Mozambique
Post Compact Monitoring and Evaluation Plan
September 2018

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1.0 Preamble

The Post Compact Monitoring and Evaluation Plan serves as a guide for monitoring the sustainability of Millennium Challenge Corporation (MCC) investments. The Post Compact Monitoring and Evaluation (M&E) Plan is required according to the M&E Policy approved on May 1, 2012: "In conjunction with the Program Closure Plan, MCC and MCA will develop a Post Compact monitoring and evaluation plan designed to observe the persistence of benefits created under the Compact. This plan should describe future monitoring and evaluation activities, identify the individuals and organizations that would undertake these activities, and provide a budget framework for future monitoring and evaluation which would draw upon both MCC and country resources."

2.0 List of Acronyms

AADT	Average Annual Daily Traffic	Média Anual de Tráfego Diário
AIAS	Water Supply & Sanitation Infrastructure Administration	Administração de Infraestruturas de Água e Saneamento
ANE	National Roads Administration	Administração Nacional de Estradas
APR	Annual Performance Report	Relatório de Desempenho Anual
CACM	The Center for Commercial Arbitration, Conciliation, and Mediation	Centro de Arbitragem Comercial, Conciliação e Mediação
CENACARTA	National Cartography and Remote Sensing Center	Centro Nacional de Cartografia e Teledetecção
CEPAGRI	Agriculture Promotion Center	Centro de Promoção da Agricultura
CFJJ	Center for Legal and Judicial Training	Centro de Formação Jurídica e Judiciária
CIF	Compact Implementation Fund	Fundo de Implementação do Compacto
CLF	Community Land Fund	Fundo Comunitário de Terras
CLYD	Coconut Lethal Yellowing Disease	Doença do Amarelecimento Letal do Coqueiro
CTA	Confederation of Business Associations	Confederação das Associações Económicas
DAR	Department of Rural Water	Departamento de Água Rural
DAU	Department of Urban Water	Departamento de Água Urbana
DHS	Demographic Health Survey	Inquérito Demográfico e de Saúde
DUAT	Land Use Property Rights Certificate	Direito de Uso e Aproveitamento de Terra
DNEAP	National Directorate for Studies and Policy Analysis	Direcção Nacional de Estudos e Análise de Políticas
DNTF	National Directorate for Land and Forestry	Direcção Nacional de Terras e Florestas
DQR	Data Quality Review	Revisão da Qualidade de Dados
EIA	Environmental Impact Assessment	Avaliação do Impacto Ambiental
ERR	Economic Rate of Return	Índice de Retorno Económico
FIPAG	Water Supply Investment Fund	Fundo de Investimento para o Património de Abastecimento de Água
FISP	Farmer Income Support Project	Projecto de Apoio ao Rendimento dos Agricultores
GOH	Office Hydraulic Works	Gabinete de Obras Hidráulicas
GoM	Government of Mozambique	Governo de Moçambique
IAE/ABS	Annual Business Survey	Inquérito Anual às Empresas
IEA	Implementing Entity Agreement	Acordo com Entidades de Implementação
IIAM	Agricultural Research Institute of Mozambique	Instituto de Investigação Agrária de Moçambique
INE	National Institute of Statistics	Instituto Nacional de Estatística
IOF	Household Income Survey	Inquérito ao Orçamento Familiar
INFATEC	National Institute for Land Administration and Cadastre Training	Instituto Nacional de Formação em Administração de Terras e Cadastro
IPCC	Institutions for Community Consultation and Participation	Instituições de Participação e Consulta Comunitária
IRI	International Roughness Index	Índice Internacional de Rugosidade das Estradas
ITC	Community Land Fund	Iniciativa de Terras Comunitárias
LPCF	Land Policy Consultative Forum	Fórum Consultivo sobre Políticas de Terras
M&E	Monitoring and Evaluation	Monitoria e Avaliação
MCA	Millennium Challenge Account	Conta do Desafio do Milénio
MCC	Millennium Challenge Corporation	Millennium Challenge Corporation
MSU	Michigan State University	Michigan State University

MICS	Multiple Indicator Cluster Survey	Inquérito de Indicadores Múltiplos
MINAG/DE	Ministry of Agriculture/Department of Economics	Ministério da Agricultura/Depto. de Economia
MIPAR	Rural Water Project Implementation Manual	Manual de Implementação de Projectos de Água Rural
MIS	Management Information System	Sistema de Gestão de Informação
MTR	Mid-term Review	Revisão de Meio-termo do Programa
NLPAG	National Land Project Advisory Group	Grupo Consultivo de Trabalho de Terras
PARPA I	Action Plan for the Reduction of Absolute Poverty; 2001-2005	Plano de Acção para a Redução da Pobreza Absoluta, 2001 - 2005
PARPA II	Action Plan for the Reduction of Absolute Poverty; 2005-2009	Plano de Acção para a Redução da Pobreza Absoluta, 2005 - 2009
PCR	Program Completion Report	Relatório Final do Programa
PDV	Present Discounted Value	Valor Actual Líquido
QPR	Quarterly Performance Report	Relatório de Desempenho Trimestral
RAP	Resettlement Action Plan	Plano de Acção do Reassentamento
SEN	National Statistical System	Sistema Estatístico Nacional
TA	Technical Assistance	Assistência Técnica
TIA	National Agricultural Survey	Trabalho de Inquérito Agrícola
VOC	Vehicle Operating Cost	Custo de Operação de Viatura
WSS	Water Supply & Sanitation Project	Projecto de Abastecimento de Água e Saneamento

3.0 Compact and Objective Overview

3.1 Introduction

On July 13, 2007, the United States of America, acting through the Millennium Challenge Corporation (MCC), and the Government of Mozambique (GOM) signed a Compact. The five year Compact entered into force on September 22, 2008 and ended September 22, 2013. The Post Compact period extends for five years after the close of the Compact. Therefore, the Post Compact period for Mozambique ends on September 22, 2018.

The GOM has designated the Ministry of Economy and Finance as the designated representative to continue monitoring and evaluation of compact investments. MCC has designated the Managing Director for M&E as the representative for this Post Compact M&E Plan.

This Post Compact M&E Plan serves the following functions:

- Gives details about Post Compact monitoring. The designated representative is responsible for on-going monitoring of a small set of indicators and reporting to MCC on an annual basis.

- Provides information about Post Compact evaluations. In addition to Post Compact monitoring, MCC will publish final independent evaluations after the Compact. The GOM is responsible for reviewing and commenting on final evaluations and for their dissemination, including the organization of presentations of the findings of the final evaluations, and for their publishing on a GOM website

3.2 Program Logic

The MCC Compact focused on productive constraints in both rural and urban areas of the Northern Provinces of Mozambique. The Compact involved crucially needed investments in water supply and sanitation, transport infrastructure, land tenure security, agricultural production capacity building and institutional strengthening.

3.2.1 Water Supply and Sanitation Project

Lack of access to water and sanitation is a major barrier to growth and health. Mozambique has one of the lowest levels of per-capita water consumption in the world. With an average of less than 10 liters per day, the country is far below global benchmarks. In addition, girls and women spend hours gathering water which leaves little time for child care, income-generating activities or school attendance.

Additionally, cholera is endemic in major urban areas mainly due to inadequate sanitation and sewerage services, compounded by poor water supply services. This prevalence of cholera and other health impacts caused by poor sanitation also jeopardizes meeting the Millennium Development Goal of reducing infant and child mortality.

The Water Supply and Sanitation Project (WSS Project) interventions included urban and rural water supply, municipal drainage, rehabilitation of the Nacala dam and reservoir, and capacity building and institutional strengthening for water sector entities. The objective of the WSS Project

is to increase the accessibility, reliability, and quality of water supply and storm water drainage services. WSS Project investments target provincial capitals, urban centers and small rural communities. The WSS Project will reduce the onerous costs associated with the provision of potable water; increase the reliability of water supply and municipal drainage services; and improve the health (reduce water-borne diseases; one of the causes of death in children under five years of age) and productivity of individuals, households, and firms.

Changes to the Water Supply and Sanitation Project

The original WSS Project encompassed a) water supply and sanitation services in three large cities and three mid-sized towns in the provinces of Zambézia, Nampula and Cabo Delgado and b) a water supply program in Nampula and Cabo Delgado provinces covering rural areas and small towns. The water supply interventions were divided into interventions in cities where water supply services are owned and managed by the Water Supply Investment Fund (FIPAG) and cities where they are managed by a new Ministry of Public Works and Housing agency; i.e., the Water Supply and Sanitation Infrastructure Administration (AIAS). AIAS manages the implementation of compact investments in municipal drainage systems.

In addition, storm drainage systems were rehabilitated or added to improve drainage efficiency which protects urban land usage.

At the time of compact signing, Water Supply and Sanitation Project investments were to be implemented in three of the four Northern provinces including (a) water supply services in Quelimane city (provincial capital of Zambézia Province), Nampula city (provincial capital of Nampula Province) and Pemba city (provincial capital of Cabo Delgado Province) and five mid-sized towns (Montepuez, Nacala, Monapo, Gurúè and Mocuba); (b) sanitation and storm and waste-water drainage in three large cities (Quelimane, Nampula and Pemba) and three mid-sized towns (Nacala, Mocuba and Gurúè); (c) the rehabilitation and raising of the Nacala City dam and reservoir; and (d) the installation of 350 hand pumps in Nampula and the installation of 250 hand pumps in Cabo Delgado rural communities.

As a result of three successive re-scopings (December 21, 2010, April 29, 2011 and August 31, 2011), the Water Supply and Sanitation Project was reduced from sixteen activities to eight. The total number of city intervention sites was reduced from eight to four. Apart from a reduction in the number of urban interventions, the scope of the works were significantly reduced including, for example, the elimination of the distribution of water to the resident population, the reduction in the extent of the works of urban drainage systems and the de-scoping of urban sanitation systems to low cost sanitation facilities. Notwithstanding, the compact has funded ground water investigations to determine alternative sources of water for the cities of Pemba, Nacala, Montepuez and Quelimane.

The original compact amount for the Water and Sanitation Project was $203,585,393 USD. The total amount disbursed was $200,221,661.

Re-scoped water supply and sanitation interventions are summarized in the table below.

Table 1: Summary of Water Supply and Sanitation Project Interventions

Activities/Sub-Activities	Compact Funded Interventions

Technical Assistance and Capacity Building Activity	Creation of Asset Management Unit; Build capacity of local institutions to develop policies and manage programs
Urban Water Supply Systems Activity	(See sub-activity descriptions)
Nacala Water Supply (sub-activity)	Construction of new water treatment plant, transmission lines, and storage and distribution mains.
Nampula Water Supply (sub-activity)	Rehabilitation of and upgrading of the intake, water treatment works (WTW) and pumping stations and new WTW, transmission line and storage reservoir.
Mocuba Water Supply (sub-activity)	Emergency rehabilitation works of the intake, new treatment works and transmission line.
Municipal Sanitation and Drainage Systems Activity	(See sub-activity descriptions)
Nampula Sanitation (sub-activity)	Construction/rehabilitation of storm water drainage. Public outreach and construction of public low-cost sanitation facilities.
Quelimane Sanitation (sub-activity)	Construction/rehabilitation of storm water drainage Public outreach and construction of public low cost sanitation facilities.
Rehabilitation of Nacala Dam (sub-activity)	Repair and raise the Nacala Dam and reservoir; the main bulk water source for Nacala City.
Rural Water Supply Activity	Construction of 350 rural water supply points equipped with manual hand pumps in Nampula Province. Construction of 250 rural water supply points equipped with manual hand pumps in Cabo Delgado Province. Construction of 8 small scale solar systems in Cabo Delgado Province.

3.2.2 Roads Project

Two-thirds of Mozambique's population depends on agriculture for their livelihood; of these, about 90 percent depend on subsistence agriculture. The cash crop sector is in a reconstruction stage and is experiencing development problems, especially the cashew sector. Other planted cash crops include sugar cane, tea, tobacco, and coconut. The importance of roads in agriculture is

highlighted in the World Bank's Mozambique Agriculture Strategy (2006), which notes that "rebuilding roads and bridges is now a priority and a necessary condition for any growth in the agriculture sector."

Extraction of timber is limited because of a lack of infrastructure, including poor road conditions, but has high development potential due to the richness of high quality timber species. Fisheries, particularly shrimp and prawn, are of importance, with a high potential for production increases. Mozambique has considerable mineral resources, such as coal, tantalite, ilmenite, graphite, iron ore, bauxite, salt, and potentially important reserves of gold, petroleum, and gas. All of these sectors depend upon reliable transportation networks and roads.

