THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF FINANCE

MILLENNIUM CHALLENGE ACCOUNT - TANZANIA

MONITORING AND EVALUATION PLAN

June 2013

This monitoring and evaluation plan is a binding document that serves as a guide for program implementation and management. It will help Millennium Challenge Account – Tanzania (MCA-T), its Governing Board, Auditors, MCA-T Management Team, Implementing Entities, beneficiaries, and other stakeholders know the progress being made towards the achievement of objectives and results.

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LIST OF ABBREVIATIONS AND ACRONYMS

AADT	Average Annual Daily Traffic
DMA	District Metering Area
DPO	District Project Officer
ERR	Economic Rate of Return
GDP	Gross Domestic Product
GoT	Government of Tanzania
GIP	Gender Integration Programme
GFP	Gender focal Point
HBS	Household Budget Survey
HDM-4	Highway Development and Maintenance – version 4 (analysis program)
IRI	International Roughness Index
KVa	Kilo volt ampere
KWh	Kilowatt hour
M&E	Monitoring and Evaluation
MCA-T	Millennium Challenge Account – Tanzania
MCC	Millennium Challenge Corporation
MIS	Management Information System
MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Tanzania (Swahili acronym for National Strategy for Growth and Reduction of Poverty)
MKUZA	Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Zanzibar (Swahili acronym for the Zanzibar Strategy for Growth and Reduction of Poverty)
MLD	Million Liters per Day
MoF	Ministry of Finance
MVa	Megavolt Ampere
MoIC	Ministry of Infrastructure and Communications
MWh	Megawatt hour
NORAD	Norwegian Agency for Development
NEMC	National Environmental Management Council
NPS	National Panel Survey
NRW	Non-Revenue Water
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
T&D	Transmission and Distribution
TANESCO	Tanzania Electric Supply Company
TANROADS	Tanzania National Roads Agency
TAA	Tanzania Airports Authority
TBD	To be Determined
TOR	Terms of Reference

TWG	Technical Working Group
URT	United Republic of Tanzania
US$	United States Dollar
ZECO	Zanzibar Electricity Corporation
ZDoE	Zanzibar Department of Environment

1 INTRODUCTION

The Government of the United States of America acting through the Millennium Challenge Corporation (MCC) and the Government of Tanzania (GoT) have entered into a Millennium Challenge Compact in the amount of 698 million USD for Millennium Challenge Account-Tanzania (MCA-T) to help facilitate poverty reduction through economic growth in Tanzania.

The Compact will be implemented over a five (5) year period from 2008-2013, and infrastructure projects are the core activities under the Compact. The M&E functions under the Compact will be implemented in parallel with Compact activities. M&E plays an important role in the management of the Compact by ensuring that the Compact resources and investments are being utilized effectively and efficiently; activities are implemented in a timely manner; services generated are being accessed, utilized and beneficiaries are satisfied with the services; and the expected results are being achieved in a sustainable manner.

The M&E Plan is a tool to manage the process of monitoring, evaluating and reporting progress toward Compact results. It is used in conjunction with other tools such as work plans, procurement plans, and financial plans. The M&E Plan serves the following main functions:

- Explains in detail *how* and *what* the MCC and MCA-T will a) monitor to determine whether the Projects are on track to achieving their intended results and b) evaluate to assess implementation strategies, provide lessons learned, determine cost effectiveness and estimate the impact of Compact interventions;
- Includes all indicators that must be reported to MCC on a regular basis;
- Includes a description of complementary data to be collected by MCA-T for evaluation of programs, but not reported to MCC on a regular basis, including quantitative and qualitative studies;
- Includes any M&E requirements that the MCA–T must meet in order to receive disbursements;[1] and
- Serves as a communication tool, so that MCA-T staff and other stakeholders clearly understand the objectives and targets the MCA is responsible for achieving.

The MCA-T M&E Plan includes:

- A summary of the Tanzania Compact Goal
- A summary of each Tanzania Compact Project's objectives and logics;
- The number of expected beneficiaries by Project, defined in accordance with MCC's *Guidelines for Economic and Beneficiary Analysis*;
- A summary of the initial and any re-scoped Economic Rate of Return (ERR) analysis

[1] Substantial compliance with the M&E Plan is a condition for approval of each quarterly disbursement request by the country.

- An overview of the monitoring activities, including selecting indicators and identifying data sources, baseline and target values, quarterly reporting, gender analysis requirements and additional monitoring activities led by MCA-T M&E unit
- A description of the performance and impact evaluations under the Compact
- Summary of the assumptions and risks related to M&E under the Compact
- Description of the institutional framework for managing MCA-T M&E activities and portfolio
- MCA-T M&E directorate work plans and budget

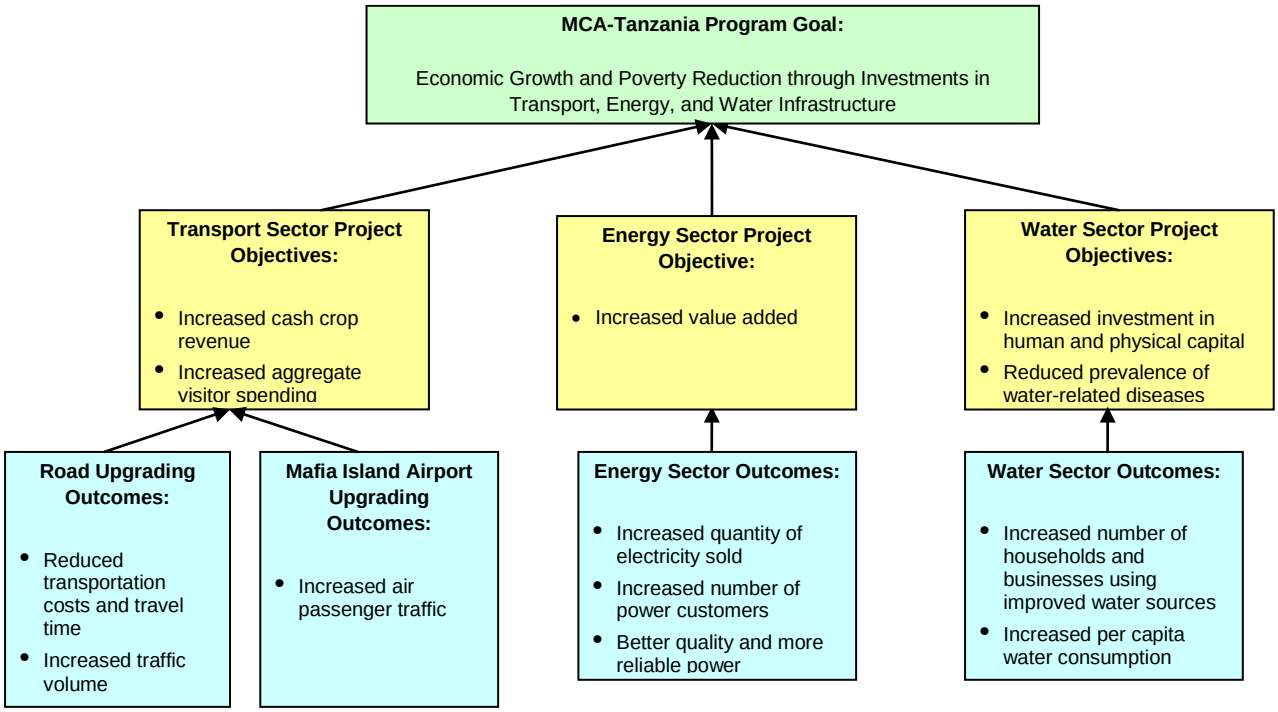
MCC and MCA-T may make adjustments to the M&E Plan as needed, provided any significant modifications or amendments of the plan are consistent with the requirements of the Compact and any relevant Supplemental Agreement between the Parties and have been approved by MCC and the MCA-T Governing Board..

