the Shea nuts. Consequently, the women collecting the nuts are only paid \$0.15 cents/kilogram. Shea butter is used extensively in the food, cosmetics, and pharmaceutical industries and commands a very high price in its refined form. In 2008, the MVP developed a business plan to transform the current Shea industry into a higher quality venture that can produce Shea butter for export markets. The MVP then conducted a successful trial run to produce nuts for eight to ten tons of the Shea butter, a \$20,000 value.

Sunflowers in Tanzania. In 2008, farmers planted sunflowers alongside maize through the agricultural finance program described above. In 2009, a yield of 9,000 tons of sunflower seed, which will be grown on approximately one hectare of land per household, is anticipated. The MVP is working to establish a partnership with the largest sunflower oil mill owner in Tanzania to build a new mill, which would absorb close to 30,000 tons of sunflower and lead to high returns for farmers.

Scaling Up

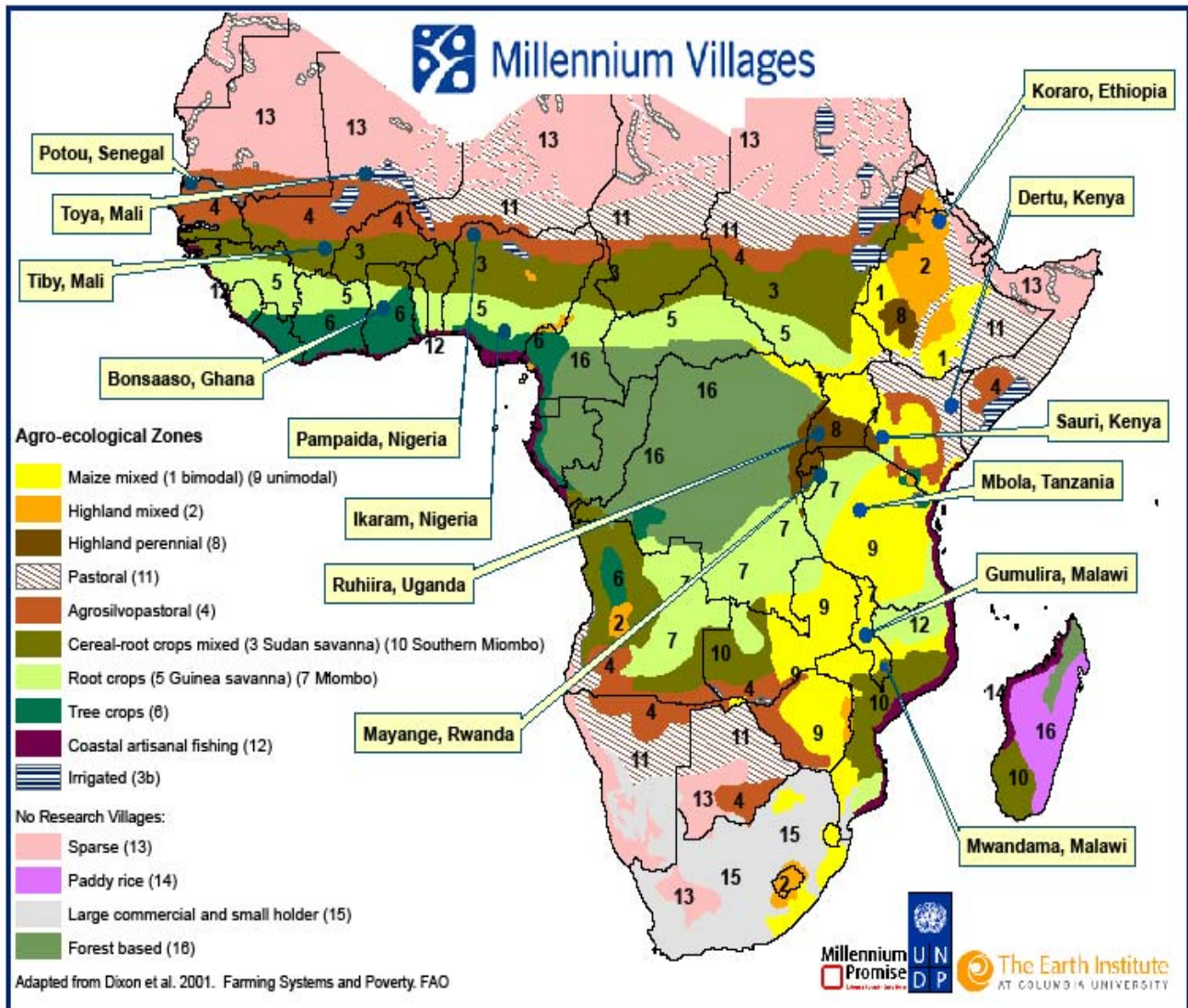
An external review by the Overseas Development Institute (ODI) was released in November 2008 and stated that the MVP has achieved “remarkable results and has demonstrated the impact of greater investment in evidence-based, low-cost interventions at the village level to make progress on the Millennium Development Goals” (p.vii). The report calls for countries to embed the Millennium Village-approach into their national poverty reduction strategies and calls on donors to support these efforts in at least one country in order to take the MVP to national scale. Over the coming year, the MVP will work to enhance the capacity of the communities and appropriate governmental bodies to assume greater ownership and management of MVP activities moving forward. Meanwhile several governments, including those of Mali, Nigeria, and Rwanda, have already put forth national plans to scale-up the MV approach. Other countries have scaled up, or aim to scale up, sector-specific interventions to the regional or national level, such as national subsidies for agricultural inputs in Malawi.

The early success of the MVP has garnered the attention and increased support of regional and national governments throughout sub-Saharan Africa and beyond. As a result, in 2008, there was a high demand to expand the project through the launch of Millennium Villages in new countries, expansion in currently participating countries, and the scale up of successful, sector-specific interventions to the regional and national levels. In 2009, in line with the recommendations of the ODI review, the MVP will place special focus on supporting the national-level scale-up in Mali. An emphasis will also be placed on the national scale-up program in Nigeria.

At the international level, the MVP will continue its effort to incorporate lessons learned and best practices from the MVP into global policies on poverty reduction strategies. The MVP also aims to significantly increase public mobilization around the MVP and the MDGs. The goal of this multi-level engagement strategy is to use the MVP as a platform for mobilizing greater investments in proven, cross-sector interventions designed to help achieve end extreme poverty.