The objective of the Roads Project is to improve access to markets, resources, and services; reduce transport costs for the private sector to facilitate investment and commercial traffic; expand connectivity across the northern region and with the southern half of the country; and increase public transport access for individuals to take advantage of employment and other economic opportunities.

The original Roads Project planned to rehabilitate 491 kilometers of high-priority roads in three provinces. Road segments included: 1) Rio Lúrio – Metoro in Cabo Delgado (74 km), 2) Namialo–Rio Lúrio (149.7 km), 3) Nampula–Rio Ligonha in Nampula (103 km), and 4) Nicoadala–Chimuara in Zambézia (167 km).

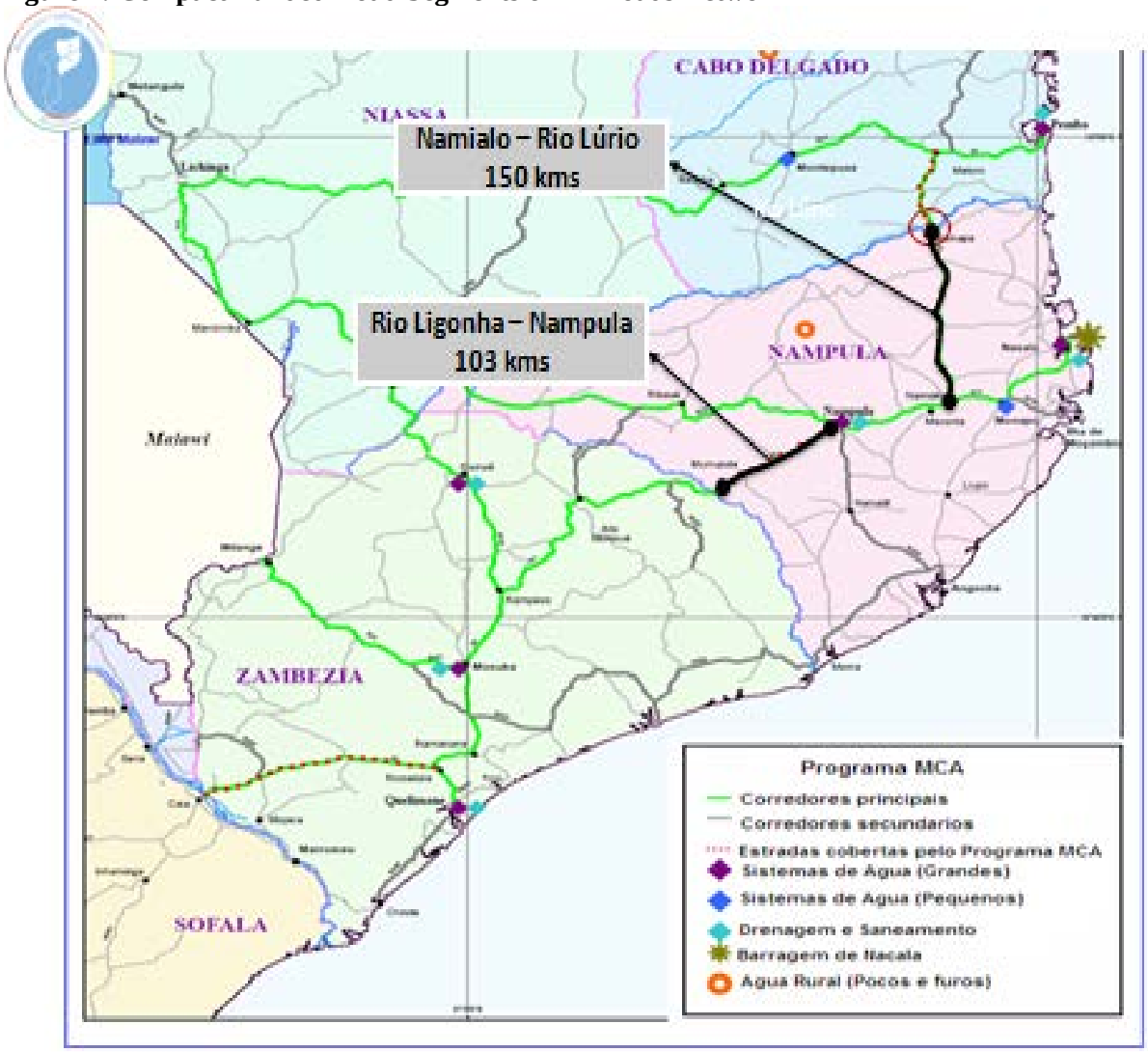
As a result of a January 2011 re-scoping, only the Namialo–Rio Lúrio (149.7 kilometers) and Nampula–Rio Ligonha (103.0 kilometers) road segments in Nampula Province were approved for rehabilitation; refer to the map noted below. The compact also funded the environmental licenses, environmental impact assessments, feasibility studies and preliminary designs for the 197 kilometers of cancelled road segments.

The original compact amount for the Roads Project was $176,307,840 USD. The total amount disbursed was $136,802,301.

Table 2: Summary of Roads Project Interventions

Activities/Sub-Activities	**Compact Funded Interventions**
Road Rehabilitation Activity	Rehabilitated Namialo-Rio Lurio (149.7 km) and Nampula-Rio Ligonha (103.0 km) road segments in Nampula Province.
Technical Assistance and Capacity Building	Build capacity of local institutions to manage programs

Figure 1: Compact Funded Road Segments of N1 Roads Network



3.2.3 Land Tenure Services Project

Land is an important asset for income generation and the creation of wealth. Land has been at the center of a long-standing debate about different choices and visions for growth in rural areas, and is of increasing importance to urban development. In 1997, Mozambique adopted a new legal framework on land tenure aiming to address equitable access to land tenure security for private sector enterprises as well as local communities including recognition of customary rights.

This new legal setup has been recognized by a broad range of actors as a good policy and legal framework. However, implementation of this framework has been slow and requires that an efficient land administration system perform a central supporting role for increased land tenure security and improved access to land in support of economic growth.

On one hand, the lack of simple, fair and clear procedures for acquiring and transferring rights to land are constraining factors for private sector investment. On the other hand, there have been

concerns about improving and securing local community and small farmer land-use rights. As Mozambique has moved on from post-war reconstruction toward a market-based economy, there is an increasing demand for land access and for issuance of land use certificates (DUATs) . This is placing increased pressure on the land administration services, which are already limited in their ability to effectively implement existing legislation.

The Land Tenure Services Project (Land Project) worked on 1) improving policy, 2) upgrading the public land administration agenciess, and 3) facilitating site-specific land access. The Land Project targeted 8 municipalities (Quelimane, Mocuba, Monapo, Nampula, Pemba, Mocimboa da Praia, Lichinga, and Cuamba) and 12 districts (Nicoadala, Morrumbala, Mocuba, Malema, Monapo, Moma, Mocimboa da Praia, Montepuez, Mecufi, Majune, Chibonila, and Lago) in four Northern Mozambique provinces.

The Land Project was comprised of three mutually reinforcing activities: 1) support for an improved policy environment, including addressing implementation problems for the existing land law and engaging in regulatory review to improve upon it (Policy Activity), 2) building the institutional capacity to implement policies and provide quality public land-related services (Institutional Strengthening Activity) and 3) facilitating site-specific land access (Site-Specific Activity) to land use by helping people and business with a) clear information on land rights and access in eight municipalities and 12 districts in Northern Mozambique, b) resolution of conflict with more predictable and speedy resolution of land and commercial disputes and c) registering their grants of land use (DUATs). While the institutional strengthening activities concentrated on the land administration systems in all the 8 municipalities and 12 districts, the urban and rural site-specific activities were implemented in prioritized "hotspot" areas in the 8 municipalities and 12 districts.[1]

Land Policy Monitoring (Policy Activity)

The Land Law adopted in Mozambique in 1997 made significant improvements to the legal, institutional and technical framework for providing more secure land use rights and access to land for all groups in society. However, land authorities are under increasing pressure to implement this framework while simultaneously introducing additional improvements. Mozambique stands to significantly benefit from the development of a new, coherent land formalization vision that links all levels of responsibility and capacity for the provision of land services and the pursuit of an agenda of regulatory and administrative change. In addition, it is believed that an aggressive approach to non-judicial dispute resolution (conciliation, mediation and arbitration) as well as legal professional training and public education about land administration and land rights are important to the transformational goals of the Land Project. Land tenure disputes are plentiful, yet, there are few sources of legal support for rural people. Even private enterprises find it difficult to access high quality legal services related to land issues. The Policy Activity aimed to address these issues.

Specifically, MCC funding planned to support the following five sub-activities under the Policy Activity:[2]

[1] Monapo was an exception because it was able to complete the entire cadaster.

[2] Although the above policy sub-activities were planned, during Compact implementation the Project dedicated less efforts and funding on policy work due to lack of performance in policy change. Instead

1. Based on a needs assessment, further development of a national land administration vision and a coherent implementation strategy that will examine regulations, administrative processes, information systems, institutional structure, and human resources;
2. Provision of technical and logistical support for a process to assess and monitor progress on land legislation, in coordination with the Land Policy Consultative Forum; created with support from the Land Project;
3. Development and implementation of a broad campaign of public education, outreach and awareness raising of non-judicial dispute resolution methods with partners, including but not limited to the Centro de Arbitragem, Conciliação e Mediação, as effective cost and time-saving mechanisms to resolve disputes;
4. Funding for expansion of an on-going program for a) legal and judicial training, b) training for mediators and arbitrators, c) studies and advocacy of the Legal and Judicial Training Center (CFJJ), as well as d) developing new curriculum on mediation and arbitration training for CFJJ's paralegal students working in the northern provinces on commercial and land issues; and
5. Provision of advisory services, including international best-practice knowledge transfer, to the National Directorate of Lands and Forests.

Land Administration Capacity Building (Capacity Building Activity)

The institutional capacity to implement and enforce the present land law and its regulations and to provide high quality efficient services to clients is limited. Limitations include procedural complexity, insufficiently trained personnel and inadequate information, communications and lack of profession-specific technology available at the national, regional and local offices. The Capacity Building Activity supported investments to address these limitations affecting an effective land registry system. Strengthening of the public land administration services aims to a) yield more transparent, reliable and faster processes for maintaining land rights information to meet a growing demand for formal land rights registration, b) improve the investment climate while ensuring security of tenure for land-holding households and local communities and c) generate a revenue base to sustain higher quality services over time.

Specifically, compact funding supported the following interventions:

1. Implementation of a comprehensive approach to professional development and training (including, for example, local requirements and international best practices in cadastral and registration information systems, surveying and titling procedures, land law, etc.) at the national, provincial and local levels, thereby increasing knowledge and awareness of land tenure issues, land records management, surveying techniques, and providing a better understanding of development trends in land policy and services,

implementation focused on the other two Land Project activities: capacity building and site-specific access.

2. Further development of a National Land Information System (LIMS) strategic plan (initially funded by the Italian Government), final design and installation in the four Northern provinces and eight municipalities in which the land project was implemented,[3]
3. Investment in and technical assistance for the upgrading of physical facilities for four provincial and select district land service offices, and
4. Investment in and technical assistance for cadastral development in select municipalities, including cadastral registration within each beneficiary municipality. Although originally planned to be a pilot effort in select municipal neighborhoods, following the needs assessment, the Project worked across municipalities.

Site Specific Facilitation of Land Access (Site Specific Activity)

In the PARPA, the Government committed to undertaking a mapping and inventory initiative to identify and record the actual legal and economic situation of land holdings including the type of land rights (by state authorization, good faith and community) and existing land uses.

Discussions with CTA and others suggested that some simple information and facilitation services would allow progress within the institutional and regulatory climate while the other Land Project activities worked to transform the land administration system.

In the selected, more economically dynamic areas, systematized land holding information is expected to lead to more effective planning and access management of natural resources (including land), reduce the risk of land disputes, and provide more timely and accurate access to land information in support of farm and non-farm investments and/or businesses agreements. At the same time, communities may increasingly seek to enhance the security of their tenure or to engage in business relations with investors through joint ventures or by leasing their lands as allowed for in the land law upon boundary delimitation and title issuance.

Specifically, compact funding supported:

1. Implementation of the mapping and inventory exercise and, as part of that process, the piloting of a sound approach to area-wide registration of land rights in selected “hotspot" areas characterized as more dynamic and/or conflictive. During implementation, the Project targeted 140,000 DUATs to be issued in selected municipalities and over 20,000 DUATs in selected rural districts.
2. Provision of additional funding to the existing program of support for the Community Land Initiative (ITC) to allow its operation in Zambézia, Nampula and Niassa Provinces (prior to compact signing, the land fund was already operating in Gaza, Manica and Cabo Delgado with support from a consortium of six international donors (G-6) including 1) UK Department for International Development (DFID), 2) Royal Netherlands Embassy in Mozambique (RNE), 3) Swiss Agency for Development and Cooperation (SDC), 4) Development Cooperation Ireland (DCI), 5) Swedish International Development Agency (SIDA) and 6)

[3] During implementation, LIMS was installed in all 6 remaining provinces.