2 COMPACT ACTIVITIES

2.1 Compact Goal

The Compact Goal is to advance poverty reduction through economic growth in Tanzania through strategic investments in transportation, energy and water infrastructure. The compact logic is illustrated below.

Tanzania, comprised of the Mainland and Zanzibar, is located in East Africa bordering the Indian Ocean and eight nations.[2]Following independence from British colonial rule in 1961, Mainland Tanzania established a democratic government and merged with Zanzibar in 1964 to form the URT. In the 1990s, the policies of the GoT began to shift to market liberalization and reform. This trend has continued and strengthened over the last several years and Tanzania has achieved



[2] Tanzania's border countries include Kenya, Uganda, Rwanda, Burundi, Democratic Republic of Congo, Zambia, Malawi, and Mozambique.

a high degree of macroeconomic stability. Although a drought in 2006 slowed economic growth, Tanzania continues to be one of Africa's high performers, with real annual GDP growth projected at 7.2% in 2008.[3]

In spite of this macroeconomic stability and 6.4% annual growth, nearly 36% of the Mainland population[4] and 49% of the Zanzibar population[5] live below the national poverty line. In 2007, three key constraints to economic growth and private investment were identified during the Compact due diligence: (i) an inadequate transportation network, (ii) an insufficient and unreliable supply of energy, and (iii) a shortage of potable water. The MCC Compact is designed specifically to address each of these constraints. More detailed Compact information is available on the MCC website – http://www.mcc.gov/pages/countries/program/tanzania-compact.

2.2 Transport Project

The Transport Project objectives are to (i) increase cash crop revenue through access to improved Mainland trunk and Pemba rural roads and (ii) increase aggregate tourist spending through upgrades to the Mafia Island Airport.

2.2.1 Transport Activities

The activities financed under the Transport Project include:

- **Mainland Trunk Roads**: Upgrading of up to 435 kilometers of trunk roads to bitumen pavement standards for the following road segments: Tanga-Horohoro, Tunduma–Sumbawanga and Namtumbo - Songea and Peramiho – Mbinga (on Mtwara Corridor);
- **Zanzibar Rural Roads**: Upgrading of up to 35 kilometers of rural roads on Pemba Island
- **Road Maintenance**: funding to improve maintenance management efficiency; and
- **Mafia Island Airport**: Upgrading 1.6 kilometers of Mafia Island Airport.

2.2.2 Transport Project Logic

Mainland Trunk Roads, Zanzibar Rural Roads and Road Maintenance

Figure 1 summarizes the Project Logic and key indicators for monitoring and evaluation of Mainland and Pemba Roads and Road Maintenance.

Through the Mainland and Pemba Transport Activities, MCC will finance design, construction

[3] Country Report August 2007, The Economist Intelligence Unit. www.eiu.com
[4] Poverty and Human Development Report 2005,GoT Research & Analysis Working Group.
[5] 2004/2005 Household Budget Survey - Zanzibar, GoZ, Office of Chief Government Statistician September 2006.

and supervision activities for five main road activities. In addition, MCC will finance capacity building and technical assistance activities for the implementing entities, including supply of equipment. The outputs associated with these inputs include 470 kilometers of upgraded roads, improved policy related to road maintenance and budget for road maintenance activities, and temporary employment through construction contracts.

The outcomes expected to be realized through implementing the Roads Project include: an increase in savings in Vehicle Operating Costs as measured by the International Roughness Index; and increase in time savings and Average Daily Traffic (AADT). In addition, the project will monitor trends in Road Traffic Fatalities.

The Road Maintenance Activity, budgeted at approximately $694,000, will provide technical assistance and equipment to TANROADS and Zanzibar Ministry of Infrastructure and Communication (MOIC) to improve the institutions' capacity in road maintenance planning and management. This will include the provision of equipment for measuring road strength and roughness and the establishment of Roads Maintenance Management System software to store data on road assessments. It will also consist of training on maintenance planning and HDM-4 analysis and continued capacity building for MOIC conducted by TANROADS.

The outcomes expected to be realized through the Road Maintenance Activity are: (1) improved capacity within TANROADS to plan and implement asphalt pavement strengthening and overlay projects in a cost effective manner, and (2) improved capacity within MOIC and the Zanzibar Roads Fund Board to effectively plan, fund, and implement road maintenance activities on the Zanzibar road network.

For the original ERR analysis of the Roads Projects, MCC estimated two main benefit streams:

1. Increase in economic activity and investment. Improved, all-year access to markets is expected to lead to an increase in revenue from cash crop production. Total cash crop revenue for the "without project scenario" was assumed to be total current cash crop revenue times an adjustment factor (ratio of length of each road to length of total regional trunk road network) times a productivity growth rate of 4% per year. Total cash crop revenue for the "with project scenario" was assumed to be that of the "without project scenario" times a one-time 25% jump in revenue times a 3% annual growth rate times a uniform adjustment factor of 50%. This translates to an expected increase in cash crop revenue between 6-16% over 2007 estimates. Given that the roads may also trigger additional economic activities, either through households living near the roads investing in income generating activities (IGA) or through increase in the number of stand-alone businesses, the project will also monitor these indicators for economic activities.

2. Improved human capital accumulation through improved health and productivity**.** The roads project is also assumed to improve access to health services. This is expected to result in fewer sick days per year, and conversely, more time spent on productive activities. These benefits are estimated to affect the percentage of the population in the labor force (80%) which is within the zone of influence of the road (43% for mainland roads and 80% for rural roads). For the ERR analysis, these benefits were monetized using an annual increase in estimated adult rural wage due to improved health (rural roads were assumed to lead to a higher benefit in this regard than trunk roads). Estimated adult wage in rural area was calculated by multiplying the regional GDP per capita by 50% (to estimate the share of GDP attributable to wages and scale it to a rural setting).

Mafia Island Airport Upgrade

Figure 2 summarizes the Project Logic and key indicators for monitoring and evaluation of the Mafia Island Airport Upgrade.

Through the Transport Activities, MCC will also finance design, construction and supervision activities for upgrades to the Mafia Island Airport, focused primarily on upgrading and extending the runway. In addition, MCC will finance capacity building and technical assistance activities for the implementing entity, including supply of equipment and training sessions. The outputs associated with these inputs include an extended, paved runway, and temporary employment through construction contracts.

The ERR analysis for the Mafia Island Airport project assumes that resurfacing the airport's runway and improving other airport facilities will allow for easier and cheaper access to the island, resulting in increased tourist and business travel to and from the mainland. This is expected to translate into more dollars spent in the local economy for tourism-related businesses. In 2008, approximately 8526 passengers arrived at the airport, including a mix of both business and leisure travel. The number of visitors to Mafia Island is estimated to increase by 10% post upgrade and then experience an annual growth rate of 6%. Without the upgrade, there is no expected post-project spike in visitor growth rate and the general annual growth in number of visitors is estimated at 4%, the local growth rate of GDP for Mafia Island. As of 2007, travelers stayed an average of three nights and spent approximately US$100 per night. The increase in visitor nights on Mafia Island is expected to increase annual visitor spending by more than US$900,000 five years after the rehabilitation and upgrade of the airport.