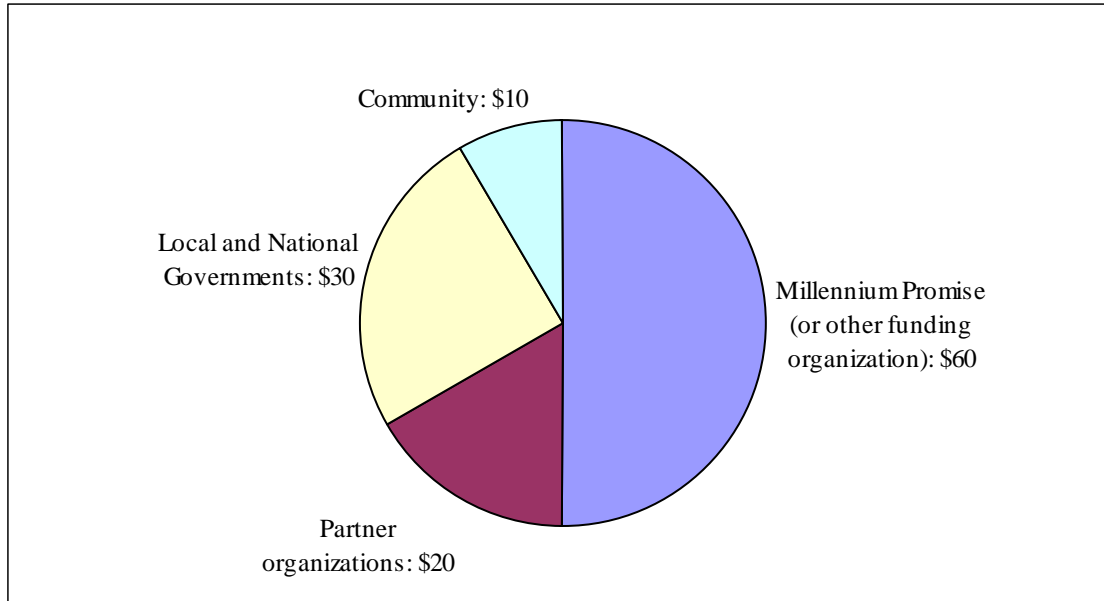
APPENDICES

Appendix A. Africa's Agro-ecological Zones and the Locations of the 14 Millennium Village Sites Implemented in Partnership by the Earth Institute, Millennium Promise, and UNDP



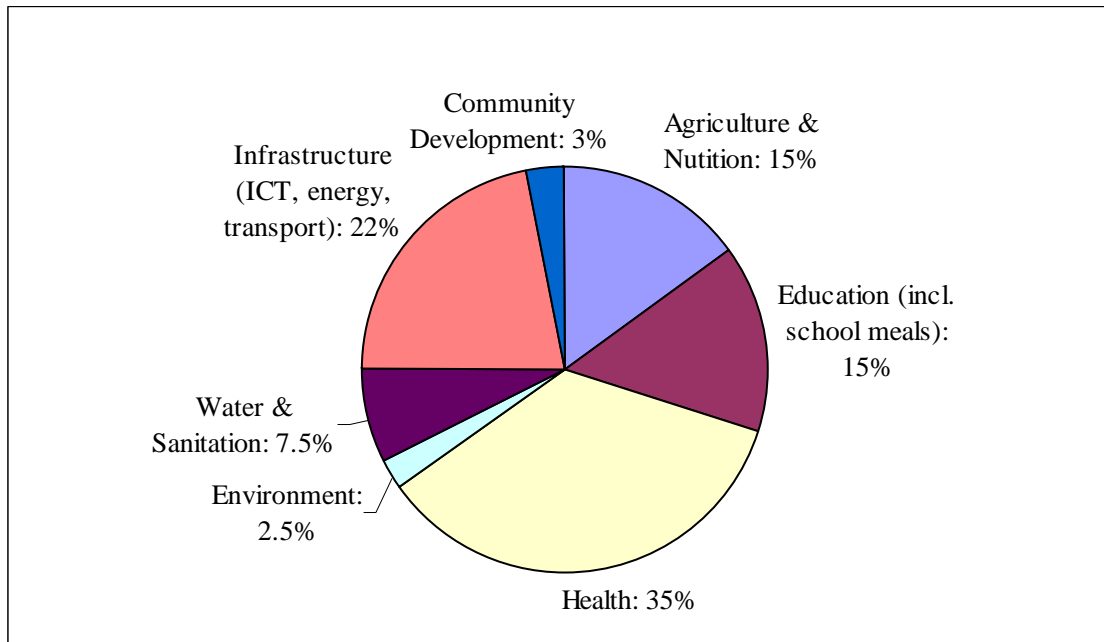
Appendix B. MVP Budget Models

Exhibit B1. MVP Budget Model (\$120 per capita per year): Financial Contributions from Key Stakeholders



*Note: This financial model will be revised in 2009 to reflect lessons learned on project budgets and costing.

Exhibit B2. MVP Budget Allocation by Sector



*Note: This financial model will be revised in 2009 to reflect lessons learned on project budgets and costing.

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, 2008)

Country	Site	MV Type	Number of Villages	Source of Funding	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	UNHSTF	UNDP/ ICRAF/ EI	June 2006
Ghana	Bonsaaso	MV-1	1	UNHSTF	UNDP	June 2006
		MV-2	5	MP	UNDP	June 2006
Malawi	Mwandama	MV-1	1	UNHSTF	UNDP	June 2006
		MV-2	6	MP	UNDP	June 2006
	Gumulira	MV-2	1	MP	UNDP	Oct. 2006
Mali	Tiby	MV-1	1	UNHSTF	UNDP	June 2006
		MV-2	10	MP	UNDP	June 2006
	Toya	MV-2	1	MP	UNDP	Jan. 2008
Nigeria	Ikaram	MV-1	1	UNHSTF	UNDP	June 2006
		MV-2	3	MP	UNDP	June 2006
	Pampaida	MV-1	1	UNHSTF	UNDP	June 2006
		MV-2	2	MP	UNDP	Jan. 2009
Rwanda	Mayange	MV-1	1	EI	MVP Rwanda (EI)	June 2006
		MV-2	3	MP	UNDP	June 2006
Senegal	Potou	MV-1	1	UNHSTF	UNDP	June 2006
		MV-2	5	MP	UNDP	June 2006
Tanzania	Mbola	MV-1	1	UNHSTF	UNDP	June 2006
		MV-2	5	MP	UNDP	June 2006
Uganda	Ruhiira	MV-1	1	UNHSTF	UNDP	June 2006
		MV-2	7	MP	UNDP	June 2006
TOTAL			80			

Exhibit C2. List of new Millennium Villages implemented by UNDP (as of December 31, 2008)

Country	Site Name	MV Type	Number of Villages	Source of Funding	Implementing Organization	Launch Date
Benin	Banikoara	MV-3	3	CEF	UNDP	Q4 2009
Cameroon	Maroua	MV-3	2	CEF	UNDP	Q4 2009
	Meyomessi	MV-3	2	CEF	UNDP	Q4 2009
Liberia	Kokoyah	MV-3	3	Norway	UNDP	Jan. 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	Q3 2009
	Alto Molocue	MV-3	1	CEF	UNDP	Q3 2009
	Monapo	MV-3	1	CEF	UNDP	Q3 2009
Uganda	Kabera-maido	MV-3	TBD	TBD	UNDP	2009
TOTAL			15 +			

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 EI or the UNHSTF, where the Earth Institute 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 Human Security and Trust Fund, through which the Government of Japan's support for MV-1s is channeled
- UNDP: The United Nations Development Programme

Appendix D. Select quotations from the Overseas Development Institute's external review of the MVP