Danish International Development Agency (DANIDA). The ITC assisted communities and associations in delimiting and demarcating their boundaries in an effort to secure their land rights, ensure their access to natural resources and increase investment and links with financing opportunities.

3. Make available simple informational tools to streamline investor and farmer access to land in northern Mozambique, such as legal information, guidelines regarding the requirements for negotiating land access with local communities, printed site maps showing land use and existing titles, etc.

The original compact amount for the Land Tenure Services Project was $39,068,307 USD. The total amount disbursed was $39,466,420.

Table 3: Summary of Land Tenure Project Interventions

Activities/Sub-Activities	Compact Funded Interventions
Site Specific Secure Land Access Activity	Facilitating access to land use by helping people and businesses with (i) clear information on land rights and access; (ii) resolution of conflicts with more predictable and speedy resolution of land and commercial disputes – which in turn creates better conditions for investment and business development; and (iii) registering their grants of land use (DUATs)
Urban and Rural Sub-Activities	Mapping and right inventory exercise (all 12 selected districts and 8 municipalities) and piloting an approach to area-wide registration of land rights in "Priority areas"; Streamlining investor and farmer access to land by making available simple informational tools and guidelines (selected "hotspot" areas within the 12 districts and 8 municipalities)
Community Land Use (ICT) Sub-Activity	Support of the Community Land Fund (iTC) (3 provinces – Zambezia, Nampula and Niassa). Initially established by a coalition of donors and implemented in Gaza, Cabo Delgado, and Manica provinces, in 2009 it was replicated and funded by the Land component of MCA to support the community land delimitation, registration, negotiations, and resource planning

Land Administration Capacity Building Activity	Implementation of a comprehensive approach to professional development and training at the national, provincial and local levels, thereby increasing knowledge and awareness of land tenure issues, land records management, surveying techniques, and providing a better understanding of development trends in land policy and services. Further development of a National Land Information System (LIMS) strategic plan, initially funded by the Italian Government, final design and development and installation at in the four Northern provinces and eight municipalities in which the land project was implemented.[4] Upgrading of physical facilities for four provincial and select district land service offices.
Support for National Policy Monitoring Activity	Provision of technical and logistical support for a process to assess and monitor progress on land legislation. Development and implementation of a broad campaign of public education, outreach and awareness raising of non-judicial dispute resolution methods with partners. Funding for expansion of an on-going program for a) legal and judicial training, b) training for mediators and arbitrators, c) studies and advocacy of the Legal and Judicial Training Center (CFJJ), as well as d) developing new curriculum on mediation and arbitration training for CFJJ's paralegal students working in the northern provinces on commercial and land issues.

3.2.4 Farmer Income Support Project

Mozambique is an internationally significant exporter of coconuts and coconut products; grown in Zambézia and Nampula Provinces. Coconut is one of the few crops growing on the impoverished, sandy, and sometimes saline coastal soils of northern Mozambique. It has unique value as a low input, environmentally beneficial, year-round source of nutrition, income and shelter for coastal communities. In the late 1990s, outbreaks of Coconut Lethal Yellowing Disease (CLYD) were confirmed in areas of commercial smallholder plantings in coastal Zambézia. At the 2008 rate of spread, more than 50 percent of the coconut area is likely to be lost by 2017. Given this, technical support is necessary to assist farm enterprises in recovering income that they formerly had from coconut trees. Unless sustained measures are taken over a large area, coconut cultivation will cease in large areas of central Mozambique, with the resulting loss of export earnings and rural livelihood for over 1.7 million people in coastal Zambézia and Nampula.

The objective of the Farmer Income Support Project is to improve productivity of coconut products and encourage diversification into other cash crop production. The Project seeks to eliminate biological and technical barriers hindering economic growth among farms and targeted enterprises located in this Compact area's eastern coastal belt of the Zambézia and Nampula provinces, as

[4] During implementation, LIMS was installed in all remaining provinces.

well as increase incomes lost to CLYD through crop diversification and improved farming practices.

The original compact amount for the Farmer Income Support Project was $17,432,211 USD. The total amount disbursed was $18,857,349.

Table 4: Summary of Farmer Income Support Project Interventions

Activities/Sub-Activities	Compact Funded Interventions
Control Epidemic Disease Activity	Control of CLYD spread of disease through removal and destruction of infection sources and provision of new planting material using Mozambique Green Tall coconut palm seedlings more resistant to the CLYD disease.
Improvement of Productivity Activity	Assist farmers in the CLYD endemic zone to adopt new cropping systems and develop alternative sources of cash income during the time the coconut trees reach productive age as of seven years. Chickpeas, pigeon peas, cowpeas and sesame were promoted.
Rehabilitation of Endemic Areas Activity	Help smallholders farmers to clear their land of dead palms, replant with selected Mozambique Green Tall coconut palm seedlings more resistant to the CLYD disease and plant alternative short-term crops (chick peas, cowpeas, pigeon peas and/or sesame) to increase income during the 5 year (dwarf variety) to 7 year (tall variety) replacement palm re-growth period.
Research and Development Support Activity	The Mozambique Agrarian Research Institute (IIAM) will administer research and development that is directly related to the needs of the a) Control of Epidemic Disease Activity and b) the Rehabilitation of Endemic Areas Activity emphasizing germplasm resistance screening, epidemiological analysis and early disease detection, as well as other research priorities.

3.3 Projected Economic Benefits

The economic benefits for the Mozambique Program are based on the construction of 10 economic rate of return (ERR) models founded on the program logic and the identification of corresponding benefit streams of project interventions in select implementation sites across the four Northern provinces.

3.3.1 Water Supply and Sanitation Project ERR

The Water and Sanitation Project is based on six inter-related models that monetize benefits among a mix of civil works construction and/or rehabilitation activities; including 1) urban water supply works of Nampula city, 2) urban water supply works of Nacala city, 3) the Nacala dam, 4) the

urban storm water drainage works of Nampula city, 5) the urban storm water drainage works of Quelimane city and 6) the combined economic benefits derived from the installation of hand pump and small scale solar system water points in 600 rural communities in the Cabo Delgado and Nampula provinces.

Refer to MCC's website (https://www.mcc.gov/where-we-work/err/mozambique-compact) for a detailed description of the rescoping of the urban water system, storm water drainage and low-cost social marketing/latrine models.

3.3.2 Roads Project ERR

The Roads Rehabilitation Project is based on two inter-related models that monetize benefits of the civil works on the 1) Namialo–Rio Lúrio (149.7km) and 2) Nampula–Rio Ligonha in Nampula (103.0 km) road segments.

The original economic analysis for the roads project was based on the World Bank Road Economic Decision Model (RED). The model performs an economic evaluation of road investment options using the consumer surplus approach and is customized to the characteristics of low-volume roads (less than 500 AADT) such as a) the high uncertainty of the assessment of the model inputs, particularly the traffic and condition of unpaved roads, b) the importance of vehicle speeds for model validation, c) the need for a comprehensive analysis of generated and induced traffic, and d) the need to clearly define all accrued benefits.

Revised ERRs were calculated in 2011 using the Highway Development and Maintenance Model (HDM-4); a computer program for analyzing the total transport costs of alternative road improvement and maintenance strategies through a life-cycle economic evaluation. The program provides detailed modeling of pavement deterioration and maintenance effects and calculates the annual costs of road construction, maintenance, vehicle operation, and travel time needed to assess alternative improvement and/or maintenance strategies under consideration.

The change from the RED model to the HDM-4 model is particularly justified given that 1) the Namialo - Rio Lúrio and the Nampula – Rio Ligonha road segments are properly classified as highways as opposed to rural roads and, therefore, traffic volumes should be given appropriate weights in the analysis and 2) the analysts' wished to evaluate the probability of deterioration of the roads according to alternative "with" and "without" high versus low maintenance cost scenarios.

Refer to MCC's website (https://www.mcc.gov/where-we-work/err/mozambique-compact) for a detailed description of the assumptions used in the original RED and re-scoped HDM-4 models.

3.3.3 Land Tenure Services Project ERR

The Land Tenure Services Project is based on a consolidated model that combines economic benefits derived from the issuance of DUATs to urban and rural beneficiary households (increased land values) and business enterprises, community lands and producer associations (increased agricultural productivity and/or investments in farm equipment) in the Nampula and Zambézia provinces.

The Land Tenure Services Project is intended to reduce the inefficiency and risk associated with Mozambique's land tenure system in order to support economic growth. It is expected to improve

the implementation of the country's land law and the transparency and operational efficiency of land registration procedures, thereby increasing the security and transferability of land rights. Greater security and transferability of land associated with the formalization of land use rights should promote more efficient land allocation and increased investment.

While the policy reform and capacity building components are also intended to improve the efficiency and transparency of land titling and land transfers nationwide, the ERR analysis only measures income gains for direct/targeted beneficiaries. To the extent that the policy reforms lead to the formalization of land tenure throughout the country, the ERR will be higher, however, it cannot be modeled a priori in view of the lack of quantitative evidence for the estimation of direct benefits.

The economic analysis for the Land Tenure Services Project was substantially revised from the analysis developed during Due Diligence. The revised ERR analysis estimates benefits from two income streams: 1) implicit income gains to households receiving DUATs (for land in urban and rural "hotspots") measured as increases in GDP, and 2) increased income from investments in agriculture lands for members of communities whose lands are delimited and from investments in production for producer associations whose land are demarcated. Benefits are included for communities and associations, as well as for urban and rural parcel-holders who are expected to receive a DUAT under the program.

The most comprehensive way to value the urban benefits of land "tenure" (including increased security of investments on the land) is to assume that they are capitalized into the market value for land-use rights when a DUAT is obtained. The benefits to urban land holders are based on an evaluation of parcel transfer prices "before the Project" compared to transfer prices "after the Project", based on estimates of the impact of the DUAT on the land transfer prices in urban areas in Mozambique. Estimated prices for residential, agricultural and other types of property in the peri-urban areas to be provided DUATs under the project are translated into implicit rental benefit streams based on principals used in GDP accounting; i.e., according to the US Bureau of Economic Analysis, "Housing services are a component of personal consumption expenditures (PCE), and consequently part of GDP, in the national income and product accounts (NIPAs).

Benefits to Urban Households and Rural Smallholders

The contractor, providing technical assistance for the mapping and titling of land in urban and rural "hotspots", has divided the land and properties subject to titling into several categories: a) domiciles, b) agriculture, and c) other types of property. Agricultural areas are found in both urban and rural "hotspots". Parcel square meters vary by type, with residential properties smaller than agricultural parcels and properties of other types of usages. Both urban and rural areas are surveyed and titled, based on categorization used in Mozambique. The model uses the average parcel sizes reported by the contractor.

Using conservative assumptions, the value of property used for other functions (commercial, industrial, service sector, municipal, and other) was assumed to be the same as urban housing. Benefits accruing to residential property in rural "hotspots" were calculated in the same way.

The benefits accruing to agriculture in rural property "hotspots" were calculated using assumptions about increased farm income for farm communities described below. Benefits accruing to agricultural land holdings in urban "hotspots" were computed similarly.

Property values per square meter for urban property was based on Michigan State University baseline survey reported average housing values based on respondents retrospective reporting of purchase prices from 2007-2011. The value of property used for other functions (commercial, industrial, service sector, municipal, and other) was assumed to be the same as urban housing. Benefits accruing to residential property in rural "hotspots" were calculated in the same way.

Benefits to Rural Communities

Following a log-frame approach, the delimitation of rural communities should lead to increased agricultural investment (e.g., better use of fertilizers and investments in farm machinery) that would subsequently lead to higher farm income and economic growth. To model these effects, data on farm income was used to represent the base case based on information reported from the Mozambique 2008 agricultural survey (TIA) conducted by the Ministry of Agriculture in collaboration with Michigan State University.

The original economic analysis for this project had an ERR of 12.7% over the 20 year investment period. Based on 8,000 trials, using Monte Carlo simulations, the revised Land Tenure Services Project mean expected ERR lies within an interval of between 5.8 percent and 34.5 percent with 95 percent probability. Overall, the likelihood that the Land Tenure Services Project produces an ERR of less than 10 percent is about 9 percent. For the base run, the expected ERR is approximately 20.5 percent, with a standard deviation of 7.3 percent.