2.2.3 Transport Beneficiaries

The anticipated beneficiaries of the Transport Project were identified in feasibility reports as the population of the towns through which the roads would pass, as well as the population of Mafia Island.

TABLE 1: BENEFICIARIES TRANSPORT SECTOR PROJECT

Activity	Estimated number of Beneficiaries by 2027
Tanga-Horohoro	397,946
Tunduma-Sumbawanga	587,360
Mtwara Corridor	456,007
Pemba Rural Roads	109,421
Mafia Island Airport	73,819
Total	**1,624,553**

Figure 1: Transport Sector Project Logic for Mainland and Pemba Roads

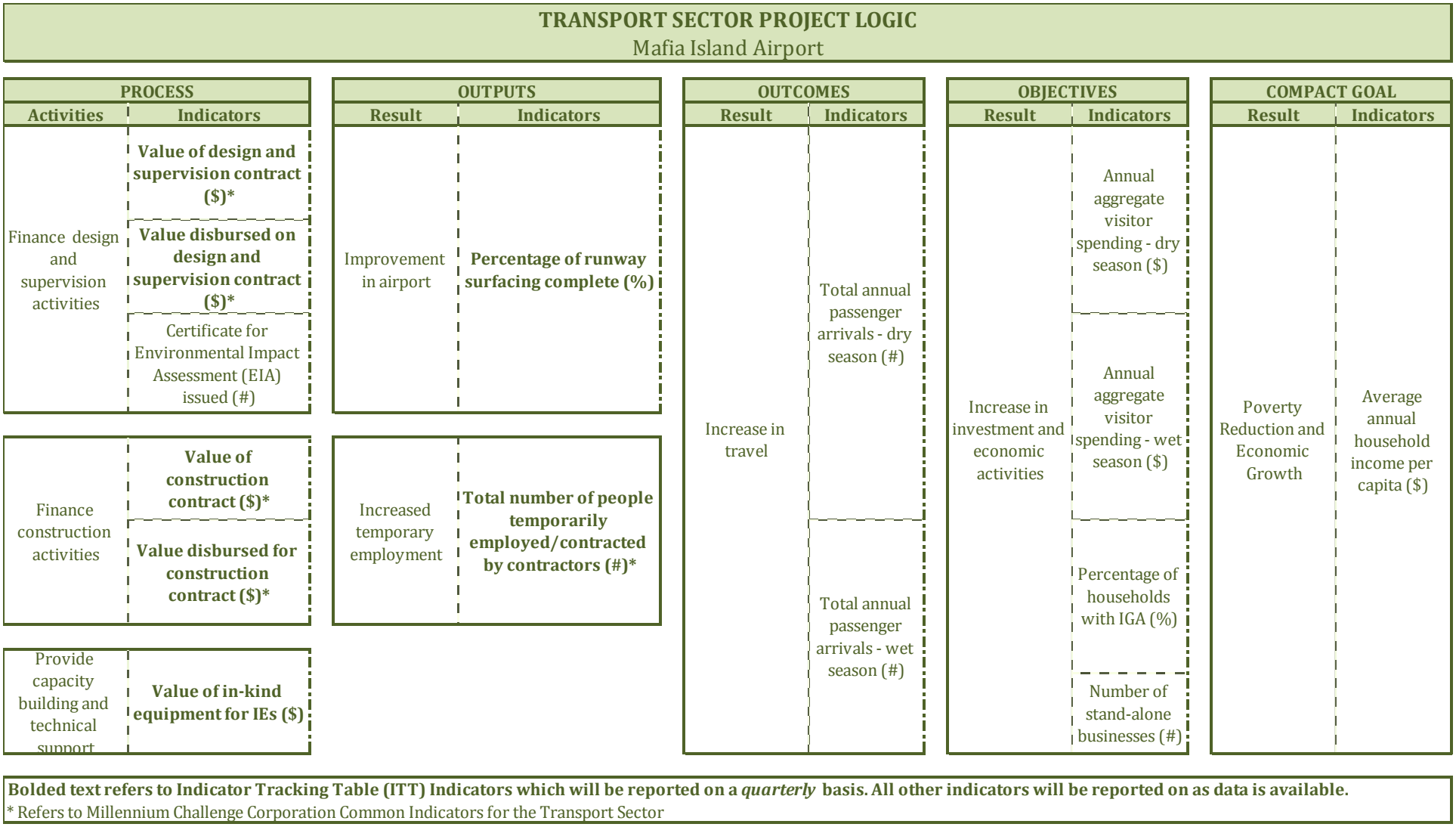
TRANSPORT SECTOR PROJECT LOGIC
Mainland and Pemba Roads

PROCESS		OUTPUTS		OUTCOMES		OBJECTIVES		COMPACT GOAL	
Activities	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**
Finance design activities	**Value of design contract ($)***	Improvements in roads (upgrading)	**Schedule of Performance Ratio (ratio)**	Increase in savings in Vehicle Operating Costs (VOC)	International Roughness Index (m/km)*	Increase in time savings	Average time to market from home (min)	Poverty Reduction and Economic Growth	Average annual household income per capita ($)
	Value disbursed on design contract ($)*		**Percentage of base completed (%)**				Average time to medical facilities from home (min)		
	Certificate for Environmental Impact Assessment (EIA) issued (#)		**Percentage of surfacing completed (%)**						
	RAP approved (#)		**Total km of roads completed (taken over) (km)***						
Finance construction activities	**Value of construction contract ($)***			Increase in traffic volume	Average daily traffic count (#)*	Increase in investment and economic activities	Average annual cash crop revenue per household ($)		
	Value disbursed for construction contract ($)*						Percentage of households with IGA (%)		
	KM of road under contract (km)*						Number of stand-alone businesses (#)		
Establish partnerships	Wildlife Management Area MoU signed between MCA-T and USAID (Date)	Increased technical and administrative capacity to improve sustainability of road quality	Percent of total maintenance budget spent (%)						
Provide capacity building and technical support	**Value of in-kind equipment for IEs ($)**	Increased temporary employment	**Total number of people temporarily employed/contracted by contractors (#)***	Improved road safety	**Annual road traffic fatalities (#)***	Improve human capital accumulation	Average hours worked in the last week (hrs)		
							Percentage of school children who missed any in the last 4 weeks (%)		

Bolded text refers to Indicator Tracking Table (ITT) Indicators which will be reported on a *quarterly* basis. All other indicators will be reported on as data is available.
* Refers to Millennium Challenge Corporation Common Indicators for the Transport Sector

Please note: HDM-4 analysis is designed to compute, for different vehicle types and road conditions, vehicle speeds, fuel consumption, vehicle operating costs, passenger time costs, emission and accident costs based on the Highway Development and Management Model (HDM-4) relationships. The model computes unit road user costs, performs sensitivity analysis, computes network road user costs and performs a simplified economic evaluation of a road project. (World Bank). MCA-T and MCC Transport Sector Leads will confirm if a transport specialist will be contracted to conduct HDM-4 analysis.

Figure 2: Transport Sector Project Logic for Mafia Island Airport Upgrade



Bolded text refers to Indicator Tracking Table (ITT) Indicators which will be reported on a *quarterly* basis. All other indicators will be reported on as data is available.