Formative Review of the Millennium Villages Project: Synthesis Report

Published: November 3, 2008

Select quotations

- The Millennium Villages Project (MVP) has achieved remarkable results and has demonstrated the impact of greater investment in evidence-based, low-cost interventions at the village level to make progress on the Millennium Development Goals. (p. vii)
- There is considerable evidence of significant improvements at household and village levels in the health and agriculture sectors, as well as in a number of crosscutting domains. (p. viii)
- The interventions are valued highly by communities, and a number of low-cost interventions are being adopted and scaled up by districts. MVP interventions are closely aligned with the poverty reduction strategies of governments and facilitate the implementation of those strategies in contexts where governments are constrained from doing so. (p. viii)
- Increased yields, thanks to the use of subsidized fertilizers and improved seeds, an intensified agricultural extension system and improvements in natural resource management are particularly visible and spectacular. A more diverse range of crops are grown, contributing to improvements in nutrition and income. (p. ix)
- In health, impressive results have been achieved, partly through the intensive use and professionalization of community health workers. Improved community-based prevention and treatment of common illnesses were found in all MVs, with a special emphasis on malaria, TB and HIV/AIDS. (p. ix)
- Champions [of the MVP] should help to raise the project's visibility through any number of nationally appropriate means, not just discussions in development fora but also through advocacy campaigns. (p. xii)
- When governments want to emulate the MVP by making increased investments in basic development interventions at the village level, donors should support them. (p. xii)
- Observers of the MVP cannot fail to be impressed by the successes achieved since its launch in early 2006, with the establishment, staffing and implementation of a complex and integrated demonstration project, with an elaborate and detailed M&E system, in largely remote and difficult villages across 10 vastly different African countries. The MVP successfully demonstrates that it is possible to achieve rural development outcomes across a whole range of sectors, even in remote rural villages, with a committed team, the necessary political will and sufficient donor funding, that is well within the boundaries of international donor commitments [. . .] (p. 15)
- A number of cases were found where the MVP approach of investing in different and complementary sectors creates positive synergies and spill-over effects which mutually reinforce the benefits across interventions. (p. 17)

- The MVP invests in community development, mainly through on-the-job training and capacity building, something that is noted very positively by beneficiaries. We consider this a main ingredient for sustainability and even for scalability. (p. 18)
- An important component, on which the success of the MVP model depends, are village-level sector committees that are able to contribute to planning, implementing, monitoring and evaluating project interventions. Capacity of these committees is built or strengthened in various fields: community mobilization, leadership, gender mainstreaming, participatory planning or managing group dynamics. Committee members mentioned in Uganda, for example, that this kind of capacity development had empowered and enabled them to manage their own development process. They also noted that, in contrast with government-initiated committees, under the MVP they have had the chance to discuss issues and change proposals instead of being merely passive recipients of ideas presented to them. (p. 20)
- The fact that the MVP is implemented differently in different countries and sectors demonstrates the willingness of project implementers to adapt the model to requirements in the different countries and to some extent to different administrative and political realities as well as to test alternative strategies to achieving the MDGs [. . .] The review findings suggest that the MVP has an adaptive and responsive approach, which was found recurrently in the local team efforts to ensure that activities carried out were facilitating the process of meeting the MDGs. From this angle, the adaptation of the model is viewed as a positive project achievement; by taking local conditions into consideration the MVP contributes to the sustainability of activities over the long run. (pp. 20–21)
- One mechanism which arguably fosters and enables ownership is the capacity development of government staff and the institutions and structures in which they work. The MVP actively includes government staff in training activities whenever possible. Capacity development and training workshops are also provided for local NGOs and CBOs in various fields and has enhanced their capacity in planning, implementing activities and providing services. At the household level, a broad range of capacity development and training activities are provided in both the agricultural and health sectors. We are convinced that these skills, knowledge and expertise developed through the project are tangible results that will persist. We also conclude that this knowledge, if applied, will make significant contributions towards achieving the MDGs in these villages. (p. 29)
- In a short period, the MVP has recorded remarkable achievements on the ground. MVP-type interventions in rural economies in Africa are patently and urgently necessary and the efforts of the MVP are to be highly commended – not least for enabling governments to implement stated policy and for piloting different strategies to enable them to do so more efficiently. As a testament to its early achievements, a number of governments have requested support to replicate such rural investments outside the present MVPs. Moreover, additional countries have requested support to launch their own MVPs. (p. 51)
- The continued and scaled-up success of interventions, as piloted by the MVP, depends on donors meeting their commitments, and it is only right that they do so. (p. 51)
- The MVP architects acknowledge that village-level investments are just one piece of the larger development puzzle and support auxiliary efforts and champion other development partners to invest more heavily in [rural-urban linkages]. It is unrealistic to expect equal and simultaneous progress on these in the current global aid policy environment. Indeed, there

are plenty of gains that can be made – as the MVP shows – despite shortcomings in these aspects. (p. 51)

- The MVP has elected to concentrate its efforts at the village level to demonstrate that the MDGs can be reached in rural communities in a short period of time. Testing the viability of a vertically integrated model to deliver sustainable development outcomes is outside the current financial envelope of the MVP. We recommend that OSI, other private philanthropists, donors and the private sector consider funding these complementary investments in a number of the present MVP countries over the medium term. When governments want to emulate the MVP by making increased investments in basic development interventions at the village level, donors should support them. Moreover, both governments and donors should consider how such investments can be sustained and scaled-up. (pp. 52–53)
- The UN Secretary-General’s MDG Steering Group calls on multilateral organizations to assist African governments to prepare “Gleneagles/MDG scenarios” in coordination with development partners at [the] country level. Work on these scenarios is underway in a number of MVP and non-MVP countries and they provide an excellent entry point for integration of MVP scaling-up. (p. 52)
- We advocate that, in those sites where governments have expressed their intention to introduce or scale up MVP-type investments, development partners support them with additional finance. Such efforts should be located within national development strategies, such as PRSPs and national development plans, and indeed should be key components of them. (p. 53)

Appendix E. Select Media Coverage of the Millennium Villages Project

Media coverage of the Millennium Villages and its implementing partners' (the Earth Institute, Millennium Promise and UNDP) work to help achieve the MDGs more broadly, is critical to influencing policy discussions and mobilizing public awareness on global extreme poverty. A list of key media coverage from 2008 is below. Examples of topics addressed in this coverage include:

- **New York Times, “Ensuring That Gifts Go Where They’re Needed.” November 10th, 2008 by Jan M. Rosen.**
Millennium Promise and the MVP are highlighted in the New York Times special giving section. The article includes quotes from Millennium Promise CEO John W. McArthur, Professor Jeffrey D. Sachs, and George Soros on the impact of the Millennium Villages project. The article helps call for ongoing private and public engagement amidst the global financial crisis.
- **Frontline, “Rwanda: Millennium Village. After 1994 genocide, a country journeys back.” Broadcast October 30th, 2008 by Janet Tobias for Rough Cut.**
Frontline takes a journey to the Millennium Villages Project in Mayange, Rwanda and reports on how the project is improving people's lives and making progress in agriculture, education, health, and infrastructure. The video available at: http://www.pbs.org/frontlineworld/rough/2008/10/rwanda_after_th.html
- **Daily Monitor, “Ruhira brings hope to pregnant mothers.” August 7th, 2008 by Otushabire Tibyangye.**
The Daily Monitor in Uganda covered a visit to Ruhira by John McArthur. The article reports that health services for pregnant mothers have dramatically increased in Ruhira since the beginning of the Millennium Villages Project.
- **Financial Times, “Malawi cultivates cash gains for its farmers.” June 9th, 2008 by Alan Beattie.**
Financial Times article covers the national subsidy program for agricultural inputs in Malawi and highlights the successful boosts in crop yields in the Millennium Villages in the country, which helped inspire and inform the national program. The article also discusses the ability to sustain and replicate agricultural subsidy schemes.
- **The East African, “Celtel to Give Internet Services to Millennium Villages.” May 19th, 2008 by Philip Ngunjiri.**
The East African article highlights the partnership between the MVP, Zain, and Ericsson that is bringing mobile phone and internet connectivity to the rural communities in the Millennium Villages across sub-Saharan Africa.