For a detailed discussion of findings, description of the ERR model and key assumptions underlying the sensitivity analyses used in the Monte Carlo simulations, refer to Annex VI: Technical Documentation of the Economic Analysis of the Land Tenure Services Project.

For a detailed discussion of findings, description of the ERR model and key assumptions underlying the sensitivity analyses used in the Monte Carlo simulations, refer to MCC's website (https://www.mcc.gov/where-we-work/err/mozambique-compact).

3.3.4 Farmer Income Support Project ERR

The Farmer Income Support Project is based on a consolidated model that combines economic benefits derived from the control of CLYD disease, coconut tree replanting and intercropping activities in the endemic and epidemic areas of the Nampula and Zambézia province.

The original economic analysis had an overall ERR of 27.8% over the 20 year investment period. The model assumed multiple interventions regarding the felling and removing of infected trees, planting of disease resistant seedlings and by providing training and improved seeds for high value crops in support of income diversification. The analysis includes the following benefit streams a) income from coconuts from existing trees and new seedlings once matured, b) income from the four new crops introduced by the project (ground nuts, cow peas, pigeon peas and sesame), c) income from mats made from coconut tree leaves and d) income from the sale of copra.

The ERR model has been adjusted to reflect the final scope of project interventions. The current model captures two sets of activities, one set of activities implemented in the "endemic areas,"

such as intercropping and improved seed planting, and the other implemented in the "epidemic areas," where infected trees are felled and removed and disease resistant coconut seedlings planted.

The overall objectives of FISP, however, remain the same; to protect and restore the healthy coconut supply and diversify smallholder income through the provision of measures to control the spread of CLYD, planting of coconut seedlings on smallholder land, and the provision of technical assistance and targeted grants to diversify smallholder income in the eastern coastal belt of the Zambézia and Nampula provinces.

Refer to MCC's website (https://www.mcc.gov/where-we-work/err/mozambique-compact) for a detailed description of the ERRs analysis for the Farmer Income Support Project

3.3.5 ERR Summary

Table 5 presents original and current ERRs for the Mozambique Compact.

Table 5: Compact ERR Summary

Project/Activity/Sub-Activity Name	Original ERR	Closeout ERR
Nacala Urban Water Supply	22.0%	Cancelled
Nacala Dam Sub-Activity		None
Nampula Urban Water Supply		13.4%
Nampula Storm Water Drainage		38.6%
Quelimane Storm Water Drainage		0.30%
Rural Water Points		46.7%
Mocuba Urban Water Supply		-2.5%[5]
Namialo – Rio Lúrio Road[6] Rehabilitation	6.7%	7.3%
Nampula – Rio Ligonha Road Rehabilitation	7.1%	
Land Tenure Services Project	13.0%	25.8%
Farmer Income Support Project	25.1%	36.0%

3.4 Program Beneficiaries

The Program is expected to benefit nearly 2.7 million persons, poor and non-poor, by 2028; equivalent to approximately one half of the 2028 projected population in the affected four provinces.

[5] Original and final activities are not the same. Therefore, original and closeout ERRs for Mocuba are not comparable.

[6] The original ERR for the entire Roads Project was 10.3%.

More than half of all the beneficiaries reside in Nampula Province. Activities specifically targeted to rural areas account for approximately one third of Program beneficiaries, while those focused specifically on urban areas account for another one third. The roads activities benefit both rural and urban dwellers and account for the remaining beneficiaries.

3.4.1 Water Supply and Sanitation Project Beneficiaries

It is anticipated that the Water Supply and Sanitation Project (WSS) will assist 780,000 beneficiaries by 2028 through access to improved water systems, storm water drainage and low cost sanitation facilities.

Access to improved water sources is provided to over 155,957 beneficiaries, through the installation of hand pump and small scale solar system water-points in rural communities in the Cabo Delgado and Nampula provinces. These improvements reduce the incidence of disabling diarrhea and save time for women that can be spent on more economically productive activities. Other benefits, not easily monetized, include improved school enrollments and/or attendance for girls and reductions in other water-borne diseases such as cholera. Approximately one third of all beneficiaries impacted by the Water Supply and Sanitation Project are poor.

Economic benefits accrue through improved water and sanitation services for a number of reasons. In particular, with easier more reliable access to improved water sources and improved sanitation facilities, all household members will benefit from improved health outcomes, particularly, children and the elderly who are more susceptible to morbidity and mortality from diarrhea and malaria. Adults will spend less of their time incapacitated or caring for sick family members. Women and girls, primary water gatherers, will have more time to spend in productive activities when sources of water are closer to home, either through house connections or neighborhood water points.

3.4.2 Roads Project Beneficiaries

By 2028, nearly 1.2 million beneficiaries in districts adjoining the roads will have improved transport access in Nampula province. Out of total beneficiaries of the Roads Rehabilitation Project, 368,477 beneficiaries are expected to benefit from the 149.7 kilometer Namialo –Rio Lúrio Road segment, and 869,257 beneficiaries are expected to benefit from the 103 kilometer Nampula –Rio Ligonha Road segment.

Benefits will accrue to vehicle users on the rehabilitated and resurfaced roads as vehicle operating costs go down, and time spent in travel is reduced with vehicles traveling safely at higher speeds. In addition, road improvements will induce additional growth in traffic as better roads make transportation more affordable for agriculture, industry and commerce. These benefits should result in reductions in the prices of goods and improvement in farm-gate prices if savings in fuel and other vehicle operating costs are passed on to producers and consumers. It is also expected that bus operations will become more efficient, improving access to public transportation. This should facilitate the population’s easier access to health and educational services, and more efficient and cost effective access to previously less accessible employment opportunities. Over half of the population is of working age and will be able to take advantage of improved employment opportunities.

3.4.3 Land Tenure Services Project Beneficiaries

The Land Project introduced improved approaches to land registration and records management. Broadly speaking, the Project assisted those who have or acquire land-use rights. According to economic projections, the Land Project is forecast to benefit 1.3 million people by 2028. The value of investment on land affected by the Project will likely increase due to higher tenure security and the number of calendar days to register a land use right will likely be reduced from introduction of LIMs and streamlined procedures.

Urban households in select municipalities and rural smallholders in select districts selected for land service upgrading and surveying interventions will save time and expense when accessing and/or registering land rights. These beneficiaries include nearly 600,000 urban parcel holders and over 520,000 rural smallholders.

Local communities that solicit assistance from the Land Project's Community Land Initiative (ITC) Activity will benefit from registration of land rights through improved security for productive activities on their land and increased opportunity for arrangements with outside investors for business development. Approximately 222 communities are projected to have their lands delimited over four years under the Land Project, enabling an estimated average of 5,000 hectares per community to become available for commercial use.

Although difficult to quantify, additional value added can be expected from reduced conflict and increased job creation over time as a result of new commercial investments encouraged by a more efficient land use regime.

3.4.4 Farmer Income Support Project Beneficiaries

The Farmer Income Support Project (FISP) benefits an estimated 534,440 smallholders in the coconut belts of the Zambézia and Nampula provinces by 2028. Smallholders depend on coconut tree-products for cash and in-kind income. FISP provides targeted technical assistance to over 3,000 smallholders in order to mitigate significant income loss due to the disease and to assist them in improving the productivity of other crops planted on their parcels. Including family members, it is estimated that 453,440 individuals benefit from interventions in the epidemic areas and 81,000 individuals benefit from interventions in the endemic areas.

3.4.5 Beneficiary Summary

Table 6: Compact Beneficiary Summary[7]

Project/Activity/Sub-Activity Name	Estimated Number of Beneficiaries 2028	PDV Benefits 2009-2028 -- International $ 2009 PPP	Estimated Increase in per Capita Beneficiary Income 2028
Farmer Income Support Project	534,440	$56,323,875	$105.39
Land Tenure Services Project	1,333,445	$62,910,311	$47.18

[7] The Total has been adjusted downward to exclude Land Project beneficiaries in order to avoid double counting beneficiaries that may benefit from multiple interventions.

Nacala Urban Water Supply[8]	123,390	$67,113,852.11	$543.92
Nampula Urban Water Supply	56, 595	$48,182,143	$851.35
Mocuba Urban Water Supply	53,831	$1,462,853	$27.17
Nampula Storm Water Drainage	353,202	$42,185,577	$119.44
Quelimane Storm Water Drainage (after 20 years)	161,323	$11,551,054	$71.60
Rural Water Points (after 20 years)	155,957	$40,252,052	$258.10
Namialo - Rio Lúrio Road Segment (2030)	368,477	$51,307,309	$41.45
Nampula - Ligonha Road Segment (2030)	869,257		
TOTAL	2,684,796	$288,900,000	$107.61

4 Monitoring Component

4.1 Summary of Monitoring Strategy

Post Compact performance will be monitored systematically and progress will be reported annually through a small set of indicators listed in the indicator tracking table (ITT). There are three levels of indicators provided in the Post Compact ITT, each derived from the program logic framework: (i) goal, (ii) outcome, and (iii) output. This analysis allows the Government of Mozambique and MCC to track the use of Compact investments and sustainability such as operations and maintenance of infrastructure improved under the Compact and make relevant decisions.

Goal-level indicators monitor progress on Compact goals and help determine if the Mozambique program and MCC met their founding principle of poverty reductions through economic growth. Project and Activity level outcomes measure the long-term effects on an intervention's outputs.

Actuals of some high-level indicators included in the Post Compact M&E Plan come from evaluations. New indicators may also be added to the extent deemed necessary by the designated representative or MCC.

[8] The Nacala Urban Water Supply activity was not completed. These beneficiary estimates reflect expected benefits, should the project be completed.

The Indicator Documentation Table in Annex I provides a detailed definition of each indicator; unit of measurement, source of data, frequency of data collection, and the entity responsible for collecting the data. The baselines and targets for the indicators included in the Post Compact ITT are shown in the Performance Tracking Table in Annex II. Targets are derived from the revised economic analysis justifying Program investments.

The MCC M&E point of contact worked with the Ministry of Public Works, Housing and Water Resources in Mozambique, Millennium Challenge Account Mozambique Stakeholders, along with land and water sector experts, to select the Post Compact indicators. The Post Compact M&E Plan will be amended to reflect any changes made to those indicators, after they have been approved by MCC.

4.2 Data Quality

The designated representative from Mozambique will be responsible for ensuring data quality and conducting internal, periodic data quality reviews to verify data reported during the Post Compact period by checking the accuracy and reliability of performance data submitted by responsible entities.

4.3 Standard Reporting Requirements

The Ministry of Public Works, Housing and Water Resources will be responsible for submitting an Annual Summary Report (ASR) to MCC. This report should be submitted to MCC via email to the Vice President of the Department of Compact Operations at VPOperations@mcc.gov, with the subject line "Mozambique Post Compact Reporting" and the dates of report coverage. The first report will cover the period of September 2014 to September 2016. Two additional reports will be submitted: September 2017 and September 2018. The Post Compact period ends in September 2018.

The ASR should include the following information:

1. A summary of any activities undertaken or continued by the host country Government post compact that relate to the sustainability of compact investments including any issues with operations and maintenance of infrastructure, if applicable.
2. A summary of progress on any complementary activities undertaken by the host country Government or other donors.
3. A Post Compact Indicator Tracking Table (ITT) that includes all of the indicators included in Annex I of the plan for the preceding calendar year.
4. If applicable, status of outstanding issues for infrastructure components through the end of the defects liability period.

MCC may also request additional reports as deemed necessary by the MCC country team.

The Annual Summary Report is due on December 31st of each year. The Annual Summary Report will be sent to MCC by the designated representative. It may be made public on MCC's website.

5 Evaluation Component

5.1 Summary of Evaluation Strategy

As defined in MCC's "Policy for Monitoring and Evaluation of Compacts and Threshold Programs", evaluation is the objective, systematic assessment of a program's design, implementation and results. MCC is committed to making its evaluations as rigorous as possible in order to understand the causal impacts of its projects on the expected outcomes and to assess the cost effectiveness of its interventions. While good program monitoring is necessary for program management, it is not sufficient for assessing ultimate results. MCC, therefore, advocates the use of different types of evaluations as a complementary tool to better understand the effectiveness of its programs, projects and activities.

According to MCC M&E Policy, every Project in a Compact must undergo a comprehensive, independent evaluation after completion or termination in order to support two of MCC's core principles: accountability and learning. The next section on Specific Evaluation Plans will describe the purpose of each evaluations, methodology, timeline required MCC approvals and the process for collection and analysis of data for each evaluation. All independent evaluations must be designed and implemented by independent, third party evaluators, hired by MCC.