* Refers to Millennium Challenge Corporation Common Indicators for the Transport Sector

2.3 Energy Project

The Energy Project objectives are: (1) to increase value added to businesses, as measured through increases in business revenue, wages and reductions in non-electricity energy expenditures; and (2) to improve human capital accumulation as measured through improved health and education indicators.

2.3.1 Energy Activities

The activities financed under the Energy Project include:

- **Distribution Systems Rehabilitation and Extension:** rehabilitating existing distribution infrastructure (including new transformers and switchgear for an estimated 22 substations), and extending distribution line to underserved areas in Mwanza, Tanga, Morogoro, Iringa, Dodoma, and Mbeya regions. The Kigoma region was added following the cancellation of the Malagarasi Hydropower project.
- **Zanzibar Cable Interconnector:** laying of an approximately 40 km long, 132kV, 100MW capacity submarine electric transmission cable from the mainland to Unguja Island, Zanzibar; and
- **Kigoma Solar:** the design, supply, delivery, installation, testing, commissioning, and handing-over of fully operational solar PV systems for selected secondary schools, health facilities, markets, and fishing communities for night fishing. In addition, a commercially-oriented household solar program is expected to sell 61,275 systems to households over four years.

Note: A previous activity, the Malagarasi Hydropower and Kigoma Distribution project, was canceled after due diligence found that the project posed high environmental risks. In place of this activity, a feasibility study on the hydropower project was conducted, the Kigoma Solar activity was developed for implementation, and Kigoma region was added to the Distribution activity.

2.3.2 Energy Project Logic

Mainland Distribution Systems, Rehabilitation and Extension

Figure 3 summarizes the Project Logic and key indicators for monitoring and evaluation for Mainland Distribution Systems, Rehabilitation and Extension.

Through the Energy Activities, MCC will finance the design, construction and supervision activities for transmission and distribution (T&D) investments in seven regions. In addition,

MCC will finance capacity building and technical assistance activities for the implementing entities, including supply of equipment and training sessions for implementing entity. The outputs associated with these inputs include over 1,300 kilometers of 33/11 KV lines constructed, 1,779 kilometers of LV lines constructed, increase in the grid and primary substation capacity, improved policy-related financial sustainability of the utilities, temporary employment through construction contracts, as well as training sessions for implementing entities.

The outcomes expected to be realized from the T&D Project include: an increase in the number of domestic, commercial and industrial customers; improvements in the quality of service delivered as measured by reductions in duration and frequency of power outages[6]; increases in the quantity of electricity sold, and reductions in the consumption of other energy sources, such as kerosene and diesel.

For the original ERR analysis[7] of the T&D activity, MCC estimates several different benefit streams:

1. Increased investment and economic activity. The provision of additional supplies of energy should increase investment and economic activity in the targeted regions. The basis for the analysis here is Calderon and Serven, (2005), and we will monitor changes in business revenue, total annual wages and total business expenditures on energy and protective equipment.

2. Power quality improvements reducing costs associated with protective equipment and damages

3. Accumulation in human capital from improvement in health status. The main social benefits arise from improvements in education and health. According to the World Bank, Indoor Air Pollution (IAP) is a major risk factor, accounting for 4 percent of the global burden of disease measured by disability adjusted life years (DALYs) lost. It is caused by the use of low-cost, widely available traditional energy sources such as coal and bio-mass (wood, dung, and crop residues) for cooking and home heating. Use of solid fuels, biomass or coal causes respiratory and other illnesses. It also has implications for household safety (burns and disfiguration, fire), allocation and use of the time of household members, especially women, and local ecology (hygiene, fire hazards, ambient air pollution, etc.)[8].

[6] Due to the fact that data on the number of customers affected per outage is not collected by the implementing entity, the computation of SAIFI and SAIDI (frequency and duration per customer) is not possible.

[7] At the time of the final M&E Plan revision, the Closeout ERR model was in the process of being developed to reflect new information since Compact signing. As this revised model was not yet finalized, it could not be included in the M&E Plan.

[8] Reference World Bank Indoor Air Pollution site:
http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTPHAAG/0,,cont

4. Accumulation in human capital from increase in schooling. It is anticipated that children enrolled in school will be able to study longer as electricity provides lighting.

It is unclear if these benefits are more likely to accrue as a result of direct household connection or spillover effects from community-level access to electricity. The impact evaluation for the energy T&D project will attempt to address these questions. In addition, although the investment is not intended to directly affect technical and non-technical losses, this will be monitored under the project, as this is a link between the outputs produced (increase in electricity distribution and substation capacity),the expected improvements in outcomes (improve quality of service and increase electricity consumption), and the benefits expected to accrue at the population level. If technical and non-technical losses remain high, the amount and quality of electricity reaching the population will face continued constraints.

Zanzibar Cable Interconnector

Figure 4 summarizes the Project Logic and key indicators for monitoring and evaluation for Zanzibar Cable Interconnector.

Through the Energy Activities, MCC will finance the design, construction and supervision activities for laying a 40km cable from mainland to Zanzibar's Unguja Island. In addition, MCC will finance capacity building and technical assistance activities for the implementing entities, including supply of equipment and training sessions. The outputs associated with these inputs include 65 kilometers of 132 kV lines constructed (submarine cable and T&D lines), increase in the transmission and distribution substation capacity, improved policy-related financial sustainability of the utilities, temporary employment through construction contracts, as well as training sessions for implementing entities.

The outcomes expected to be realized from the Zanzibar Project include: an increase in the number of domestic, commercial and industrial customers; improvements in the quality of service delivered as measured by reductions in duration and frequency of power outages; increases in the quantity of electricity sold and reductions in the consumption of other energy sources, such as kerosene and diesel.

The original ERR analysis of the Zanzibar Interconnector is very similar to the T&D analysis. MCC estimates three different benefit streams:

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1. Increased investment and economic activity -The provision of additional supplies of energy should increase investment and economic activity in the affected regions. The basis for the analysis here is Calderon and Serven (2005), and we will monitor changes in business revenue, total annual wages and total business expenditures on energy and protective equipment.

2. Power quality improvements reducing costs associated with protective equipment and damages

3. Accumulation in human capital through increase in education and improvement in health status. There are also potential social and environmental benefits arising from providing more electricity in addition to the economic benefits. The main social benefits arise from improvements in education and health, including health benefits related to avoiding emissions from diesel and kerosene use. These social benefits are primarily associated with smaller domestic customers, where the replacement energy is non-electric and there is a closer link to health and education. It is unclear if these benefits are more likely to accrue as a result of direct household connection or spillover effects from community level access to electricity. The impact evaluation for the Mainland T&D project will help to address these questions.

In addition, although the investment is not intended to directly affect technical and non-technical losses, this will be monitored under the project, as this is a direct link between the outputs produced and the expected improvements in outcomes and objective indicators.

The evaluation focuses primarily on the hotel industry on Unguja Island as this is the largest industry and the one expected to maximize benefits from improvements in access and quality of electricity. However, the monitoring activities will look at outcomes for the Unguja Island as a whole.

Kigoma Solar

Figure 5 summarizes the Project Logic and key indicators for monitoring and evaluation for Kigoma Solar.

Through the Energy Activities, MCC will finance the design, construction and supervision activities for installing solar systems in secondary schools, health facilities, markets and fishing communities. In addition, MCC will finance capacity building and technical assistance activities, specifically training sessions for end users of the solar energy installations. The outputs associated with these inputs include the number and capacity of systems installed, as measured by kilowatts per hours, as well as hours of training sessions for households.