2008 Coverage of the MVP

Arkansas Democrat Gazette

“Tyson Helping Give Rwandans Skills”

By Stacey Roberts

December 18, 2008

Daily Monitor

“Isingiro Residents Embark on Saving the Environment”

By Otushabire Tibyangye

November 26, 2008

New York Times

“Ensuring That Gifts Go Where They’re Needed”

By Jan M. Rosen

November 10, 2008

Monitor Online

“Ruhira Residents Reap Wealth from Goat Rearing”

By Otushabire Tibyangye

November 5, 2008

Monitor Online

“Turning Banana Yields Into Cash”

By Otushabire Tibyangye

November 5, 2008

Financial Times

“UN Village Project Boosts Africa”

By Alan Beattie

November 3, 2008

Daily Monitor

“Riding on Goats to Escape Poverty”

By Otushabire Tibyangye

November 1, 2008

Frontline

“Rwanda: Millennium Village
After 1994 genocide, a country journeys
back”

By Janet Tobias for Rough Cut

Broadcast October 30, 2008

CNN

“John Legend’s Hero”

CNN Heroes: Special Reports

Broadcast October 1, 2008

Associated Press

“Wall Street Trader to Sell Stamps for
African Project”

September 10, 2008

New York Times

“Google’s Philanthropy Arm Leads Effort to
Use Weather Data to Fight Disease”

By Eliza Barclay

September 1, 2008

Time Magazine

“Safety in Numbers”

By Jeffrey Sachs

August 28, 2008

Voice of America

“Malawi Rural Dwellers Benefit from
Millennium Villages”

By Lameck Masina

August 25, 2008

Daily Monitor

“Ruhira brings hope to pregnant mothers”

By Otushabire Tibyangye

August 7, 2008

Financial Times

“Hard cash, not subsidies, seen as best help
for poor”

By Alan Beattie

August 6, 2008

The New Vision

“50 Isingiro health workers get boost”

By Abdulkarim Ssendendo

August 5, 2008

Africa Renewal

“Fighting African poverty, village by
village: Innovative project in Ghana focuses
on achieving Millennium goals”

By Ernest Harsch

July 2008

Embassy Magazine

“Canada Slipping in Aid Standings Under
Tories”

By Lee Berthaume

July 30, 2008

Des Moines Register

“Crisis presents opportunity”

By Pedro Sanchez

July 13, 2008

CNN Money

“How GE Gives Away its Money”

By Marc Gunther

July 1, 2008

Christian Science Monitor

“How a Kenyan Village Tripled Its Corn Harvest”

By Eliza Barclay

June 17, 2008

Financial Times

“Malawi cultivates cash gains for its farmers”

By Alan Beattie

June 9, 2008

Financial Times

“Seeds of Change”

By Alan Beattie

June 3, 2008

The Monitor

“Churning Money from Banana Leaves”

By Otushabire Tibyangye

June 2, 2008

Daily Nation

“Pastoralists begin catching up with the rest of the world”

May 22, 2008

The East African

“Celtel to Give Internet Services to Millennium Villages”

By Philip Ngunjiri

May 19, 2008

The Citizen

“Malawi shines in small-scale farming”

By Karen Msiska

May 11, 2008

The Citizen

“Toll-Free Rural Phones Coming”

May 10, 2008

Africa Renewal

“Better health at the click of a button”

By Mary Kimani

May 9, 2008

BBC World Service

“The Food Crisis in Africa”

By Madeleine Morris

May 8, 2008

Panapress

“UN Poverty Plan Ignites Mass School Enrolments in Ghana”

By Kennedy Abwao

May 5, 2008

South African Broadcast Corporation

“UN, Economist Say Locals Must Aid Development”

By Crystal Orderson and Malusi Ntanzu

May 5, 2008

NPR On Point

“The Food Crisis and What To Do About It”

May 5, 2008

Leonard Lopate Show

“Malaria Explained”

May 2, 2008

Huffington Post

“Pomegranates mean prosperity”

By Josh Ruxin

April 22, 2008

New York Times

“Bond Trader to Sell Rare Stamps for Charity”

By Matthew Healey

April 14, 2008

Financial Times

“High-flyers on a different path”

By Sarah Murray

March 15, 2008

The Sunday Times

“Subsidising Agriculture Not Enough”

By Glenn Denning and Jeffrey Sachs

February 28, 2008

Appendix F: Concept Note on the Millennium Villages Project¹: Scalability, Sustainability, and Early Lessons

I. Background

Achieving the Millennium Development Goals (MDGs) in sub-Saharan Africa requires integrated rural development as a core component of the overall economic development strategy. Rural development requires community-based investments in priority sectors including agriculture, health, education, water, transport infrastructure, energy services, and the environment, and effective institutions at the community-level capable of implementing and sustaining these investments. In addition to rural development, the MDGs also require complementary progress in urban areas, in the rollout of national-scale infrastructure (highways, ports, rail, power), and in the voluntary reduction of fertility rates in order to slow runaway population growth.

The Millennium Villages Project (MVP) is a partnership initiative designed to identify and scale-up solutions to the challenge of integrated rural development. The MVP has already helped to highlight at the national and international policy levels several of the key (and until recently, neglected) investments needed for successful rural transformation, including an African Green Revolution for higher agriculture productivity (mainly through improved inputs, diversification, agribusiness development, and agronomic practices); comprehensive malaria control (based on full coverage of long-lasting nets, improved case management, and deployment of community health workers); the expanded training and deployment of community health workers; the expansion of school meal programs using locally produced foods; and the creation of effective community-based institutions.

A recent external review conducted by the Overseas Development Institute described the project's success as follows:

The Millennium Villages Project (MVP) has achieved remarkable results and has demonstrated the impact of greater investment in evidence-based, low-cost interventions at the village-level to make progress on the Millennium Development Goals.

The same report went on to say that:

MVP-type interventions in rural economies in Africa are patently and urgently necessary and the efforts of the MVP are to be highly commended – not least for enabling governments to implement stated policy and for piloting different strategies to enable them to do so more efficiently. As a testament to its early achievements, a number of governments have requested support to replicate such rural investments outside the present MVs [Millennium Villages]. Moreover, additional countries have requested support to launch their own MVs.