For each independent evaluation, all relevant stakeholders, including the Government of Mozambique, are expected to provide feedback to independent evaluators to ensure proposed evaluation activities are feasible, and final evaluation products are technically and factually accurate. The designated representative at the Mozambique Ministry of Public Works and Housing will be responsible for disseminating the report to the necessary government ministries and entities for their feedback.

5.2 Specific Evaluation Plans

The following table summarizes the specific evaluation plans:

Evaluation Name	Evaluation Type	Evaluator	Primary/ Secondary Methodology	Final Report Date
Urban Water Supply and Stormwater Drainage Evaluation	Performance	Mathematica Policy Research	Mixed methods ex-post performance evaluation	August 2019
Rural Water Points Evaluation	Impact	Virginia Tech and Stanford University	Difference in difference	August 2014
Roads Rehabilitation Evaluation	Performance	IMC	Economic analysis and	October 2020

			performance evaluation	
Site Specific Secure Land Access Evaluation (Urban)	Impact	MSU baseline/Social Impact endline	Difference in difference	June 2021
Site Specific Secure Land Access Evaluation (Rural)	Impact	MSU baseline/Social Impact endline	Matching	June 2021
Community Land Use (iTC) Evaluation (under Site Specific Land Activity)	Performance	DFID	Outcome Harvesting	July 2014
Land Administration Institutional Strengthening Evaluation	Impact	MSU baseline/Social Impact endline	Difference in difference	June 2021
Farmer Income Support Evaluation	Performance	ABT Associates	Mixed Methods	July 2016

5.2.1 Water Supply and Sanitation Project Evaluation

5.2.1.1 Urban Water Supply and Municipal Drainage Systems Evaluation

All major contracts for water supply and sanitation works were completed by the compact end date with the exception of Nacala urban water supply and the associated 18 km distribution pipeline connecting the Nacala Dam with the Nacala urban water works. Due to poor contractor performance, said contract was terminated prior to the compact end date and will be re-competed following the compact closeout period. The Government of Mozambique is responsible for financing the completion of the works. As of summer 2017, the works have not been completed but the GoM is in the process of applying for a grant to fund the completion. At Compact close, the extent of completed and uncompleted urban water supply and municipal drainage system works are documented in an MCC-contracted independent engineers' final report.

Accordingly, the performance evaluation activities will focus on a) Nampula and Mocuba urban water supply, b) Nacala Dam, c) Nampula and Quelimane storm water drainage systems, and d) low cost sanitation facilities in Quelimane and Pemba.

It is important to note that compact investments were focused on increasing water production as opposed to increasing the distribution, thereby limiting evaluation opportunities. In the case of Mocuba, the investments covered only the restoration of the existing water supply system capacity and improve the water quality.

Evaluation Questions:

Proposed research questions for the Urban Water Performance Evaluation are presented below.

Category:	Activity/Sub-Activity:	Evaluation Question:
Overarching	Overall	1. Was the program implemented according to plan? 2. As implemented, were the activities cost-effective? 3. Are the infrastructure investments operational and being appropriately maintained? 4. What were the effects of water supply activities on key outcomes: - Water supply (cubic meters/day) - Water supply reliability - Water consumption and/or expenditure - Malaria incidence - Diarrhea incidence 5. What was the effect of drainage activities on key outcomes: - Drainage capacity - Flood incidence - Flood severity - Malaria incidence 6. What was the effect of the technical assistance intervention in Nampula and Quelimane: - Sanitation service delivery 7. What lessons can MCC or the Government of Mozambique apply in future programs related to program design, implementation, and sustaining results?
The following should be considered supplemental questions intended to provide more detail on the overarching questions presented above. MCC and the evaluator will determine which questions to answer during the design report phase, as data availability assed and data collection plans are solidified. The evaluation is not expected to answer all of these questions.		
Infrastructure Investments	Overall	Were newly-constructed/rehabilitated works built according to design?
	Mocuba Urban Water Supply	Has the Mocuba project enabled the delivery of 5000 m3/day? If not, why? Is water supplied 24/7? If not why? Prior to the project, the system had pumping failure 80% of the time? Has this improved? How has the activity affected the management of the water system?

	Nampula Urban Water Supply	Is the system able to supply an average of 40,000 m3/day? It was targeted that at this capacity, water can be abstracted with 90% reliability, which would have met the project demands up to year 2016. Was this rate met? With the Nampula project, it was targeted that 71.4% of the population, approx. 500,000 will be serviced by 2016. What is the percentage of the population being serviced now?
	Nacala Urban Water Supply, incomplete works	For the uncompleted works, what are the prospects for completion of the works in the future? What happened to the unused materials procured with MCC funds? (I.e. were these repurposed elsewhere?)
	Nacala Dam	Did the project increase the storage capacity of the dam? If yes, is the increase sufficient to meet the water demand for Nacala City? Has the risk of dam failure been reduced? Are established operations and maintenance protocols (as provided at the end of the project) followed 100% of the time? Did the dam increase the availability of water in the event of a drought? (i.e. more reliable raw water yield)
	Nampula and Quelimane Drainage	Has the EMUSA been able to adequately operate and maintain the sanitation facilities based on the training and fee structure established during the project?
Customer Perspective	Water Supply Overall	Is there evidence that household connections have increased in the intervention cities? How did works affect reliability of water supply? Do changes in reliability affect where connected HHs source their water (i.e. less reliance on supplemental sources)? Do changes in reliability affect where unserved HHs source water (i.e. source more from neighbors than going further out to a public standpipe for example?) Is there evidence that the interventions resulted in time savings? How do changes in reliability impact HH water consumption? Has water quality changed or improved?
	Drainage Overall (Nampula and Quelimane)	What percentage of the Cement City benefit from the improved storm drainage? What percentage of the peri-urban areas benefit from the project? (For Quelimane, the estimated population is about 250,000 residents, with 8% living in the Cement City and the rest in the peri-urban areas. For Nampula, the estimated population is over 700-750,000, with about 3% living in the Cement City and the rest in the peri-urban areas.)

		Have improved drainage systems mitigated negative impacts of urban floods? What are the current malaria incidence rates in the affected areas? Have malaria rates decreased or changed? What are perceived benefits from the drainage works for households in affected areas?
	Technical Assistance in Nampula and Quelimane	What are the perceived benefits of this program? Have the efforts been sustained? Has the EMUSA been able to adequately operate and maintain the sanitation facilities based on the training and fee structure established during the project?
Sustainability	Overall	Are newly-constructed/rehabbed works being appropriately maintained? How is FIPAG functioning overall How is AIAS functioning overall? What facilitates its operations, what does not? Is AIAS positioned to maintain its current maintenance regime into the future?

Evaluation Methodology:

A performance evaluation will be conducted by an independent evaluator beginning in 2018. The exact methodology is to be determined.

5.2.1.2 Rural Water Points Evaluation

The Rural Water Supply Activity (RWSA) installed 602 improved water points in rural communities across the northern provinces of Nampula and Cabo Delgado; two of the country's poorest districts. The water points are managed by water committees at the community level, which are provided with technical training and hygiene and sanitation education known locally as PEC (Participação e Educação Comunitária). The technical training was targeted at improving the capacity of community water committees to manage the operation, maintenance and sustainability of the water point. The hygiene and sanitation trainings are based on a participatory World Health Organization curriculum called PHAST (Participatory Hygiene and Sanitation Transformation). In select circumstances, the project "animators" (Cowater) also used a sanitation approach called CLTS (community led total sanitation) within communities that were perceived as needing greater encouragement to change their hygiene and sanitation behaviors.

Stanford University and Virginia Tech (VT) collaborated with the MCC on an impact evaluation of the RWSA investments in the province of Nampula. The impact evaluation tested the following hypotheses linked to the Rural Water Supply Activity (RWSA). The RWSA will increase beneficiary productivity and income by:

1. Reducing the time costs of water fetching. The time saved could be used for income generation, child care, leisure, or other activities with economic value to the household.

2. Reducing water-related illnesses such as diarrhea, dysentery, etc. Health improvements could increase beneficiary productivity and incomes by reducing work days lost to illness and for caring for ill family members, as well as reducing health care expenditures. The documentation of water- and sanitation-related health impacts is difficult without regular monitoring, which is not feasible within the impact evaluation. For this reason, the evaluation has included sampling of water sources as a way of providing health-related proxy information (water quality data) in addition to direct elicitation of information about illness and health care costs from households participating in the study.

Evaluation Questions:

1. Did the installation of hand pumps improve household access to improved water?
2. Did the installation of hand pumps reduce the time households spent fetching water from a primary source?
3. Did the installation of hand pumps reduce the percentage of children under the age of 5 with reported respiratory and gastrointestinal illness?
4. Did the installation of hand pumps increase levels of household monthly income or expenditure?

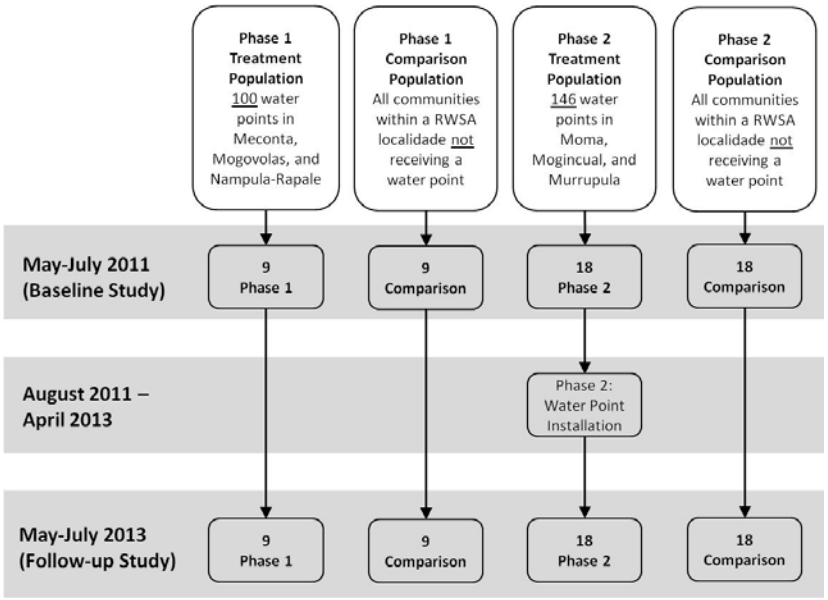
Evaluation Methodology:

The impact evaluation consists of a baseline survey in 2011 and a follow-up survey in 2013 (Figure 1). During the 2011 baseline survey, most of the water points had not yet been constructed, and thus the survey aimed to collect pre-intervention information. All water points were installed prior to the June-August 2013 follow-up survey.

The difference-in-differences approach measures changes in outcomes for a sample of participants (i.e., communities receiving a water point – the "treatment" group) and non-participants (i.e., communities not receiving a water point – the "comparison" group). The key assumption underlying this methodology is that in the absence of the intervention, communities in the participant and non-participant groups would be changing at the same rate.

The Stanford-VT research team developed a sample frame that tried to minimize any confounding differences that may exist between the treatment and comparison groups. However, it should be recognized that the RWSA was designed around a demand responsive approach to the provision of water. Thus, communities receiving a water point had to self-organize and successfully navigate several programmatic demand filters (e.g., forming a committee, gathering approximately US$90 in capital cost contributions from community members, etc.) in order to be eligible for a water point. Thus, these communities may have characteristics that differentiate them from the comparison communities that were not able to mobilize the resources to qualify for the RWSA.

Figure 2: Schematic of Sample Frame



An equal number of treatment and comparison communities were included in the sample. Comparison communities are communities that are not expected to receive an improved water point from the RWSA. However, it is possible that these communities may receive a water project from another organization during the timeframe of the impact evaluation. It was not feasible to limit potential external interventions in these communities, although efforts have been made to monitor changes in water supply infrastructure resulting from other projects. Nine communities from Phase I of the RWSA were included in the sample to provide an indication of whether the installed water points are still functional beyond their one-year warranty.

Since 2011, there have been several changes to the sample frame resulting from negative boreholes (i.e., boreholes that did not reach a viable underground water source) and non-MCC interventions occurring in several treatment and comparison communities. It is noted that as of September 2012, 17 water points had been installed in the 27 treatment communities. In 9 of the remaining 10 communities, geophysical surveys revealed that it was not possible to install a water point in the community. Therefore, these communities will not receive a water point through the RWSA and might instead be considered as comparison communities in the impact evaluation analysis. Of the 27 comparison communities, 24 had not received a water-related intervention. Three of the 27 comparison communities were reported to have received a water point – two from Phase 2 of the RWSA and one from an external project. Thus, it is likely that several treatment communities will be reclassified as comparison communities and several comparison communities will be reclassified as treatment communities. However, it is important to note that the sample frame still allows for testing the hypotheses and drawing causal inference (with associated levels of confidence) about the difference between the treatment and comparison groups.

