

PROGRAMS: MOZAMBIQUE NATIONAL EXPANSION

VillageReach is a non-profit social enterprise. Its mission is to save lives and improve well being in developing countries by increasing last-mile access to healthcare and investing in social businesses that address gaps in community infrastructure. To address the healthcare needs of remote, underserved communities, VillageReach delivers two interconnected solutions: a *logistics platform* to improve cold chain performance, delivery of vaccines and other medical commodities, and information management for health systems in rural areas; and an *incubation platform* to launch and develop social businesses that deliver essential infrastructure services required to support health systems.

ACCESS TO HEALTHCARE IN MOZAMBIQUE

Mozambique represents one of the world's most challenging healthcare environments. Because of poor health services, lack of infrastructure and high poverty levels, life expectancy ranks near the bottom of the United Nations Human Development Index measuring countries' overall standard of living. The vast majority of Mozambique's population lives in rural communities without adequate transportation, communications and energy infrastructure, and with limited access to clean water, reliable food supplies, and healthcare. A major barrier to healthcare access is the overall weakness of the health system and related service infrastructure in remote, rural areas. As a consequence of insufficient vaccination availability, young children suffer the most through needless exposure to life-threatening diseases. The challenge is to provide improvements to the health system that are scalable, sustainable and produce significant impact.

Total Population	21.5m
Rural	17m (80%)
Poverty Rate	54%
Life Expectancy	42
Child Immunizations	66%
Infant Mortality	96/1000
UNDP Human Development Ranking	175/197

PROGRAM APPROACH - FOCUS ON THE LAST MILE

In 2002, VillageReach, the Mozambique Ministry of Health (MISAU), and the Foundation for Community Development (FDC) initiated a program to improve vaccination coverage in the largely rural northern province of Cabo Delgado. In 2006, as a result of the early success in Cabo Delgado, the program was expanded to Nampula province. With an innovative approach to medical logistics, the program significantly improved health worker productivity, healthcare access, quality and use of healthcare in the region. As part of the logistics platform, each month MISAU teams distribute vaccines, propane, syringes, medicines and other essential medical supplies to health centers. VillageReach trained and managed the teams for approximately five years until the system was fully established, understood, working effectively, and integrated into normal MISAU practice.



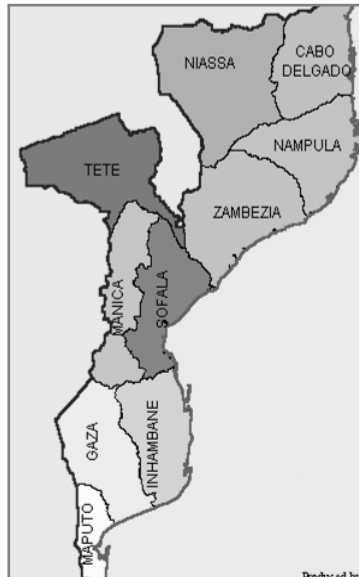
The VillageReach logistics platform uniquely addresses the issue of medical logistics and related infrastructure needs by strengthening the "last mile" of the health system. Whereas other projects address the "top" of the distribution

system (e.g., central and regional warehousing of medical supplies), VillageReach's innovative approach strengthens the health system at the point of care where access to healthcare is most important.

Results of the Mozambique program provide strong evidence of the value of this focus. In 2003, the Demographic and Health Survey (DHS) reported a DPT3 coverage rate (a proxy for full vaccination of children) in Cabo Delgado of 68.9%. In the 2008 evaluation, DPT3 coverage for children had increased to 95.4%. All other vaccines had similar increases resulting in a 92.8% coverage rate. Improvements in supply and inventory management were also recorded: at the end of the program less than 1% of health centers reported a stock out in compared with 80% at program start. The full evaluation can be found at www.villagereach.org.

