

Executive Summary

T**HIS REPORT** an attempt to document progress and lessons learned from the first five years of the Millennium Village Project (MVP) with a focus on investments in infrastructure and services related to energy, transportation, communications and piped water supply. The broad goal of this component of the MVP was to address some of the constraints that a lack of infrastructure and related services had placed on health, agriculture, education and economic activity in a rural, poor setting. The interventions were designed based on a combination of accepted development practices and community priorities.

The objective here is not to test or report on the impact of specific interventions such as roads or electricity access on people's welfare or health—which is complex—but rather to understand the issues surrounding the selection, prioritization, procurement and cost effective implementation from a set of proven interventions in settings where technical capacity constraints are significant. The report documents what was done, and suggests future directions. It is aimed at an audience of development practitioners and intended as a resource to learn from and contribute to. It will become a “living document” on the Internet.

The interventions that emerged as most critical in the first half of the five year effort were, first, the need to repair and build more clinics and health posts, schools, classrooms and water access points; and in-

roduce needed services and infrastructure, such as electricity for health facilities, ambulances for emergency transport, sanitation services, efficient cookstoves at schools and accelerated expansion of mobile telephony coverage. In the second half of the five year period, the interventions consisted of repairing bridges and culverts, rehabilitating roads and paving some crucial road links, improving access to irrigation pumps, expanding electric grids where appropriate, installing solar powered pay-as-you-go mini-grids in other dispersed or smaller settlements and promoting household cookstoves, solar lanterns, and ICT services for health management.

Improvements in energy, transportation, ICT (information and communication technologies) and irrigation can aid in the achievement of all the Millennium Development Goals, particularly poverty reduction. Small-scale irrigation pumps have helped farmers in Potou, Senegal, and Tiby, Mali increase their incomes. Improved cookstoves have helped reduce the amount of time and effort spent to collect fuelwood in multiple sites. Solar lanterns in Mwandama, Malawi, have replaced kerosene lighting. A modern electricity connection via SharedSolar is helping a tailor in Uganda work longer hours. A community-run vehicle in Koraro has reduced the cost of transporting farm goods, an urgent intervention that was followed by a better road that has now dramatically enhanced transportation access through private providers. Improvements in roads and electricity services have occurred at every site. Dozens of additional schools

and health clinics have been constructed, increasing access for residents that once lived far from such facilities. Almost all the health facilities that did not have power five years ago now do, and a similar effort can hopefully be undertaken for schools.

Infrastructure and related services contribute to other MDGs, benefitting sectors from health to education, from business to government. Access to telephony enables connectivity between family and friends and opportunities as well as information and communications that could prove vital to health and incomes. There has been a dramatic increase in voice coverage over the last five years through a combination of market forces and assistance from Ericsson, a mobile network equipment provider. Access to a water supply can reduce time burdens and allow larger volumetric use, and with other interventions, could reduce disease. Drinking water access is steadily improving through a combination of local efforts and donations from JM Eagle, a pipe manufacturer. Irrigation also increases profits for farmers while reducing the risk of crop loss. Adequate lighting can facilitate education by enabling children and adults to read and study and have a greater awareness of the world and their own empowerment.

However, developing large-scale energy, water, transportation and ICT infrastructure alone will not fulfill the MDGs; the ability of infrastructure to reduce costs, increase reliability and equity of access is what matters to end users. For example, establishing an electric power line, a mobile phone tower and an improved road near a clinic do not, alone, improve health services. A reliable, low-voltage electricity connection or an LPG refrigerator that is regularly supplied with fuel is required to maintain a vaccine cold-chain. Similarly, a community health program needs mobile phones (with consistent access to electricity) as well as a functioning health system with which workers can keep and share important records. An ambulance helps improve access to emergency health-care, but so does a phone system that enables a response to emergency calls and a working health center to serve patients. While new water points are

useful, unless a community member can call and report a broken pump, and a system for maintenance is in place, the value of the investment is severely curtailed.

Our lesson from the first five years is that we need to now address the management and maintenance of such infrastructure. Using information technologies and working closely with local governments, we must build a combination of human resources and information chains that connect them to deliver the services.

Structure of the Report

Chapter 1 explores the importance of infrastructure and energy to meeting the MDGs, with special emphasis on their importance across multiple sectors. **Chapter 2** offers specific lessons and broad policy recommendations from the implementation of energy and infrastructure programs in the Millennium Villages (MVs) and the programs' associated scaling-up. **Chapter 3** discusses the operational design of projects and the issues related to the implementation of large and small infrastructure programs in a multi-stakeholder context. **Chapter 4** presents a set of proven technical solutions implemented in many of the Millennium Villages, including grid electricity extensions, road improvements, water (piped drinking water and irrigation), solar LED lanterns and improved biomass cookstoves. **Chapter 5** introduces novel tools developed and piloted within the MVP to solve complex and persistent problems in developing country contexts, many of which are now being scaled-up or implemented beyond the Villages. **Chapters 6 through 9** detail the energy and infrastructure profiles of four Millennium Villages: Bonsaaso, Ghana; Potou, Senegal; Sauri, Kenya and Ruhira, Uganda. These chapters provide insights into the specific interventions undertaken in each setting; the progress, lessons learned and future challenges. **Chapter 10** offers a discussion of project maintenance and the implications for sustainability. ■