The outcomes expected to be realized from the Kigoma Solar Project include: an increase in the number of customers served by solar power installations; improvements in the quality of electricity service delivered as measured by duration of power availability; increases in the quantity of solar electricity sold, reductions in non-solar electricity consumption, and reductions in the consumption of other energy sources, such as kerosene and diesel.

Similar to the main Energy projects, the Kigoma Solar project is also intended to increase economic activity and investment, and improve human capital accumulation in order to contribute to poverty reduction and economic growth.

Since the Kigoma Solar Activity was developed mid-Compact as a replacement for the canceled Malagarasi Hydropower and Kigoma Distribution project, its ERR analysis does not yet exist, but is expected prior to the Compact End Date.

2.3.3 Energy Beneficiaries

Beneficiaries are estimated as the sum of existing and new customers by 2027. Customers include residential and industrial and commercial connections. Given the re-scoping and removal of the Malagarasi Hydropower project and addition of the Kigoma Solar project, the final beneficiary numbers will not be known until an estimate of the number of beneficiaries under the Kigoma Solar project is available.

TABLE 2: BENEFICIARIES ENERGY SECTOR PROJECT

Activity	Estimated number of Beneficiaries by 2027
Tanga T&D	194,087
Dodoma T&D	127,356
Morogoro T&D	191,585
Iringa T&D	115,453
Mwanza T&D	274,959
Mbeya T&D	180,222
Zanzibar Interconnector	400,313
Kigoma Solar	Not Currently Available[9]
Total	**1,483,975**

[9] The ERR Model for Kigoma PV Solar Project is yet to be constructed to determine the number of beneficiaries by 2027. It will be developed prior to the close of Compact.

Figure 3: Energy Sector Project Logic for Mainland Transmission and Distribution

ENERGY SECTOR PROJECT LOGIC
Mainland Transmission and Distribution

PROCESS		OUTPUTS		OUTCOMES		OBJECTIVES		COMPACT GOAL	
Activities	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**
Finance feasibility activities	RAP approved (#)	Increase electricity distribution and substation capacity	**Total kilometers of 33 and 11 KV constructed (km)**	Improve electricity service coverage	**Number of current domestic power customers (household) (#)**	Increase investment and economic activities	Average annual business revenue ($)	Poverty Reduction and Economic Growth	Average annual household income per capita ($)
	Certificate for Environmental Impact Assessment (EIA) issued (Date)		**Total kilometers of LV lines constructed (km)**		**Number of current commercial power customers (#)**		Average annual wages ($)		
	Environmental and Social Management Plan approved (Date)		**Total transmission and distribution substation capacity (MVA)**		**Number of current industrial power customers (#)**		Average annual expenditure on energy ($)		
Finance design and supervision activities	**Value of feasibility, preliminary design and supervision contracts ($)**								
	Value disbursed of feasibility, preliminary design and supervision contract ($)								
Finance construction activities	**Value of design and build construction contract ($)**	Improve financial sustainability	**Cost Recovery Ratio (ratio)**	Improve quality of service	**Technical and non-technical losses (%)**	Improve human capital accumulation	Percentage of population with indoor air pollution related illness (%)		
	Value disbursed of design and build construction contract ($)		**Collection Efficiency (%)**		**SAIDI proxy - average duration of blackouts (hrs)**				
Provide capacity building and technical support	**Value of in-kind equipment ($)**	Increased temporary employment	**Total number of people temporarily employed/contracted by contractors (#)**		**SAIFI proxy - Average frequency of blackouts (#)**				
					Average availability of power per day (hrs)		Average hours spent studying last week for all children enrolled in school (hours)		
		Increase in technical and administrative capacity	**Total hours of training delivered to implementing entities (hrs)**	Increase electricity consumption	**Total quantity of electricity sold (MWh/year)**				
					Average annual quantity of other energy sources (kerosene, diesel) consumed (varies)				

Bolded text refers to Indicator Tracking Table (ITT) Indicators which will be reported on a *quarterly* basis. All other indicators will be reported on as data is available.

Figure 4: Energy Sector Project Logic for Zanzibar Cable

ENERGY SECTOR PROJECT LOGIC
Zanzibar Cable

PROCESS		OUTPUTS		OUTCOMES		OBJECTIVES		COMPACT GOAL	
Activities	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**
Finance feasibility activities	RAP approved (#)	Increase electricity distribution and substation capacity	**Total km of 132 KV constructed (km)**	Improve electricity service coverage	**Number of current domestic power customers (household) (#)**	Increase investment and economic activities	Average annual business revenue ($)	Poverty Reduction and Economic Growth	Average annual household income per capita ($)
	Certificate for Environmental Impact Assessment (EIA) issued (Date)				**Number of current commercial power customers (#)**		Average annual wages ($)		
	Environmental and Social Management Plan approved (Date)		**Total transmission and distribution substation capacity (MVA)**		**Number of current industrial power customers (#)**		Average annual expenditure on energy ($)		
Finance design and supervision activities	**Value of feasibility, preliminary design and supervision contracts ($)**								
	Value disbursed of feasibility, preliminary design and supervision contract ($)								
Finance construction activities	**Value of design and build construction contract ($)**	Improve financial sustainability	**Cost Recovery Ratio (ratio)**	Improve quality of service	**Technical and non-technical losses (%)**	Improve human capital accumulation	Average number of employees per hotel (#)		
	Value disbursed of design and build construction contract ($)		**Collection Efficiency (%)**		**SAIDI proxy - average duration of blackouts (hrs)**				
					SAIFI proxy - Average frequency of blackouts (#)				
		Increased temporary employment	**Total number of people temporarily employed/contracted by contractors (#)**		Average availability of power per day (hrs)				
Provide capacity building and technical support	**Value of in-kind equipment ($)**			Increase electricity consumption	**Total quantity of electricity sold (MWh/year)**				
		Increase in technical and administrative capacity	**Total hours of training delivered to implementing entities (hrs)**		Average annual quantity of other energy sources (kerosene, diesel) consumed (varies)				

Bolded text refers to Indicator Tracking Table (ITT) Indicators which will be reported on a *quarterly* basis. All other indicators will be reported on as data is available.

Figure 5: Energy Sector Project Logic for Kigoma Solar

ENERGY SECTOR PROJECT LOGIC
Kigoma Solar

PROCESS		OUTPUTS		OUTCOMES		OBJECTIVES		COMPACT GOAL	
Activities	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**	**Result**	**Indicators**
Finance feasibility, design activities	**Value of feasibility contracts ($)**	Increase access to electricity	**Total capacity of systems installed (kWp)**	Improve electricity service coverage	**Number of PV systems sold and installed at household (#)**	Increase investment and economic activities	Average annual business revenue ($)	Poverty Reduction and Economic Growth	Average annual household income per capita ($)
	Value disbursed of feasibility contracts ($)		**Number of PV systems installed (#)**		**Daily solar power consumption**		Average annual wages ($)		
Finance construction (implementation) activities	**Value of construction contracts ($)**	Increase in technical and administrative capacity	**Total hours of training delivered to end users (#)**	Improve quality of service	Average availability of power in the last 24 hours	Improve human capital accumulation	Average annual expenditure on energy ($)		
	Value disbursed of construction contract ($)			Increase electricity consumption	Average annual quantity of other energy sources (batteries, kerosene, diesel) consumed (varies)		Schools with afterhours study programs (#)		
							Availability of vaccines (#)		

Bolded text refers to Indicator Tracking Table (ITT) Indicators which will be reported on a *quarterly* basis. All other indicators will be reported on as data is available.