Evaluation Results:

Although most output and outcome targets for this activity were met or exceeded, the independent evaluation found varied results for the RWSA outcomes. The installation of hand pumps in communities in Nampula led to significant increases in household access to improved water and reduced the time households spent fetching water from a primary source.

However, as of the 2013 follow-up data collection event, the evaluation found no statistically significant health-related impacts and no relationship between the installation of hand pumps and changes in household monthly income. Communities that received a hand pump experienced an

increase in median daily water consumption from improved sources of 15.1 liters per capita per day. Women and children engaged in water fetching experienced an increase in the volume of water collected ranging between 9% (3.6 liters) and 33% (10 liters). Additionally, households saw a reduction in time spent collecting water. The total time spent collecting 20 liters of water year-round fell by 42 minutes in communities that received a hand pump. Further, these households experienced a 62-minute reduction the median year-round roundtrip time to the primary source, which increased to a 129-minute reduction during the dry season. The evaluation found that time savings were used primarily for domestic activities, resting, family activities, child care, and farming.

The installation of hand pumps was also associated with a 9 percent and 2 percent reduction in the percentage of children with reported respiratory and gastrointestinal illnesses, respectively. However, these decreases were not statistically significant. The evaluators conducted water quality testing to explore these results and found that the hand pumps were providing a high level of water quality at the point of collection, but at the household level, almost half of the samples of stored drinking water had levels of contamination. This implies that inadequate hygiene and water management practices obviated households' potential health gains from the hand pumps, resulting in limited impacts on the observed illnesses. This may be attributable to a number of factors including, for example, that (i) it may be that inadequate hygiene and water management practices obviated the households' gains in water quality from the point of collection, resulting in the limited observed impacts on child respiratory and gastrointestinal illness and/or (ii) that pathogens causing these illnesses among sample households are transmitted via exposure pathways other than and/or in addition to ingestion in water (e.g., hand to mouth contact our through food).

As of the survey end date of July 2013, the evaluation found no statistically significant relationship between the installation of hand pumps and changes in self-reported levels of monthly household income or expenditure.

The impact evaluation final report was completed in August 2014. The report, a summary of findings and MCC's response may be found in the MCC Evaluation Catalog.

5.2.2 Roads Rehabilitation Project Evaluation

An MCC-funded economic analysis and performance evaluation is planned for the Roads Rehabilitation Project, beginning in late 2018.

Evaluation Questions:

The evaluation will seek to answer the following research questions. The research questions are divided into four research areas, and designated as core or supplemental questions. Depending on data availability and/or the independent evaluator, supplemental questions may or may not be answered in full.

Research Area 1: Evaluation of the economic viability of MCC-funded road projects post-compact by undertaking a cost-benefit analysis and estimating the ERR and net present value of the investments using the HDM-4 or RED modeling software. In pursuit of this research area, the

evaluator will assess the quality of pre-existing data (as available) and collect the updated data required for modeling, such as traffic, roughness, deflection, and origin-destination. The Contractor shall use the data gathered and the results of the analysis to provide an assessment of each identified road. [Core Question]

Research Area 2: Evaluation of MCC's assumptions about the maintenance and sustainability of improvements in infrastructure based on a rigorous political economy analysis that incorporates appropriate and available data. The evaluator will assess the maintenance financial needs relative to the actual maintenance expenditures - and the actual condition of the roads - to inform MCC of post-Compact maintenance levels relative to the assumptions made in the original ERR model and closeout ERR cost-benefit models. The evaluator will also use this analysis to assess the efficacy of MCC sponsored road maintenance activities [Core Question]. The evaluator will also provide political economy analysis of the formal and informal decision-making that determines road maintenance of MCC's investments and similar roads. The goal of this analysis will be to understand the political and economic factors driving decisions around a country's road maintenance. The evaluator will analyze how maintenance does or does not occur including planning, budgeting, implementation, and oversight relative to what is written or documented. [Supplemental Question].

Research Area 3: Study of road users, based on origin-destination data collected for the HDM-4/RED model, that examines how goods and people are traveling along MCC project roads, where they are going, and what the motivations for the journey are. This information will allow stakeholders to understand travel patterns and characteristics; measure trends; provide input to travel demand model development, forecasting, and planning for area-wide transportation infrastructure needs and services; and monitor progress in implementing transportation policies. [Core Question].

Research Area 4: Evaluation of the transportation market structure and the formal and informal institutions that regulate and govern the transportation market, including possible oligopolistic behavior (e.g., trucking cartels). MCC would like to explore the structure and competitiveness of the transportation sector to understand how likely it is that vehicle operating cost savings that result from road improvements will be passed on to transport consumers, such as public transport users or farmers transporting their produce to market. While this information does not factor into the economic analysis, MCC is interested in understanding how road users who do not own their own vehicle may stand to benefit in the short-term. This research question will be informed by the data collected as part of the HDM-4 analysis and the expanded vehicle intercept surveys to understand whether cost savings for vehicle owners are passed on to passengers in the form of lower fares for people and goods. [Supplemental Work]

Evaluation Methodology:

A economic analysis and performance evaluation will be conducted by an independent evaluator beginning in 2018. The exact methodology is to be determined.

Data Sources:

Prior to the project, baseline information was made available from Feasibility and Detail Design Studies, and a Socio-economic study was implemented before the works started, which included an updated traffic Count, and an origin and destination Survey. As part of the independent evaluation, updated traffic counts and origin/destination surveys will be conducted, as well as engineering data required for HDMIV analysis.

The evaluation is expected to begin in late 2017, and results are expected to be publicly available in 2019.

5.2.3 Land Tenure Services Project Evaluation

MCA-Mozambique and MCC are supporting impact evaluations (IE), including performance related components, on two of the three land activities site specific and institutional strengthening activities. The third activity was not evaluated due to limited policy work completed by Compact end. The evaluation aims to establish the nature and extent of the effects of strengthening land tenure and governance systems on land markets and household perceptions of tenure, conflict, investments and land values. Michigan State University (MSU) designed and implemented the baselines for the various evaluation components. The Ministry of Agriculture, Directorate of Economics (MINAG-DE), through a contract with MCA-Mozambique, also helped in implementing the rural baseline surveys. MCC is engaging Social Impact to conduct the follow-up evaluation data collection and endline analysis in 2018-2021. In addition DFID supported a performance evaluation focused on the results of the Community Land Fund of the Site Specific Activity which completed in 2013.

Further details on the Land Project evaluations follow, below:

5.2.3.1 MCC Evaluation: Site-Specific Secure Land-Access (Urban and Rural) and Institutional Strengthening

Two impact evaluation components cover the Site-Specific Land activities related to 'improving land access in "hotspot" areas' in urban and rural areas – one targeted to selected municipalities representing urban areas (Nampula city and Monapo vila[9]) and the another targeted to selected districts representing rural areas (Mecufi and Malema). The interventions that are subject of these two evaluation components include: a) The satellite mapping and inventory exercise; b) Capacity building of the local cadastral offices; c) Piloting a sound approach to area-wide registration of land rights.

[9] There was a baseline conducted in Monapo vila; however, due to strong uptake of project formalization activities, there was a decision during the Compact to allow Monapo to complete its full land cadaster. As such, an impact evaluation is no longer possible, but a performance evaluation will be conducted in its place.

The impact evaluation covering institutional strengthening is one of the first impact evaluations of its kind, evaluating changes from the institutional strengthening activity using a counterfactual. The institutional strengthening activity invested in infrastructure, human and information resources in order to effectively provide quality public land-related services.

Evaluation Questions:

MCC's primary research questions are:

1. Were project outputs sustained, particularly LIMs and continued issuance of DUATs post compact, including those in diferido status?
2. Has the Land Project changed the efficiency of land administration, particularly changes in time, cost, and number of steps to conduct to process/acquire a DUAT or conduct a secondary land transaction?
3. Did the Land Project improve access to land and land markets, including changes in demand and approvals for DUATs and other secondary land transactions? Was there a related change in awareness or confidence in the land governance system? What are the characteristics of those applying for DUATs and conducting land transactions?
4. Did those parcels which received DUATs remain in the statutory system or were parcels transferred informally during the post compact period?
5. What was the effect of the Land Project on incidence of conflict?
6. Has the Land Project resulted in improved access to formal credit?
7. Did receipt of a DUAT lead to changes in perceptions of tenure security or defacto land tenure?
8. For households which received a DUAT, what was the impact on land investment and utilization, including transfer and renting of land? If there were changes in investment or utilization of land, what was the effect on land values?
9. Did effects differ by district/municipality, parcel size, land use or gender? For gender, were effects dependent on whose name was included on the DUAT?
10. Did those areas which received DUATs lead to demand for DUATs in neighboring areas or for demand for DUATs for additional parcels held by the beneficiary households?
11. Has the Land Project, especially the completion of the cadaster, affected municipal planning, land taxes, and related supply and access to public services?
12. How has the Land Project affected allocation of land for commercial investment and related land expropriation? Did those with DUATs receive fair compensation? Was the process expedited from clear boundaries and users of existing land rights?

Evaluation Methodology:

A. Site Specific (Rural and Urban)

The impact evaluation components of the rural and urban "hotspot" areas are based on a non-experimental comparison group difference-in-difference or double difference design approach. Due to significant differences between comparison and treatment areas of key variables, propensity

score matching will also be employed in rural areas. The comparison "hotspots" include areas very similar to the treatment "hotspot" area in important ways (demographics, poverty, land use, etc.) but did not receive land DUATs. The urban baseline survey was implemented from October to December 2010, while the rural baseline survey was implemented in September 2011 to May 2012. The questionnaire included more than 25 sections encompassing modules on: household demographics; household employment and income from different sources; parcel characteristics; investments on land; participation in markets, land conflicts and security, status of current DUAT possession and perceived impacts of DUAT, knowledge about the 1997 land law; non-land asset ownership and detailed consumption expenditures, etc.

The sample size for the urban baseline survey is 1690 - 881 in Nampula city and 809 in Monapo vila. In the rural survey, a total of 1,417 households were interviewed: 706 in Micufi district and 711 in Malema district. In terms of number of parcels, 3,992 parcels and 4,224 parcels were in the sample households' possession in the urban and rural areas, respectively.

Follow-up surveys are planned five years after the compact ends to allow sufficient time for the longer-term impacts of land activities to be realized.

B. Institutional Strengthening

The institutional strengthening evaluation also uses a difference in difference approach. The causal effects can be identified by comparing outcomes in provinces (municipalities/districts) where the institutional strengthening activities were implemented (the "treatment group") to the outcomes in other provinces (municipalities/districts) where those activities have not been or will not be implemented (the "control group").

The evaluation uses recorded data on DUAT issuance and market transaction from the district and municipal land administration offices. Each record includes information on cost and time taken from application to the completion of each transaction (either related to DUAT issuance or related to land market transfer through sale/rental/mortgage), as well as the basic parcel characteristics such as size, location, owner, etc. All the recorded transactions over 8-10 years are divided into two time periods - the before-intervention period (e.g., 2009) and the after – intervention period (post 2014).

Twelve (12) districts and eight (8) municipalities where MCC had interventions are considered the treatment land administration units and are compared with 12 districts and 8 municipalities that share similar characteristics to those of the treatment (but were not targeted for institutional strengthening intervention). A number of district/municipality institutional land administration unit indicators including number of staff in cadastral service, size of the cadastral unit, average number of years of experience of cadastral staff; average number of previous trainings; quality of

equipment in the cadastral office; number DUATs applications processed within 90 days per year or month; quality of facilities (access to electricity, number of survey equipment by type) were used to select the comparison group.

Evaluation Results:

Baseline evaluation reports for the Land rural and urban site specific activities and the baseline evaluation report of Land institutional strengthening activities are available on MCC's evaluation catalog. The final reports are expected in June 2021. Additional information about the evaluation questions, methodology, and results (as available) may be found in the MCC Evaluation Catalog.

5.2.3.2 Site-Specific Secure Land-Access Evaluation (Community Land Use (iTC) Evaluation)

A Community Land Use evaluation was funded by DFID and is a performance evaluation comparing progress made in Compact areas to those areas funded by an international donor consortium.