NATIONAL EXPANSION OF LOGISTICS PLATFORM

In October 2008, the Minister of Health in Mozambique decided to expand the successful demonstration project into a national strategy, fully integrated with MISAU's overall health strategy and goals. MISAU, VillageReach, and FDC are beginning the national expansion of the logistics platform to the remaining nine provinces. As a first step, VillageReach will implement the logistics platform in Niassa and Tete provinces.



Niassa is Mozambique's largest geographic province and least populated. Its population of 1,178,117 is spread over an area of 129,050 km², which corresponds to a density of 9 inhabitants per km². Niassa residents have a life expectancy of 44.7 years and a GDP per capita of \$87. Niassa has 98 health units in 15 districts. A 2005 survey found Niassa had a 55.6% DPT3 coverage rate and a 24.4% drop out rate (BCG through Measles).

Tete, with a population of 1,832,339 spread over an area of 100,724 km², has a density of 18 inhabitants per km². Its residents have a life expectancy of 44.3 years and a GDP per capita of \$86. Tete has 81 health units in 12 districts. A 2005 survey found that Tete had a 60.5% DPT3 coverage rate and a 29.6% drop out rate (BCG through Measles). The low coverage rate and high dropout rates in both provinces indicate that the populations would significantly benefit from the VillageReach logistics platform.

At MISAU's request, VillageReach is also evaluating an alternative approach to the logistics and distribution solution in Cabo Delgado. The alternative approach utilizes district-based storage with teams operating out of the districts, rather than the province, to distribute vaccines and medical

supplies to health centers.

MEASUREMENT AND RESULTS

The following indicators will be reported, analyzed, and monitored each month for every health center in Niassa and Tete: vaccine stock outs, regular health center visits, regular and consistent vaccine supply, refrigerator "up" time, wastage rates, cost-effectiveness, and data management. These indicators are captured and reported via the Internet to stakeholders through a logistics management software tool developed and deployed by VillageReach for MISAU.

In addition to the monthly collection and monitoring of data, a household survey will be implemented at both the beginning and end of the project to assess vaccination coverage rates by district. A key goal is to increase vaccination rates in each participating province to reach, at a minimum, MISAU's goal of 80% coverage in each district. Achieving this goal will decrease morbidity and mortality of young children and mothers from vaccine-preventable diseases.

National expansion of the logistics platform will improve access and quality of care for rural families in Mozambique and support the achievement of Millennium Development Goals #4, reducing child mortality, and #5, improving maternal health. The implementation will also support the Reach Every District (RED) immunization strategy now being implemented by MISAU and its partners.

FUNDING

Expansion of the logistics platform in Niassa and Tete and the Cabo Delgado study is expected to cost approximately \$3.5 million over three years. MISAU will fund approximately \$1.2 million of that amount to cover infrastructure improvement and operating costs. VillageReach is seeking private charitable funding to cover the remaining \$2.3 million for its technical assistance and additional investments in the management information system. After a three-year period in each province, VillageReach will transfer all program elements to MISAU and its partners, which will continue to operate and fund the logistics platform.

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Erati	100.0 %	100.0 %	14.3 %	100.0 %	100.0 %
Memba	22.2 %	33.3 %	0.0 %	55.6 %	33.3 %
Mossuni	33.3 %	33.3 %	16.7 %	33.3 %	50.0 %
Cabacera-Grande	No Stockout	No Stockout	No Stockout	No Stockout	No Stockout
Chocas-Mar	Stockout	Stockout	No Stockout	No Stockout	Stockout
Lunga	Stockout	No Stockout	No Stockout	No Stockout	Stockout
Matibane	No Stockout	No Stockout	No Stockout	No Stockout	No Stockout
MossuniSede	No Stockout	No Stockout	No Stockout	No Stockout	No Stockout
Nacucha	No Stockout	Stockout	Stockout	Stockout	Stockout
NacalaVelha	16.7 %	16.7 %	0.0 %	0.0 %	16.7 %
NacalaPorto	33.3 %	33.3 %	0.0 %	0.0 %	33.3 %
Nacaroba	100.0 %	100.0 %	0.0 %	60.0 %	100.0 %