2.4 Water Project

The Water Project objective is to increase investment in human and physical capital and reduce prevalence of water-related diseases.

2.4.1 Water Activities

The activities financed under the Water Project include:

- **Lower Ruvu Plant Expansion**: expanding the capacity of the Lower Ruvu water treatment plant serving the Dar es Salaam area, from about 180 million liters per day (MLD) to approximately 270 MLD;
- **Morogoro Water Supply**: improving water supply in Morogoro through rebuilding the non-functioning Mambogo water treatment plant, rehabilitating the Mafiga water treatment plant, and improving water transfer in the existing distribution network. The overall interventions will increase the production of treated water from the baseline 19 million liters of treated water per day to 33 million liters per day (19 MLD to 27 MLD at Mafiga and an additional 6 MLD from Mambogo). Note that the Mambogo system currently supplies 4 MLD of untreated water.

2.4.2 Water Project Logic

Figure 6 summarizes the Project Logic and key indicators for monitoring and evaluation for the Lower Ruvu and Morogoro Water Supply.

Lower Ruvu and Morogoro Water Supply

Through the Water Activities, MCC will finance the design, construction and supervision activities for expanding water treatment plants in order to increase the volume of treated water produced. In addition, MCC will finance the capacity building and technical assistance activities, specifically targeting the utilities' billing and collections activities. The anticipated outputs associated with these inputs include increasing the volume of water produced, improved financial sustainability of the utility companies, and increase in temporary employment under construction activities.

The outcomes expected to be realized from the Water Activities include: an increase in the number of domestic and non-domestic customers, as well as a decrease in the ratio of non-active customers to total customers. Non-active customers are defined as customers who are currently connected to the line and willing to pay for water, but currently not receiving water. With the increase in water volume produced, the Activity will try to increase the water service area to reach customers who are already connected to the line. Although the Activity will not finance

direct connections, it is also possible that more people will connect if the supply area is larger and supply is more reliable. In addition, the Activity is expected to produce improvements in the quality of service delivered as measured by average hours of service and the quality of water as measured by Nephelometric Turbidity Units (NTU), Coliform Microbial Density (per 100 milliliters), and Free Chlorine Residual. Although the Lower Ruvu Activity does not include a water quality improvement component, the Morogoro Activity does include improving the water treatment at source. Even though Lower Ruvu project does not invest directly in improving water quality, the investment will result in a higher quantity of *treated* water provided to Dar es Salaam, which supports the important link between the increase water supply and expected improvements in health status described below. Finally, the Activity is expected to increase the volume of water consumed both by commercial, non-commercial (schools, hospitals) and residential users.

For the original ERR analysis of the Water Project, MCC identifies four benefit streams:

1. Decrease in prevalence of water-related illness. The investment is expected to increase the volume of clean water supplied, thereby reducing the prevalence of water-related diseases, such as cholera.

2. Improved human capital accumulation. As household members become healthier and see reductions in morbidity, we expect to see increase in labor market participation and schooling as individuals are healthier and spend less time taking care of sick relatives.

3. Increased household investment. Reductions in mortality lead households to increase investment in physical capital.

4. Increased business investment and economic activity. Businesses have more access to reliable water, which implies that they can make better investment decisions.

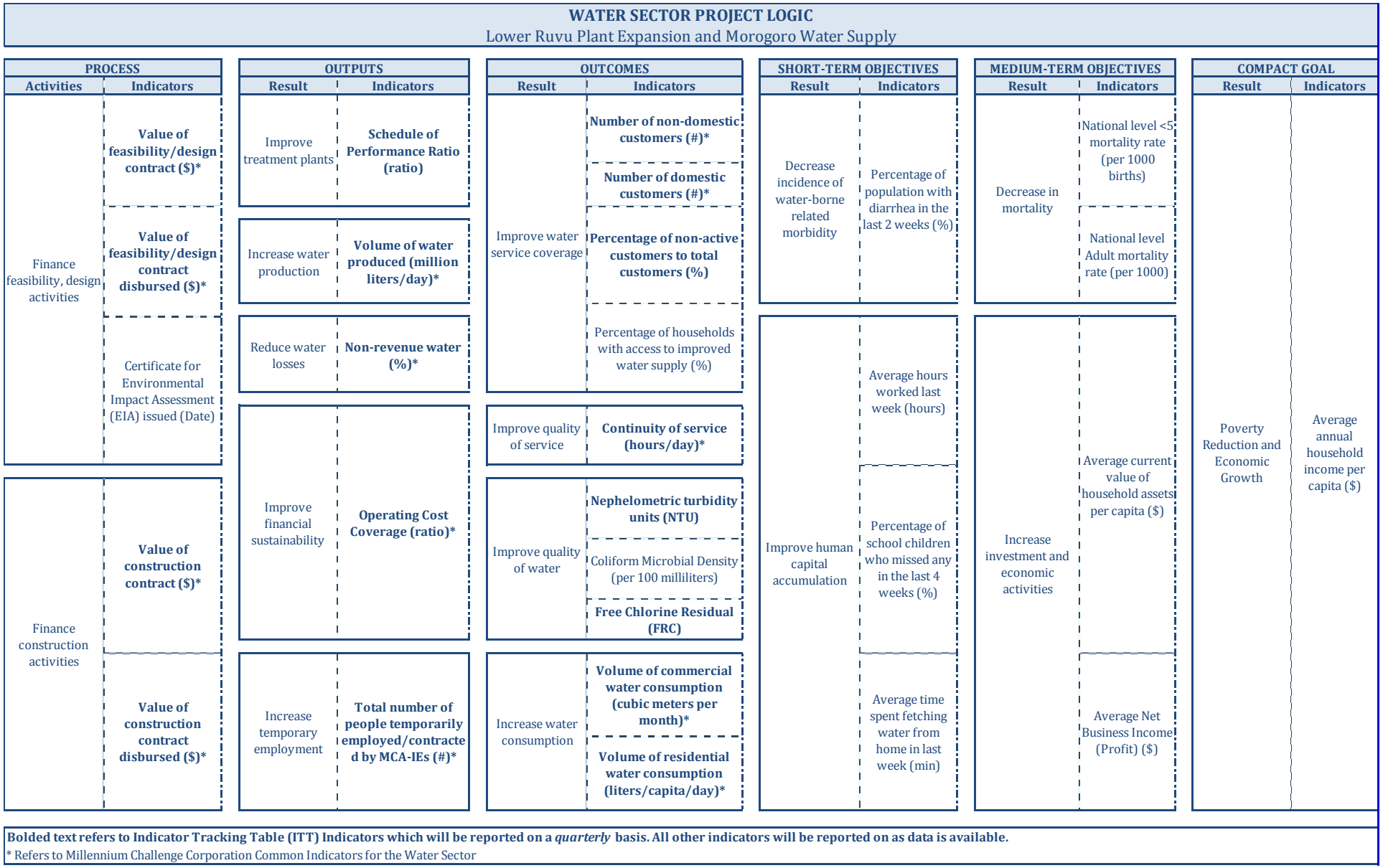
2.4.3 Water Beneficiaries

Beneficiaries are estimated as the sum of existing and new customers by 2027. Customers include residential and industrial and commercial connections.