Evaluation Questions:

The Community Land Use evaluation covers the iTC program from 2006 to 2012. The UK Government's Department for International Development (DFID) commissioned a performance evaluation of the ITC in 2013. The evaluation focused on two G6 -funded provinces-Manica and Cabo Delgado and one MCA-funded province- Zambezia. The evaluator reviewed ITC service provider reports and conducted key informant interviews and focus groups with households, associations, community leaders and service providers in ITC communities to understand outcomes, particularly changes in the behavior and relations of communities and their organizations. Specifically, the evaluation focused on:

1. Lessons learned regarding what worked and did not work well during the implementation of ITC, including a comparison between ITC/G6 and ITC/MCA approaches; and

2. ITC's influences on community-level and household investments in participating communities

The evaluation focused on the Manica, Cabo Delgado, and Zambezia provinces in Northern Mozambique. Overall, the evaluation looked at the following key areas:

1. Lessons learned regarding what worked and what did not work well during the implementation of iTC (including a comparison between iTC/G6 and iTC/MCA implementation);
2. Influences of the iTC program on investments in participating communities (community level and individual household level); and
3. Inputs into the design of possible future iTC support.

Evaluation Methodology:

This evaluation was a performance evaluation which employed a retrospective evaluation methodology using an outcome harvesting approach. An impact evaluation could not be pursued due to lack of a counterfactual—no baseline data collection and problems finding a comparable group of communities.

The "Outcomes Harvesting" method is defined in the evaluation as, "a utilization-focused, participatory tool that enables evaluators, and managers to identify, formulate, verify, and make sense of outcomes they have influenced when relationships of cause-effect are unknown. Outcome Harvesting does not measure progress towards predetermined outcomes or objectives, but rather collects evidence of what has been achieved and works backward to determine whether and how the project or intervention contributed to the change."

Evaluation Results[10]:

Overall, 171 outcomes were harvested and showed strong evidence, triangulated from multiple sources that iTC contributed to successful outcomes at community level. Collaboration of multiple actors, including communities and various Government agencies, was also found to contribute to this success.

Of the valid outcomes harvested, nearly 40% attested to changes in the behavior and/or relationships of key boundary actors contributing to the preparation of communities for investments. 27% of the valid citations provided evidence of progress toward the preparation of associations for investments. The evaluation found a relatively high number of outcomes showing improved community security, conflict management and improved knowledge and application of legal rights, as well as a medium number of outcomes of improved natural resources management capacity at the community level.

However, there were a fair to high number of negative effects recorded related to the sustainability of associations and the process for application of state granted land rights, or DUATs. The third largest number of outcome challenges cited at 16% with strong evidence linkages to program influence had to do with the empowerment of men and women in the management of Community Natural Resource Management Committee (CGRNs) and associations as well as empowerment of the communities and associations for increasing their influence in local markets and in regional policy discussions. Efforts by iTC to improve its effectiveness through upgrading the capacities of its service providers and through building stronger alliances with boundary actors yielded fewer examples of progress with about 10% of the total outcomes cited. This is an area where evidence is weak to support program influences, due to the low number of outcomes harvested, as well the significance of outside influences involved. The outcome challenges with the fewest citations has

[10] Results taken from the final evaluation report: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/327645/Mozambique-Community-Land-Use-Fund.pdf

to do with direct iTC influence on investments. There is again relatively weak evidence in this area as more time is needed to observe change.

Additional information about the evaluation questions, methodology, and results may be found in the MCC Evaluation Catalog.

5.2.4 Farmer Income Support Project Evaluation

An MCC-funded performance evaluation was conducted on the Farmer Income Support Project (FISP). A single contract was awarded to evaluate all four of the project's activities.

Evaluation Questions:

The evaluation design report contained 11 evaluation questions, covering the project as a whole as well as the individual projects. The evaluation addressed the following overarching questions:

1. What is the impact of the technical assistance provided by the project on coconut production?
2. How did the evolving program logic affect the scope of implementation activities?
3. What is the potential increase in coconut supply in the Zambézia and Nampula provinces over a 20-year investment period?
4. What are the results of the ERR with variable CLYD infestation rates and other determinants of survival rates of coconut trees?
5. What is the impact of the project on the incomes of participating farmers in the endemic and epidemic zones? Are the changes in outcomes associated with the project different for male and female heads of households?

Evaluation Methodology:

The evaluation used a mixed-methods approach to evaluate the overall performance of FISP. Two different quantitative evaluation designs were used to measure the impact of FISP on tree health and household income in the epidemic and endemic zones. In both areas the impact of FISP was estimated by comparing outcomes in the project implementation areas with outcomes in geographic areas outside of the project areas. Case studies were used to assess the BDF grants and the cross-cutting research and development (R&D) activity. The evaluation of all FISP components—the three activities that supported the epidemic zone and endemic zone interventions, the BDF activity, and the R&D activity—finds that the project was partially successful, although sustainability issues could stand to dampen these success over the long run.

Evaluation Results:

Epidemic Zone Interventions

In the epidemic zone FISP was successful in reducing overall disease prevalence. Despite the success in efforts to reduce disease prevalence, coconut production did not increase enough to lead to increased household income from the sale of coconuts. Instead, FISP had an impact on non-farm income (fishing and non-skilled labor). The evaluator hypothesizes that the mechanism for this unanticipated outcome is that by alerting farmers to the lethality of CLYD, FISP may have induced coconut farmers to diversify sooner to non-agricultural sources of income

Endemic Zone Interventions

FISP had a measurable and significant impact on households' adoption of alternative crops, which led to increased production of FISP-promoted crops. However, the magnitude of the increase was small and did not result in an impact on household income.

Cross-Cutting Activities

The evaluation of the R&D activity suggests that a more focused strategy could have yielded better results. The R&D activity had a diverse set of objectives, making it hard for FISP to focus on any one of them for strong results. Overall the activity fostered no peer-reviewed scientific output and although establishment of molecular diagnostic capacity for CLYD was achieved, it was not sustained after the end of the program. The BDF grant program was perceived by grant recipients to be beneficial, however, no beneficiaries were able to provide information to quantify increases in sales, net income, or employment.

Current Economic Rate of Return

The evaluator's calculation of the project's current ERR was based on the quantitative impact estimates of disease prevalence and seedling survival rate with and without the project in epidemic areas, and alternative crop uptake and seedling survival rate with and without the project in endemic areas. Sensitivity analysis was also conducted to explore outcomes in the event that CLYD resurfaces in the surviving coconut seedlings, given that disease resistance of the coconut cultivar used for replanting was not scientifically confirmed. This revised model produced a more modest overall ERR of 16.4 percent, compared to MCC's end-of-project ERR estimate of 36 percent. The reduced ERR is driven by the higher observed disease prevalence rates and lower seedling survival rates than those anticipated by MCC at project closeout.

Additional information about the evaluation questions, methodology, and results may be found in the MCC Evaluation Catalog.

6 Implementation and Management of M&E

6.1 Responsibilities

The designated representative is responsible for implementation of the following activities:

1. Submits to MCC an Annual Summary Report on post compact activities which includes the collection of data from different government agencies on post compact indicators;
2. Confirms data quality of agreed to indicators, ensuring that reported indicators have proper documentation;
3. Reviews and provides an official response to each evaluation; helps to coordinate the review of evaluation reports by other government agencies as necessary;
4. Disseminates evaluation results, including organizing in-country presentations with stakeholders and posting evaluations on a government website; and
5. Identifies opportunities to apply the learning from the evaluations to future project design and implementation.
6. Liases and coordinates with MCC-hired independent evaluation firms, including introductions to key local stakeholders and aiding in access to key documents and data.

The M&E representative at MCC is responsible for implementation of the following activities:

1. Contracts and manages independent evaluators;
2. Ensures evaluators conduct stakeholder review of evaluation reports;
3. Provides guidance and training to the designated representative on the requirements for preparing and submitting the Annual Summary Report.

6.2 Review and Revision of the Post Compact M&E Plan

All revisions to the plan will be mutually agreed upon by the designated GoM representative and MCC. Either party may suggest revisions to the plan. The reviewed and approved Post Compact M&E Plan should be publicly available through the MCC and GoM websites.

7 M&E Budget

Post compact, MCC will fund and support data collection and analysis for the final evaluations.

The GOM is expected to dedicate staff time to Post-Compact M&E activities. It will facilitate dissemination of evaluation findings via presentation and other modalities (e.g. brochures).

ANNEX I: Indicator Documentation Table

MCC Common Indicator	Indicator Level	Indicator Name	Definition	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting
PROJECT: Water Supply and Sanitation Project								
	Outcome	Time to get to non-private water source (Rural)	The median time households spent walking to, waiting at, and walking back from their primary water source.	Minutes	None	MCC Rural Water Supply Activity 1) Base-line, 2) Follow-up and 3) End-line Surveys	MCC Independent Evaluator	2014 Evaluation Results
(WS-14)	Outcome	Residential water consumption (rural)	The average water consumption in liters per person per day	Liters per capita per day	None	MCC Rural Water Supply Activity 1) Base-line, 2) Follow-up and 3) End-line Surveys	MCC Independent Evaluator	2014 Evaluation Results
Activity 2: Rehabilitation and Expansion of Water supply systems in urban areas								
	Output	Rated capacity to deliver potable water	The ability of facilities to process water to the specified standard; e.g. for water distribution or wastewater treatment. The flow through the plant is typically less than the rated capacity.	Cubic meters/ day	Intervention cities and water sources	Water Supply Investment Fund (FIPAG) and Water Supply & Sanitation Infrastructure Authority (AIAS)	Water Supply Investment Fund (FIPAG) and Water Supply & Sanitation Infrastructure Authority (AIAS)	Annual (2014-2018)
(WS-11)	Outcome	Volume of water produced	Total volume of water produced in cubic meters per day for the service area, i.e. leaving treatment works operated by the utility and purchased treated water, if any.	Cubic meters/ day	Intervention cities and water sources	MCC Independent Evaluator data collection	MCC Independent Evaluator	Once, 2018
	Output	Increased safe/reliable yield	The maintainable yield of water from a surface or ground water source or sources which is available continuously during projected future conditions without creating undesirable effects.	Cubic meters/ day	Intervention cities and water sources	Water Supply Investment Fund (FIPAG) and Water Supply & Sanitation Infrastructure Authority (AIAS)	Water Supply Investment Fund (FIPAG) and Water Supply & Sanitation Infrastructure Authority (AIAS)	Annual (2014-2018)

PROJECT: Road Rehabilitation Project								
(R-9)	Outcome	Roughness	The measure of the roughness of the road surface, in meters of height per kilometer of distance traveled	IRI units	MCC Primary Roads Segments	International Roughness measurements from	National Roads Administration (ANE) and MCC Independent Evaluator	2018
	Outcome	Total time savings (Millions of dollars)	Value of time saved due to shorter trip times and increased speed on upgraded roads	Millions of US Dollars (2009 values)	MCC Primary Roads Segments	Independent Evaluator HDM-4 Analysis	National Roads Administration (ANE) and MCC Independent Evaluator	2018
(R-11)	Outcome	Road Traffic Fatalities	The number of road traffic fatalities per year on roads constructed, rehabilitated or improved with MCC funding	Number	Sex	Annual Traffic Counts	MCC Independent Evaluator	2018
(R-10)	Outcome	Average annual daily traffic	The average number and type of vehicles per day, averaged over different times (day and night) and over different seasons to arrive at an annualized daily average	Number of vehicles	MCC Primary Roads Segments	Annual Traffic Counts	National Roads Administration (ANE) and MCC Independent Evaluator	Annual (2014-2018)
PROJECT: Land Tenure Services Project								
L-6	Outcome	First time DUATs issued in the 4 northern provinces	The number of DUATs issued in the four northern provinces each year.	Number	By location(each urban municipality and rural district); non-project area/ project area[11]; DUAT recipient (male individual only, female individual only, joint male/female individual,	LIMS/SIGIT and Municipal Land Records	DINAT (SPGC for districts and Municipalities for Municipalities)	Annual (2014-2018)

[11] Similar to land rights formalized which tracked during Compact. The project areas follow provision of DUATs to parcels that had mapping and data collection completed by the Project but were not provided a DUAT until Post Compact.

					business, community or other)			
	Outcome	Number of DUAT Transfers	The number of DUAT transfers each year in project "hotspot" districts and municipalities of the four northern provinces	Number	By location (each urban municipality and rural district	LIMS/SIGIT and Municipal Land Records	DINAT (SPGC for districts and Municipalities for Municipalities)	Annual (2014-2018)
	Outcome	Time to process a DUAT in project areas.	The average time taken to process a DUAT -- from application to approval.	Number	8 municipalities: Quelimane, Mocuba, Monapo, Nampula, Pemba, Mocimboa da Praia, Lichinga, and Cuamba; 4 provinces: Cabo Delgado, Niassa, Nampula, and Zambezia	LIMS/SIGIT and Municipal Land Records	DINAT (SPGC for provinces and Municipalities for Municipalities)	Annual (2014-2018)
L-7	Outcome	Percent change in time for property transactions in project areas.	The average percentage change in number of days for an individual or company to conduct a property transaction within the formal system.[12]	Percentage	8 municipalities: Quelimane, Mocuba, Monapo, Nampula, Pemba, Mocimboa da Praia, Lichinga, and Cuamba; 4 provinces: Cabo Delgado, Niassa, Nampula, and Zambezia	LIMS/SIGIT and Municipal Land Records	DINAT (SPGC for provinces and Municipalities for Municipalities)	MCC 2011 Baseline (collected in 2013); and Post Compact annually (2014-2018)

[12] Based on indicator "Time to process a DUAT in project areas".