The MVP is highlighting the value and feasibility of integrated community-based investments, rather than the one-by-one investment strategies too often deployed in rural areas. Because of budgetary limitations, donors and NGOs too often search for a single “highest impact” or magic bullet initiative that will be most “cost effective”: girls’ education, safe water and sanitation, HIV/AIDS control, livestock, and so forth. One or maybe two of these are deployed in a village,

¹ By John W. McArthur and Jeffrey D. Sachs

without the benefit of a more holistic strategy. The result, all too often, is the lack of sustainability of the individual investment, and the lack of an overall breakthrough out of the poverty trap. Such one-dimensional strategies fail to reach threshold levels of community capital investment needed to break the poverty trap.

There are two reasons for an integrated-investment strategy. First, with multiple objectives (health, nutrition, poverty, disease control, safe water, etc.) we need multiple tools (such as community-based clinics, diversified local food production, commercial farming, malaria control, piped water, etc.). Second, these multiple tools are synergistic. While each has a main target, each contributes to progress on several or all of the goals. Moreover, after decades in which many analysts declared “integrated rural development” (IRD) to be unmanageable (and perhaps unnecessary), the MVP and other projects are showing how IRD can indeed be accomplished using the stronger technologies, policies, information systems, macroeconomic environments, and institutional capacities now available, compared with the much weaker tools and context 30 years ago, when the last wave of integrated rural development was tried.

The MVP resonates extremely well with national and African Union policy makers in Africa, who are grateful for and strongly supportive of the very practical and measurable approaches of the MVP. One reflection of this resonance is the intense interest of governments around the world to join the project, and to expand the project nationally where it already exists. The MVP is constantly receiving requests from African Heads of State to expand the project to their countries, and from current host governments to carry the project to national scale from the one or few clusters of currently existing MVs. Fortunately, a growing number of public and private donors are prepared to back the expansion of the project, though by far not enough to meet the burgeoning demand.

Since 2006, the Millennium Village project has achieved early successes in the following 11 countries: Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, Tanzania, and Uganda. It is currently expanding into Benin, Cameroon, Liberia, and Madagascar. The MVP has received requests from many other countries in Africa and beyond: Haiti, Papua New Guinea, Burkina Faso, Central African Republic, Comoros, the Gambia, Guinea, Sierra Leone, and Togo. This waiting list results from the lack of adequate donor support to scale up the project in line with the incoming requests.

In addition to new countries seeking to join the project, most of the existing host governments are clamoring for an expansion of the project. This is the case, for example, in Mali, Rwanda, Uganda, Kenya, Tanzania, Ethiopia, and Nigeria. Many of these countries have already formulated national-level strategies to expand the MVP approach to all districts, parliamentary constituencies, food-deficit villages, or simply the entire rural population in a country.

The MVP has hit clearly on a crucial and too-often-neglected part of successful development: community-based and community-led integrated rural development, with a simultaneous focus on agriculture, health, education, and infrastructure. Yet in view of the burgeoning demand for this approach, the early and tentative successes must now be backed by a long-term strategy, one that shows how the early successes can be sustained in the long haul, and carried out effectively at the national level.

At a financial level, the scale up of the MVP should be understood in the context of global MDG politics. The MVP is not free. It assumes predictable external donor support on the order of

\$80-100 per person per year in rural areas, for a period of around a decade. This level of external support is in line with global commitments for scaled-up aid. The Gleneagles promises, for example, would amount to around \$100 per African per year in aid as of 2010 if the G8 follows through on these commitments as promised. The proposed scaling up of community-based investments is also fully in line with the policy consensus spelled out in the UN Secretary General's MDG Africa Steering Group Report (July 2008), which has also been adopted by the African Union.

The MVP is aiming to spur broad scaling up of integrated rural investments for MDGs. This scale-up is only possible if the ODA promises for 2010 and 2015 (recently reconfirmed by the Council of the European Union) come true. The MVP will be successful if it: (1) demonstrates the feasibility of integrated investments to achieve the MDGs in impoverished rural Africa; (2) creates new models for community-based delivery, monitoring, and measurement; (3) plays a constructive role in helping the global aid commitments to come to pass, by making the MVP lessons widely known within Africa and internationally; and (4) helps to encourage increased global public financial flows towards more practical and effective ground-level investments rather than to low quality aid.

II. The Millennium Villages Approach

The Millennium Villages emphasize practical mechanisms to implement (1) integrated rural investments; (2) local leadership and community participation; (3) long-term institution building; (4) professional training of community-based management and staff; and (5) global multi-sector partnerships directly with the villages.

Strategy of Integrated Rural Investments. The Millennium Villages carry out integrated targeted investments at the community level in four priority areas: agriculture, health, education, and infrastructure. In 2004, total investments were estimated to cost \$110 per villager per year, plus another \$10 per villager per year for establishing, training, and operating the village-based systems. Thus, the total cost per village was \$120 per person per year. Half of that is mobilized through the MV initiative, and the other half is to be mobilized through partners, including the community itself (\$10), the national government (\$30), and NGO partners (\$20). Given the trends in global inflation and adjustments in the US dollar value over the past five years, the total equivalent cost in 2009 USD might be scaled from \$120 to approximately \$150 per capita.

Importantly, village-level budgets are implemented in a flexible but coherent manner across sites. For example, most sites decided to frontload agriculture budgets into the first few years, while some did not place as much early emphasis on supporting inputs for staple crops. Other sectors, especially those with larger infrastructure investments, are back-loaded out of a necessity borne by process intensity. Others are adjusted based on the pre-existing availability of services and estimated financial needs.

The agricultural investments support an increase in food production and a transformation from subsistence farming to commercial farming. The health interventions target child and maternal survival and the control of the major diseases, including HIV/AIDS, TB, malaria, and worm infections (neglected tropical diseases). The education interventions support universal primary school completion, improvements in school facilities, and the establishment of school meals programs. The infrastructure investments focus on electrification, feeder roads, and water and

sanitation. All of these are areas in which national and international programs, if properly scaled-up as promised at Monterrey and Gleneagles, would support nation-wide investments at the levels envisaged in the MVP.

Local Leadership and Participation. The project assumes that the community itself, in concert with district government (the next higher level of political authority) and with civil society organizations, will take the lead in implementing and sustaining the integrated investment package. All MVP teams are local. There are no expatriates on the ground in leadership positions. Community leadership is constituted by a management team that works together with community committees to promote and as far as possible to ensure full participation, community ownership, gender equity, and accountability at the community-level. For both the committees and the management teams, the MVP provides training in budgeting, leadership, gender awareness, and other areas.

Long-term Institution Building. The MVP emphasizes capacity building mainly through learning-by-doing and in-service training rather than off-site training. It also emphasizes institution building as part of the intervention delivery, rather than a focus on "getting the institutions right" first and then followed by service delivery afterward. The successes of the project – increased food production, disease control, higher school attendance, and the like – demonstrate the possibility to achieve “quick wins” and to build (and strengthen) institutions along the way, rather than several years of preparation of institutions before the interventions begin.

The Millennium Village Project is emphasizing three kinds of long-term institution building at the local level, including:

- Formation of a *community-based management team*, with capacity to guide and implement integrated investments. Many or most rural communities in Africa have some kind of participatory village committees, but very few have professional management teams. District officials are usually responsible for management functions within the villages, but this leaves a crucial capacity gap at the community level. The community management team solves the “last mile” problem of investment design and implementation.
- Formation of *producer organizations*, notably including *farmer cooperative groups*. One goal is for each cluster to have its own farmers’ cooperative that will carry out functions including: financing and procuring inputs (fertilizer, improved seeds), storing harvests in safe locations, marketing village farm outputs, diversifying agricultural and agribusiness production, and establishing market linkages between the communities and the local, national, and international markets.
- Introduction or spread of *microfinance institutions*, including both saving and lending operations. The goal is to connect each household with an MFI, especially to encourage saving accounts and lending for small-scale business startups.