TABLE 3: BENEFICIARIES WATER SECTOR PROJECT

Activity	Estimated number of Beneficiaries by 2027
Lower Ruvu	2,585,898
Morogoro Water	215,961
Total	**2,801,859**

Figure 6: Water Sector Project Logic for Lower Ruvu and Morogoro Water Supply



Bolded text refers to Indicator Tracking Table (ITT) Indicators which will be reported on a *quarterly* basis. All other indicators will be reported on as data is available.

* Refers to Millennium Challenge Corporation Common Indicators for the Water Sector

2.5 Estimated Total Beneficiaries

The estimated total number of beneficiaries for the Compact covers 2008-2027 and is the sum of beneficiaries of each of the activities, except in the case where there are two activities in the same region. Therefore, total beneficiaries exclude energy beneficiaries in Tanga, Morogoro and Mbeya to avoid possible double-counting with the Transport and Water projects in these areas.

TABLE4: TOTAL BENEFICIARIES

Activity	Estimated number of Beneficiaries by 2027
Tanga-Horohoro	397,946
Tunduma-Sumbawanga	587,360
Mtwara Corridor	456,007
Pemba Rural Roads	109,421
Mafia Island Airport	73,819
Tanga T&D	194,087
Dodoma T&D	127,356
Morogoro T&D	191,585
Iringa T&D	115,453
Mwanza T&D	274,959
Mbeya T&D	180,222
Zanzibar Interconnector	400,313
Kigoma Solar	N/A
Dar Lower Ruvu	2,585,898
Morogoro Water	215,961
Total	**5,910,387**

2.6 Economic Rate of Return Analysis

As discussed above, specific sub-projects were selected for MCC funding based on an ERR of greater than or equal to double the average of the economic growth rates in Tanzania over the three years prior to the Compact (12.8%)[10]. Further, the monitoring indicators for the three Projects are tied closely to the assumptions used in the economic analysis of the Projects. Tanzania Compact ERR calculations can be found at http://www.mcc.gov/pages/countries/err/tanzania-compact.

The original sector-level ERR for the Mainland Projects are: (1) transport sector 16.0%, (2) energy sector 26.7%, (3) water sector 20.3%, and the original overall ERR for the Zanzibar projects is 17.8%.

TABLE 5: SUMMARY OF ECONOMIC RATES OF RETURNS

Project	2007 Base Case ERR (Hurdle = 12.8%)	2007 Estimated Range of ERR
Tanga – Horohoro	15%	12-17%
Tunduma – Sumbawanga	20%	17-23%
Mtwara Corridor	14%	12-16%
Pemba Roads	12%	8-15%
Mafia Island Airport	17%	15-20%
Tanga T&D	42%	15-58%
Dodoma T&D	16%	¯10-32%
Morogoro T&D	24%	¯5-41%
Iringa T&D	52%	25-69%
Mwanza T&D	31%	4-45%
Mbeya T&D	53%	10-80%
Zanzibar Interconnector	21%	10-31%
Kigoma Solar	N/A	N/A
Dar Lower Ruvu	27%	23-31%
Morogoro Water	5%	0-8%

[10] This hurdle rate corresponds to MCC Guidelines for Economic Analysis as of November 2005. In 2010, the hurdle rate was increased to 14.2%.

3 MONITORING

Monitoring is defined by MCC as "a continuous function that uses the systematic collection of data on specified indicators to gauge progress toward final program objectives and achievement of intermediate results along the way". Effective project monitoring is considered to be essential for tracking process indicators (financial and in-kind inputs) and the generated outputs and outcomes of those investments.

A comprehensive system of monitoring and evaluation requires (a) defining the expected processes, outputs, outcomes and objectives, (b) identifying monitoring indicators for each, (c) ensuring that baseline data are available and d) targets are set to assess progress, and (e) making sure a system is in place to frequently collect, analyze and report the data to monitor progress. It should also include M&E a detailed program logic that documents assumptions & risks in addition to indicators.

The Compact Activities will be monitored through specified indicators which are consistent with the Project Logics (Figures 1-6) and Annex I and II of this document. Five types of indicators will be measured including goal, objective, outcome, output and process level indicators. The M&E plan also specifies data sources, frequency of data reporting, and baseline and target values.

3.1 Indicators

Indicators are used to measure progress toward the expected results throughout the design and implementation period and beyond. Different types of indicators are needed at different points in time to trace each point along the Program Logic. All indicators in the M&E plan should have a specified unit of measurement, which must align with MCC's approved list of units of measurement. Units may be added to this list at the request of an MCA if necessary, but they will be subject to MCC approval.

The M&E plan tracks key process, output, outcome, objective and goal level indicators. MCC defines these indicators as:

- **Process Indicator**: An indicator that measures progress toward the completion of a Project Activity, a step toward achievement of Project Outputs and a way to ensure the work plan is proceeding on time.
- **Output Indicator**: Indicators that directly measure Project Activities. They describe and quantify the goods and services produced directly by the implementation of an Activity.
- **Outcome Indicator**: Indicators that measure the intermediate effects of an Activity or set of Activities and are directly related to the Output Indicators.

- **Objective Indicator**[11]: Indicators that measure the high-level impacts of the Activity and are directly linked to the Outcomes Indicators.
- **Goal Indicator**: Indicators that measure the economic growth and poverty reduction changes that occur during or after implementation of the program.

The monitoring and evaluation indicators are summarized in Annex I, including the definition, unit, and data source (citing the material evidence when possible). Modification memos which summarize any revisions during the March 2010, April 2012, and May 2013 M&E plan revisions are in Annex III.

3.2 Data Sources

Data is derived from several sources:

- **Economic Rate of Return**. When possible, the ERR captured baseline and target values for indicators assumed to be impacted by the Compact Activities. The ERR mostly focuses on objective and goal level indicators.
- **Evaluation Surveys**. MCC and MCA-T have financed impact evaluation baseline surveys in the Transport (Mainland/Pemba Roads projects only - 2009), Energy (Mainland T&D only - 2011), andWater (2013) Sectors. In addition, performance evaluation baseline surveys have been financed for Zanzibar Cable (2010), Mafia Island Airport Upgrade (2012). Kigoma Solar (2013), and the Gender Integration Program described below (2013). Finally, a Traffic Count Survey has been commissioned for June 2013 for the Mainland Roads. When evaluation surveys are financed, MCA-T will ensure data collection efforts respond to the data requirements of the M&E plan, including both monitoring data, as well as data for any applicable impact or performance evaluations. This data is typically on key output, outcome, and goal level indicators.
- **Secondary Data Sources**. When possible, MCA-T and MCC reference secondary data sources that represent the beneficiary population for Activity areas either when data is not available from primary sources or to triangulate and verify existing data. Secondary data sources include the Demographic and Health Survey (DHS), Tanzania Household Budget Survey (HBS), and Tanzania National Panel Survey (NPS). This data typically informs output, outcome, and goal level indicators.
- **Implementing Entities**. MCA-T M&E and Sector Leads need to have a strong link with the Implementing Entities (IE) in order to report on and monitor data on key indicators for which data is available. While the IEs are the only reliable source for most output indicators, the M&E team will triangulate data regarding outcome level indicators with Secondary Data and Evaluation Surveys when possible.

[11] As of April 2012, the MCC M&E Policy no longer includes the category of Objective level indicators, however it remains in the Tanzania M&E Plan since the indicator framework was developed prior to the policy change.