	Outcome	Community DUATs	Number of community land certificates issued in the year	Number	Province	LIMS and SPGC Records	Ministry of Land	Annual (2014-2018)
	Outcome	New student enrollments in the National Institute for Land Administration and Cadastre Training (INFATEC)	Number of new students enrolling in INFATEC each year.	Number	Gender	INFATEC	MCC Independent Evaluator Baseline and INFATEC post-compact	Annual (2014-2018)
	Outcome	Students graduating from INFATEC	Number of students each year graduating from INFATEC.	Number	Gender	INFATEC	MCC Independent Evaluator Baseline and INFATEC post-compact	Annual (2014-2018)
	Outcome	Production value of rural agricultural land	Value of crop production (excluding tree crops) per square meter of rural agricultural parcels in intervention areas before and after receiving a DUAT.	US Dollars	None	MCC Independent Evaluation	Ministry of Agriculture (MINAG)/MSU Base-line and Social Impact Endline	MCC 2011-2012 Base-line Rural Survey (reported in 2013). MCC 2019 Follow-up Rural Survey/2021 results report.

	Outcome	Value of urban land parcel holding	Value of urban land parcel holding as measured by rentals and sales of improvements/assets on the land before and after receiving a DUAT	US Dollars	None	MCC Independent Evaluation	Ministry of Agriculture (MINAG) and MSU Baseline; and Social Impact Endline	MCC 2011-2012 Base-line Rural Survey (reported in 2013). MCC 2019 Follow-up Rural Survey/2021 results report.
	Outcome	Average household investment in property and land for households before and after receiving a DUAT	Average value of investments in property and land for households before and after receiving a DUAT	US Dollars	Rural and Urban	MCC Independent Evaluation	Ministry of Agriculture (MINAG) and MSU Baseline; and Social Impact Endline	MCC 2011-2012 Base-line Rural Survey (reported in 2013). MCC 2019 Follow-up Rural Survey/2021 results report.
	Outcome	Households that perceive future land related conflicts in-LTR intervention areas	Percentage of HHs that perceive future land related conflicts in LTR intervention areas before and after receiving a DUAT	Percentage	Rural and Urban	MCC Independent Evaluation	Ministry of Agriculture (MINAG) and MSU Baseline; and Social Impact Endline	MCC 2011-2012 Base-line Rural Survey (reported in 2013). MCC 2019 Follow-up Rural Survey/2021 results report.
PROJECT: Farmer Income Support Project								
	Outcome	Income from coconuts and coconut products (households)	Average household income from coconuts and coconut products calculated as the Value of retained crops (coconut and coconut products) + Sales of coconut and coconut products	Meticais (2009 values)	None	MINAG/MSU 2008 Base-line Survey and Abt Associates' 2014 Follow-up Survey	MINAG/MSU (2008 Base-line Survey) and Abt Associates, Inc (2014 Evaluation of FISP)	2008 Base-line and Evaluation of the Farmer Income

								Support Project
	Outcome	Income from intercropping	Average household income from intercropping	Meticais/hectare (2009 values)	None	MINAG/MSU 2008 Base-line Survey and Abt Associates' 2014 Evaluation of FISP	MINAG/MSU (2008 Base-line Survey) and Abt Associates, Inc (2014 Evaluation of FISP)	March 2014
	Output	Hectares of alternative crops under production	Total area of alternative crops under production in project areas	Hectares	None	2013 ACDI-VOCA End-of-Project Report and Abt Associates' 2014 Evaluation of FISP	MINAG/MSU (2008 Base-line Survey) and Abt Associates, Inc (2014 Evaluation of FISP)	March 2014

ANNEX II: Table of Indicator Baselines and Targets

Common Indicator	Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (year)	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018
PROJECT: Water Supply and Sanitation Project										
	Outcome	Time to get to non-private water source (Rural)	Minutes	Level	161					
WS-14	Outcome	Residential water consumption (rural)	Liters per capita per day	Level	17.2					
Activity 2: Rehabilitation and Expansion of Water supply systems in urban areas										
	Output	Rated capacity to deliver potable water	Cubic meters/ day	Level	55,036					
	Output	Rated capacity to deliver potable water - Nampula urban	Cubic meters/ day	Level	16,000					
	Output	Rated capacity to deliver potable water - Nacala urban	Cubic meters/ day	Level	11,400					
	Output	Rated capacity to deliver potable water - Nacala well fields (M'paco and Mutuzi)	Cubic meters/ day	Level	3,850					
	Output	Rated capacity to deliver potable water - Pemba Metuge well field	Cubic meters/ day	Level	12,192					
	Output	Rated capacity to deliver potable water - Quelimane well fields (Licuari, Nicoadala and Inhane)	Cubic meters/ day	Level	10,416					

	Output	Rated capacity to deliver potable water - Montepuez well fields (Niuhula and Mecuhia)	Cubic meters/ day	Level	1,178					
WS-11	Outcome	Volume of water produced	Cubic meters/ day	Level	-					
	Outcome	Volume of water produced - Nampula urban	Cubic meters/ day	Level	-					
	Outcome	Volume of water produced - Nacala urban	Cubic meters/ day	Level	-					
	Outcome	Volume of water produced - Nacala well fields (M'paco and Mutuzi)	Cubic meters/ day	Level	-					
	Outcome	Volume of water produced - Pemba Metuge well field	Cubic meters/ day	Level	-					
	Outcome	Volume of water produced - Quelimane well fields (Licuari, Nicoadala and Inhane)	Cubic meters/ day	Level	-					
	Outcome	Volume of water produced - Montepuez well fields (Niuhula and Mecuhia)	Cubic meters/ day	Level	-					
	Output	Increased safe/reliable yield	Cubic meters/ day	Level	7,200					
	Output	Increased safe/reliable yield - Nampula urban	Cubic meters/ day	Level	-					

	Output	Increased safe/reliable yield - Nacala urban	Cubic meters/ day	Level	-					
	Output	Increased safe/reliable yield - Nacala well fields (M'paco and Mutuzi)	Cubic meters/ day	Level	-					
	Output	Increased safe/reliable yield - Pemba Metuge well field	Cubic meters/ day	Level	-					
	Output	Increased safe/reliable yield - Quelimane well fields (Licuari, Nicoadala and Inhane)	Cubic meters/ day	Level	-					
	Output	Increased safe/reliable yield - Montepuez well fields (Niuhula and Mecuhia)	Cubic meters/ day	Level	-					
	Output	Increased safe/reliable yield - Nacala Dam	Cubic meters/ day	Level	7,200					
PROJECT: Road Rehabilitation Project										
R-9	Outcome	Roughness	IRI units	Level	8					
	Outcome	Roughness - Rio Ligonha - Nampula	IRI units	Level	8					
	Outcome	Roughness - Namialo - Rio Lurio	IRI units	Level	8					
	Outcome	Total time savings (Millions of dollars)	Millions of US Dollars, 2009 values	Level	0					

	Outcome	Total time savings (Millions of dollars) - Rio Ligonha - Nampula	Millions of US Dollars, 2009 values	Level	0					
	Outcome	Total time savings (Millions of dollars) - Namialo - Rio Lurio	Millions of US Dollars, 2009 values	Level	0					
R-11	Outcome	Road Traffic Fatalities	Number	Level	-					
	Outcome	Road Traffic Fatalities - Male	Number	Level	-					
	Outcome	Road Traffic Fatalities - Female	Number	Level	-					
R-10	Outcome	Average annual daily traffic	Number of vehicles	Level	5220					
	Outcome	Average annual daily traffic - Rio Ligonha - Nampula	Number of vehicles	Level	4598					
	Outcome	Average annual daily traffic - Namialo - Rio Lurio	Number of vehicles	Level	622					
PROJECT: Land Tenure Services Project										
	Outcome	First time DUATs issued in the 4 northern provinces	Number	Cumulative	0					
	Outcome	First time DUATs issued in the 4 northern provinces: Niassa	Number	Cumulative	0					

	Outcome	First time DUATs issued in the 4 northern provinces: Cabo Delgado	Number	Cumulative	0					
	Outcome	First time DUATs issued in the 4 northern provinces: Nampula	Number	Cumulative	0					
	Outcome	First time DUATs issued in the 4 northern provinces: Zambezia	Number	Cumulative	0					
	Outcome	First time DUATs issued in the 4 northern provinces: Urban	Number	Cumulative	0					
	Outcome	First time DUATs issued in the 4 northern provinces: Rural	Number	Cumulative	0					
	Outcome	DUAT transfers (sales)	Number	Level	0					
	Outcome	DUAT transfers (sales): Niassa	Number	Level	0					
	Outcome	DUAT transfers (sales): Cabo Delgado	Number	Level	0					
	Outcome	DUAT transfers (sales): Nampula	Number	Level	0					
	Outcome	DUAT transfers (sales): Zambezia	Number	Level	0					

	Outcome	DUAT transfers (sales): Urban	Number	Level	0					
	Outcome	DUAT transfers (sales): Rural	Number	Level	0					
	Outcome	Time to process a DUAT (Rural only)	Number	Level	0					
	Outcome	Time to process a DUAT: Plot size <1,000 ha	Number	Level	0					
	Outcome	Time to process a DUAT: plot size 1,000 - 10,000 ha	Number	Level	0					
	Outcome	Time to process a DUAT: plot size >10,000 ha	Number	Level	0					
L-7	Outcome	Change in time for property transactions	Percentage	Level	0					
	Outcome	Change in time for property transactions: plot size < 1,000 ha	Percentage	Level	0					
	Outcome	Change in time for property transactions: plot size 1,000 - 10,000 ha	Percentage	Level	0					
	Outcome	Change in time for property transactions: plot size > 10,000 ha	Percentage	Level	0					

	Outcome	Community land certificates	Number	Cumulative	0					
	Outcome	Community land certificates: Niassa	Number	Cumulative	0					
	Outcome	Community land certificates: Nampula	Number	Cumulative	0					
	Outcome	Community land certificates: Cabo Delgado	Number	Cumulative	0					
	Outcome	Community land certificates: Zambezia	Number	Cumulative	0					
	Outcome	Production value of rural agricultural land	US Dollars	Level	1.1209 meticals per sq meter					
	Outcome	Value of urban land parcel holding	US Dollars	Level	267 meticais per sq meter					
	Outcome	Average household investment in property and land for households before and after receiving a DUAT	Meticais, 2009 values	Level	MSU will provide					
	Outcome	Average household investment in property and land for households before and after receiving a DUAT - Rural	Meticais, 2009 values	Level	406					
	Outcome	Average household investment in property and land for households before and after receiving a DUAT - Urban	Meticais, 2009 values	Level	MSU will provide					

	Outcome	Households that perceive future land related conflicts in LTR intervention areas	Percentage	Level	MSU will provide					
	Outcome	Households that perceive future land related conflicts in LTR intervention areas - Rural	Percentage	Level	12.2					
	Outcome	Households that perceive future land related conflicts in LTR intervention areas - Urban	Percentage	Level	23.6					
Activity 2: Land Administration Capacity Building										
	Outcome	New student enrollments in the National Institute for Land Administration and Cadastre Training (INFATEC)	Number	Level	438					
	Outcome	New student enrollments in the National Institute for Land Administration and Cadastre Training (INFATEC) - Male	Number	Level	162					
	Outcome	New student enrollments in the National Institute for Land Administration and Cadastre Training (INFATEC) - Female	Number	Level	276					
	Outcome	Students graduating from INFATEC	Number	Level	64					
	Outcome	Students graduating from INFATEC - Male	Number	Level	32					
	Outcome	Students graduating from INFATEC - Female	Number	Level	32					
PROJECT: Farmer Income Support Project										
	Outcome	Income from coconuts and coconut products (households)	Meticais, 2009 values	Level	1,738					

Activity 1: Rehabilitation of Endemic Areas										
	Outcome	Income from intercropping	Meticais / hectare, 2009 values	Level	3,467					
Activity 3: Improvement of Productive Activity										
	Output	Hectares of alternative crops under production	Hectares	Cumulative	0					