Professional & Multi-sector Community-based Management and Staff. The MVP emphasizes professional training of the multi-sector management team as well as community-based staff (e.g. in health, agriculture, and infrastructure). The project recommends

“professionalization” of community-based expertise, for example by putting community health workers on a proper payroll and in-service training program. Typically today, community health workers are volunteers, and lack adequate training and professionalization.

Global Multi-Sector Partnerships for Development. The MVP has created a global network of expertise in science, policy, and implementation that connects day-to-day problem solving across businesses, universities, international agencies, national governments, local governments, private philanthropies, non-profit organizations, and individual community leaders. The focus on problem-solving leverages the respective strengths of each constituency in a coherent, practical, and action-oriented framework to advance the achievement of the Millennium Development Goals on the ground in Africa. The partnership embraces three sectors with global reach: business and civil society (including NGO leadership, foundations, philanthropies, and individual volunteers), the scientific community, and the policy community. These three global sectors are mobilized through the teamwork of Millennium Promise, which has principal leadership vis-à-vis business and civil society; the Earth Institute, with its network of scientific expertise; and the UN Development Program, with its partnerships throughout the international agencies. Bolstered by new and emerging technologies for information connectivity, this network is evolving into a new and unique form of outcome-oriented global partnership for development.

III. Scalability and integration into national strategies

The MVP often gets caught in a contradictory critique. Since larger donor funding was not available in 2006, the project started at a modest scale of less than half a million people in order to demonstrate success. Meanwhile, it is often criticized for only “local” successes when larger ones are needed. In reality, the issue of scale has a practical bottom line. To achieve the MDGs and the escape from extreme poverty, each rural community in rural Africa will need functioning clinics, schools, safe water points and sanitation, agricultural upgrading, and roads and power. This objective might seem impossible at first glance, but the experience from the MVP suggests that it is feasible with focused and scaled effort. Scaling up of community-based investments and institutions can proceed rapidly and in an organized manner. Indeed, African countries are pursuing many pathways for expanding from the MVs to achieve universal access, including at least the six below. Each of these presents clear opportunities for the scaling up of MVP concepts and methods, though each is limited by the availability of donor finance, which is a limiting factor to more rapid and comprehensive progress.

1. **Expansion of existing clusters to larger administrative scales, such as Millennium Districts.** The largest MV clusters currently reach up to 60,000 people. The incremental administrative challenge is to deliver services at a higher administrative level, such as a district or province. This implies replicating village-level service delivery, as in the MVs, and also adding regional-level service delivery such as roads, electricity grids, and health referral systems. For example, the Government of Kenya has initiated a process to draft plans for 8 “Millennium Districts” across the country, each with a population of roughly 500,000 people. Similarly the Government of Ethiopia is considering an MV-inspired approach to the Ogaden region, broadening the scope of a development program that was originally conceived to focus on irrigation. Expansion efforts can also begin to include connections to nearby urban centers, such as have been identified through the Millennium Cities initiative.

2. **Expansion to new MV sites.** Based on the experience of the Millennium Villages, several governments are preparing plans for replication of the MV approach in other parts of the country. For example, the Government of Nigeria has recently started drafting a strategy to expand the MVs to reach 20 million people across 36 states, financed through its own resources freed up by debt relief. The Government of Uganda aims to initiate an MV-style “model sub-county” of approximately 25,000 people in each of 10 districts spread across the country’s four main regions, including special emphasis on post-conflict sites in the northern region. The Government of Rwanda has proposed a similar approach to initiate an MV in each of 30 districts as part of its Vision 2020 Umurenge national strategy. These latter two countries require incremental external financing in order to implement their programs.
3. **Targeted support to the poorest communities.** The Government of Mali has identified the 166 poorest *communes* (with a total population of approximately 2 million people) that require targeted cross-sectoral support, following on the MV lessons in Tily. Such a means-tested approach can guide a government’s efforts to prioritize multi-sectoral support to its poorest and most vulnerable populations. As compared to the first approach, in this case, governments have indicated a need to focus on specific sectors and pockets of poverty in an intensive way with the objective of seeing a rapid reduction in poverty and inequality. The experience of the MVs offers a practical example of how resources can be deployed to invest in the poorest and most marginalized sections of society. The MV approach of cross-sectoral targeting is a novel and practical way of reaching the poorest people in a systematic manner.
4. **National expansion of specific successful interventions.** Often a country’s policy environment is ripe for the expansion of a specific MV-piloted intervention before it is ready for broader scale-up of multi-sectoral community approaches. For example, the Sauri MV cluster helped demonstrate the success of free mass distribution of bednets and helped advance the Kenyan Ministry of Health’s national bednet distribution program. Similarly the Mwandama MV cluster’s successful fertilizer support program helped advance Malawi’s country-wide agricultural input support program that has become the model for all of Africa.

The proliferation of global sector-specific funding mechanisms will amplify this intervention-focused dynamic. For example, as of September 2008 the global malaria control community has set mobilized more than \$3 billion to finance its April 2008 commitment that every African sleeping site in an endemic malaria zone will be covered with a modern bednet by the end of 2010. This scale-up will likely happen much faster than Millennium Villages could, and should be considered a success on its own merits. Meanwhile the U.S. Congress has recently authorized nearly \$10 billion per year for African health initiatives over five years, more than twice the total current US annual official development assistance (ODA) to Africa. A crucial global effort is also underway to launch a global financing mechanism for smallholder agricultural inputs, backed by pivotal leadership from the Government of Spain. This “vertical” sector support will likely make a major contribution to the health MDGs in Africa, again on its own merits, but will need to be integrated with other sector programs – such as education and infrastructure – in community-level delivery mechanisms.

5. **Rounding out service delivery among existing community development programs to “MDG-ize” them.** Most community development programs, either NGO-led or government-led, focus on a limited number of sectors, typically with a limited budget. Education projects are usually located in different villages than water projects, which are in turn usually disconnected from income-generation projects and women’s empowerment projects. The MVs can be used as a *concept*, not only a project, to help other organizations identify opportunities for sectoral expansion in their initiatives, and to partner with complementary organizations. As the UN moves towards “delivering as one,” the MVs offer a practical approach for coordinating the substantive support from different development partners around a cohesive and common set of objectives. For example, a community-based agriculture or micro-credit organization supported by FAO can join forces with organizations delivering basic health and education (UNICEF, UNESCO), and infrastructure (World Bank, African Development Bank) and so forth, such that communities are supported to achieve *all* of the MDGs rather than just one or two of the MDGs at a time.
6. **Private-sector collaborations.** There is the clear readiness of the private sector to participate in the local scale-up of the MDGs. Many private businesses are currently participating in the MVP, including Ericsson (expanding mobile telephony and wireless internet coverage), General Electric (in health care equipment), JM Eagle (in large-scale water piping), Swiss Re (in support of new weather-based insurance), Becton Dickson (in diagnostics and pharmaceutical supplies), Novartis (in malaria medicines), Pepsi (in support of village-based irrigation), Lenovo and Sony (in supply of computers), and Sumitomo Chemical (in provision of long-lasting insecticide-treated bed nets) among others. Many other companies such as KPMG and DLA Piper have contributed to the Millennium Cities initiative to identify investment opportunities in nearby urban economic centers, where processing of rural commodities will most likely need to take place. Still more companies, national and transnational, are looking for opportunities to engage in corporate social responsibility and to advance the MDGs in areas where they are themselves operating.
7. **Social investments for natural resource and commodity investors.** Several major international natural resource companies have indicated a desire to invest in integrated rural development programs in the regions of mines and plantation (e.g. rubber and palm oil), as well as along transport (e.g. rail and pipeline) routes. MVs are a natural organizing principle through which such companies can complement their production activities with community investments to ensure social sustainability. Several major international companies have also indicated a corporate social responsibility-inspired interest in supporting MVs in areas where they source general commodities and products, with the possibility of establishing a social marketing brand.
8. **Scaling up the global multi-sector network for development.** A large number of leaders from business, academia, government, communities of faith, student bodies, and the general public around the world have indicated their desire to join the MVP’s global partnership network for development. The UNDP is bringing in its partners around the world. And working closely with the Earth Institute and its global scientific network, Millennium Promise is approached daily from all corners of the globe by individuals and organizations that are keen to contribute to the network’s efforts for the MDGs. For example, Millennium Promise Japan was launched in 2008 to connect leaders from

different sectors of Japanese society, and discussions are underway to launch national affiliates in several industrialized and African countries.

All of the above mechanisms highlight ways in which international development organizations can support bottom-up expansion of MV successes in rural Africa. The Millennium Villages also provide an operational framework for ensuring national-level sector programs backed by increased official development assistance are coherently administered at the community-level. For example, the Global Fund to Fight AIDS, TB, and Malaria is supporting national governments in expanding rural services in the fight against these three pandemic diseases and the proposed African Green Revolution Fund will support rural investments in agriculture. The local implementation of these efforts requires increased capacity in the villages. There must be skilled workers, such as community health workers, or community agriculture workers, to enable the community to support and absorb the national-scale financing effectively. The communities must also be trained in budgeting, accountability, and MDG-based planning. The MVP aims to work with UNCDF in strengthening these local institutional processes moving forward.

IV. Sustainability of the MV approach

The MVP should be considered as a 10-year project through to 2016. Committed donor financing was raised and allocated for the first five years, defining the first phase of operations. The second five years will require additional donor financing, not yet raised or allocated, but much less than \$60 per person per year. A realistic project funding range for the second five years will be \$10-20 per person per year, with actual financing needs depending strongly on the levels of international donor aid and (therefore) national budgets during the second phase. If large-scale donor aid is on track, less direct aid to the MVs will be needed.

The MVP is committed to making every effort to ensure that progress in social service delivery and income generation achieved in the first phase of the project is not reversed in the second phase or beyond, when direct donor assistance to the MVP declines. This will be accomplished by a combination of the progress in income generation and institutional development within the MVs, together with increased donor aid at the national-level, which will then reach the MVs through national programs rather than through the MVP.

Years 1-5: Implementation of key interventions in agriculture, health, education, and infrastructure. The goal is to achieve the non-income MDG outcomes by the end of year five, compared with the baseline of 2006, including: reduction of hunger by half or more; universal primary school completion rates; reduction of maternal mortality by three-fourths and child mortality by two-thirds compared with baseline; and universal access to safe drinking water. There will also be a major advance in reducing extreme poverty, perhaps by half or more, but full sustainability in poverty reduction will still need to be secured in the second phase of the project.

Years 6-10: Consolidation of interventions and MDG achievements, further progress in commercialization of agriculture and development of new businesses, especially in agribusiness, and the expansion and consolidation of key institutions (community-based management, farmers' cooperatives, and microfinance). By the end of year 10, the community institutions should be secure, the village should be self-sustaining (in the context of national-level provision of social services and infrastructure), and growth

should be robust. Extreme poverty should be reduced by more than half relative to the baseline (2006).

The transition from \$60 per person per year in Phase I to \$10-20 per person per year in Phase II will be accomplished in three main ways: (1) increased national budgeting for core social sector delivery (schools, clinics), backed by ODA, which will reach the MV clusters as a matter of course; (2) improved incomes in the MVs themselves by the end of the fifth year; (3) a continuation of institution building in years 6-10 of the project, backed by modest local community funding contributions. The income generation progress in Phase II (starting in year 3 of Phase I) will require progress on business development with *commercial financing* of the farm sector, complementary to donor finance and intermediated by the emerging producer cooperatives.

In addition to the environmental sustainability efforts that are central to the MV's programmatic efforts, operational sustainability between Phases I and II needs to be divided in two parts: (1) public service delivery and (2) self-sustaining private sector income generation. Each of these in turn requires consideration along two dimensions, (a) institution building and (b) financing.

1. Public service delivery.

- a. **Institution building.** The Millennium Villages deliver basic services, often in partnership with local government agencies, and always in partnership with local community structures. Organizational modalities are in line with government policy, with innovations such as the training and deployment of community health workers, low-skilled workers taught to provide simple preventive and curative services to address the majority of morbidity sources. The key organizational challenge for public sector sustainability is, therefore, to identify the community governance structure that can continue to administer multi-sectoral services. The MV experiences to date suggest that this should include (i) a community management team; (ii) sector committees that govern community decision making and program monitoring; (iii) mechanisms to coordinate between community administration and higher levels of government; and (iv) an emphasis on women's representation at all levels.
- b. **Sources of finance.** Low-income communities are too poor to afford basic health, education and other key public services. It is well-established international policy that developing and developed country public finance must play the central role for basic services. It is also why, for example, the abolition of user fees has been broadly advocated and led to tremendous gains when implemented. The Gleneagles ODA promises of roughly \$100 per African per year are essential for providing these basic services. Note also that the OECD donor commitments are to *increase* ODA to Africa beyond the 2010 date, due in particular to Europe's commitment to reach 0.7% of GNI in aid by 2015. Therefore, the availability of external donor financing is expected to increase significantly *above* \$100 per capita after 2010.

The Millennium Villages show us that basic services can be provided within a relatively modest financing envelope and well within the aid commitments. They also clearly show us that without the actual delivery of increased donor flows, the MDGs are likely to be missed by a wide margin in most of rural Africa. If the ODA commitments do not come to fruition and the resources are not available for mass

scale-up then scaling up will not succeed. The MVP program team plays an ongoing role in contributing to global advocacy, so failure would not be for lack of effort. Under the more limited aid scenario, the MVP will still help to stimulate national level scale-up processes of particular sector intervention packages, such as scaled-up inputs of agriculture and malaria control; and successful replication or imitation of MV-style integrated community-level support, but perhaps at more limited funding.

2. Self-sustaining income generation.

- a. **Institution building.** Agriculture is by far the dominant economic activity in rural sub-Saharan Africa. A first step to escaping the sub-subsistence poverty trap in rural settings is to support a boost in farm productivity that provides a reliable food surplus for local trade, new opportunities for diversification into cash crops, and the freeing up of labor for off-farm economic activity. The first two years of the MVP emphasized the first step of boosting food production above subsistence levels, with crop yields typically doubling or more. The current period (years 3-5 of Phase I) emphasizes a multi-pronged approach to supporting farmers' cooperatives; supply chains to urban, regional and international markets; further investments in land improvement and water management; crop diversification; and agribusiness (e.g. food processing).

The MVP is exploring novel approaches to farmer cooperatives, with a design that emphasizes the bundling of services to smallholder farmers, and therefore the aggregation of these services in order to achieve economies of scale. The bundling of services includes: financing of agricultural inputs; procurement of inputs; development of community nurseries; agricultural extension services; pest control; post-harvest storage; marketing of community outputs; climate and crop insurance; crop diversification; and financial intermediation between local producers and investors, both domestic and foreign. This component will play a major role during years 3-10 of the MVP.

Another crucial component of income generation is the spread of microfinance institutions in the MVs. The MVP goal is community-wide access to financial services by the end of Phase I. In Kenya, and soon in other clusters, mobile-phone-based banking is being introduced (M-PESA in the Kenya system).

- b. **Sources of finance.** The first phase of MV support to agriculture emphasizes subsidies – or “public finance” equivalents – for basic inputs. The project inherently faces the need to phase-out this subsidy support to agriculture and transition to private finance mechanisms for the productive sector. As the MVP phases out its own subsidies, these will be partly replaced by national-level subsidies (as in Malawi), and partly by a transition from subsidies to seasonal input credits.

It is a general challenge in Africa that microfinance has not thrived in the agricultural sector. Microfinance mostly covers service sector activities and small industry (e.g. bakeries and trade) with regular monthly cash flows rather than agriculture inputs financing with highly seasonal and risky cash flows (and other complications as well, requiring bundling of services). The project is taking steps to introduce microfinance for inputs, through the bundling of services. The farmers' cooperative in Tiby, Mali,

for example, has piloted a novel approach to micro-financing of agricultural inputs, translating initial MVP agricultural subsidies into a revolving credit fund for agricultural inputs.

Concurrently, the MVP is supporting the development of an agri-business diversification and scaling-up strategy for each MV site, as well as the up-scaling of local microfinance institutions to facilitate private savings and investment. Irrigation investment strategies are also playing an important role in creating the opportunities for multi-cropping and transition to higher value crops. It is a core objective that all residents in the MVs have bank accounts and access to microfinance services.

V. Some Early Lessons of the MVP Model: Success and Risks

The greatest early successes of the MVP include the following:

- Rapid increase of food production
- Rapid decrease of malaria and other tropical disease burdens
- Rapid deployment of school meal programs
- Rapid deployment of safe water points
- Successful organization of communities into working committees in support of MDG objectives
- Successful development of local management teams, with cluster managers, science coordinators and sector leaders (in health, education, agriculture, and infrastructure in most clusters, and gender and business development in some clusters)
- Successful engagement of women in leadership positions in the MVP
- Rapid deployment of community health workers
- High community morale and buy in
- Successful creation of a global network of support, embracing the private sector, civil society, the scientific community, and the international development organizations

There are several difficulties with the MVP that are not signs of fundamental difficulties, but rather of the artifact that the MVs are “islands of relative prosperity in a sea of poverty.” There is, of course, considerable in-migration into the MVs, both of long-term residents (e.g. family members arriving or returning to the villages), or in-migration of individuals in search of particular services, especially health care at the MV clinics and hospitals. This is a difficulty of the project, fully anticipated but difficult to prevent.

A second “artifact” of the project is that district officials are occasionally reluctant to implement a specific measure (e.g. putting the community health workers on payroll) because of “spillover” and “demonstration” effects to non-MV villages in the district. These objections are not of principle, but objections that arise from current budget constraints. Inequalities in service delivery or in terms of public-sector employment can be difficult to handle. In general, the project has invested considerable time in discussions with the district officials to solve these problems in pragmatic ways. These are practical challenges rather than fundamental obstacles.

A third artifact of the project is its fixed dollar budgets amidst a rapidly changing (mainly deteriorating) global economy. Perhaps most dramatically, the doubling or more of fertilizer prices has limited the capacity of the project’s modest agriculture budget to cover inputs as

planned. The project is therefore accelerating the transition from subsidies to credits for inputs, while working as well to raise global donor aid for input financing in Africa. The depreciation of the dollar, combined with the surge in energy prices, is also taking a large bite out of the real purchasing power of \$60 per person per year.

More problematic and systemic is the limited capacity at the district level to support the rollout of basic infrastructure – including the extension of the power grid to the MVs, the building or maintenance of roads, etc. Part of the difficulty, once again, is simply budgetary. District officials could do much more if they had a larger budget, as promised by donor partners. Part of the difficulty, however, is capacity limits (e.g. the availability of engineers in rural areas), which will take some time to overcome. To scale up the MVP nationwide will certainly require a significant investment in the technical and management capacities of health, engineering, hydrology, and agronomy officials at district level.

VI. Conclusions regarding risks to the MVP

The biggest risk to the MVPs is not its own design or implementation. Solutions can and will be found for agricultural financing, health delivery, infrastructure rollout, and more. The biggest risk by far is that the MVPs remain islands of integrated investments in the midst of business-as-usual under-investments by national governments and international donors. At the core of Africa's challenges lies a poverty trap. Africa lacks the saving and borrowing capacity to finance the critical investments its needs to achieve the MDGs and to escape from extreme poverty. The situation is getting better in some ways (e.g. the spread of literacy, cell phones, and computers), but it is also getting worse in many other important ways: higher world energy prices, environmental degradation, climate change, rising populations, and more. We will need an investment breakthrough to keep ahead of the curve. That investment breakthrough is now advocated by the international community, endorsed by the African Union, backed by the UN Secretary General and UN agencies, and even financed in principle by increased donor funds.

Appendix G. About the Earth Institute, Millennium Promise, and UNDP

The Earth Institute: www.earth.columbia.edu

The Earth Institute is the world's leading academic center for the integrated study of Earth, its environment, and society. The Earth Institute builds upon excellence in the core disciplines-earth sciences, biological sciences, engineering sciences, social sciences, and health sciences-and stresses cross-disciplinary approaches to complex problems. Through research, training and global partnerships, it mobilizes science and technology to advance sustainable development, while placing special emphasis on the needs of the world's poor.

Millennium Promise: www.millenniumpromise.org

The mission of Millennium Promise is to support the achievement of the Millennium Development Goals to halve extreme poverty in Africa by 2015. Millennium Promise works with impoverished communities, national and local governments, and partner organizations to implement high-impact programs aimed at transforming lives on the continent and engaging donor nations, corporations, and the general public in the effort. Our work is premised on the belief that, for the first time in history, our generation has the opportunity to end extreme poverty, hunger, and disease.

UNDP: www.undp.org

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. It is on the ground in 166 countries, working with them on their own solutions to global and national development challenges. As they develop local capacity, they draw on the people of UNDP and its wide range of partners. UNDP's network links and coordinates global and national efforts to reach the Millennium Development Goals.