TABLE 6: SUMMARY OF MAIN DATA SOURCES, FREQUENCIES AND INDICATOR TYPES

Source	Frequency	Indicators
Economic Rate of Return	Baseline and Target for select indicators only	Goal,Objective, and Outcome level
Evaluation Surveys	Baseline and Follow-up	Goal, Objective, and Outcome level
Secondary Data Sources	As available	Goal, Objective and Outcome level
Implementing Entities	Quarterly	Outcome, Output level
MCA-T	Quarterly	Process level

The list of indicators, unit of measure, definitions, disaggregation levels, data source, responsible party or parties and frequency of reporting are summarized in Annex I, with baseline and target values in Annex II. Data on these indicators will be reported to MCA-T Management and to MCC on a quarterly basis through the ITT unless otherwise noted in the frequency of reporting column.

3.3 Setting Baseline and Target Values

Every indicator selected must have a baseline value. For the Tanzania Compact, the baseline values are mostly set at the pre-Compact period July-August 2008, but in some cases later data from years prior to the start of the project intervention had to be used due to data constraints. The MCA-T M&E unit is responsible for documenting the actual start date of each sub-project in order to distinguish between pre-intervention trends and post-intervention trends. Any evaluation analysis will consider the actual start date of the sub-activity.

Indicators in the M&E plan also include annual and compact targets whenever possible and appropriate. Some indicators will not have a target set and will maintain Not Applicable (N/A) for the targets. The majority of these indicators were added during Compact implementation as they fit within the project logic, but targets were never set. Otherwise, these indicators were for objective tracking purposes and no target needed to be set.

For indicators derived from the economic analysis, targets are based on the ERR model.

MCC does not require quarterly targets; however, the MCA may choose to set quarterly targets for internal management purposes. Quarterly reporting of progress against annual targets is required by MCC.

3.4 Gender Analysis

Gender inequality can be a constraint to economic growth and poverty reduction, and gender issues can be a determining factor for the effectiveness of an intervention. In light of this, MCA-T developed a Gender Integration Policy which emphasizes the recognition of gender inequality as a major constraint to the growth of the economy, including efforts to reduce poverty. The policy further identifies the priority areas and directions in gender integration within the Transport, Energy, and Water sector projects.

The MCA-T Gender Policy is directly linked with Tanzania's national policy frameworks which emphasize empowerment of men and women of all ages to fully participate in the development process and remove gender bias in access to resources, participation in decision making, ownership of property. These frameworks and MCA-T's policy also focus on increasing opportunities for the formation of women's groups to promote formal education, training, skills development and equal rights for employment; providing women with legal rights to own property, credit; and adopting effective technologies for relieving women from domestic and agricultural chores. Details of Gender issues for the Compact are described in the Gender Integration Program (GIP) document.

Under the GIP, Gender Focal Points (GFPs) are located atatthe district level, and are responsible for reporting quarterly data on GIP progress and results on gender and women's enterprise activity. In addition to the GIP, under the Compact the M&E Directorate is responsible for collecting and analyzing differential trends in results for men and women for key indicators. Annex I specifies which indicators will be disaggregated by gender. Whenever possible, analysis of trends and impacts will be disaggregated by gender. To achieve this, all evaluation analysis and all evaluations will collect relevant data on men and women in order to examine the differential impacts of the Activities by gender., MCA-T will disaggregate data by gender where possible in quarterly reporting with the ITT and the quarterly ITT narrative will include a brief description of GIP activities and data, complementing the broader M&E data.

In the Tanzania Compact, targets in the M&E plan are not required for the number of women or men being served by an Activity, as the project designs are not directly linked to performance to gender-specific outcomes.

3.5 Data Quality Assurance

M&E data is the key source of information on progress towards the achievement of Compact results and supports decision making by program managers. Ensuring that the underlying data are of good quality is essential to maintain a high level of confidence in the decisions that are made using the data.

The Data Quality Review (DQR) is a mechanism to review and analyze the utility, objectivity, and integrity of performance data.It is a key process in promoting evidence-based decision making in development projects and program management. It is critical to establishing whether data producers and users can confidently engage in performance measurement through using the monitoring data that is reported.DQRs consists of the scientific and statistical evaluation of data along the chain from the original source to final report. They cover: a) quality of data, b) data collection instruments, c) survey sampling methodology, d) data collection procedures, e) data entry, storage and retrieval processes, f) data manipulation and analyses, and g) data dissemination.

DQRs are part of periodic performance audits of the MCA-T M&E unit. MCA-T contracts the data quality reviewers competitively in compliance with MCC's *Program Procurement Guidelines*. The Terms of Reference for the DQR must be approved by MCC.

The first DQR, led by IDEA International, was initiated in October 2011, with the final report released in September 2012. Lessons learned and some of the recommendations made were adopted by the MCA-T Directorate. MCA-T will commission the last DQR for MCA-T (I) in May 2013. The objective of the second DQR is to examine to what extent the DQR I recommendations were implemented and validate the final data sets reported by MCA-T. DQR II will also provide lessons and recommendations for the MCA-T (II) M&E team.

The M&E Directorate in collaboration with other directorates will also conduct regular internal data quality reviews through visits to implementing entities and project sites.

3.6 Management Information System (MIS)

In August 2011, MCA-T established a Management Information System (MIS) which should serve as the primary source of information for the overall M&E of the program, projects and activities. The MIS was to be used as a management tool to track MCA-T processes, outputs and outcomes and to monitor whether these are being delivered in line with the expectations of MCA-T and MCC. It would provide information to MCA-T's stakeholders[12]about the progress and performance of activities, and permit MCA-T staff to track the movement of resources as projects are implemented. MCA-T's MIS will enable generation of the monthly, quarterly, annual, as well as ad-hoc, reports on program activities.

In 2011, the consultant contracted to develop the application (Synergy International Systems) declared it had been completed and went ahead to commission it. In 2012, it was, however established that the system lacked some necessary modules notably the off-line module and the executive dashboard. The consultant was, therefore called upon to design the two modules and

[12] Information available to the public will be in accordance with MCC M&E Guidance.

retrain the users. Even after the two processes were completed, the MIS did not function as well. Rather than spend more money on it and given the time limitations, the MCA-T decided not to use the system.

3.7 Reporting

There are two levels of reporting, namely within program (MCA-T) and MCC level.

3.7.1 Program Level[13]

Implementing Entities are mandated to report data on selected indicators which are in the ITT on a monthly basis (refer to Annex I). In addition, Supervising Engineers submit monthly reports to the sectors detailing the progress, successes, challenges and lessons learned in quarterly basis. The Sector Directorates send copies of these reports to M&E Directorates for further analysis and consolidation. The consolidated reports including the ITT and its narrative are submitted to MCA-T Management for review.

3.7.2 MCC Level

MCA-T is mandated to report to MCC when submitting disbursement requests on a quarterly basis. The reporting package will include the (1) completed ITT, which displays performance targets (projections) and tracks progress against them (actual); (2) corresponding narrative report which explains progress made and performance and any reasons for deviations from the targets when applicable; and (3) the overall Detailed Financial Plan (DFP) Narrative Report. The overall DFP narrative report is the responsibility of all MCA-T directorates and provides a brief description of the previous quarter's performance and explains how requested funds will be used in the coming quarter. The narrative report, which is not a public document and is limited to five pages, includes the following:

- Status of implementation of activities planned during the previous quarter for each component of the program and provide explanations in case there are deviations from the plans,
- Challenges that might affect implementation and propose measures to address the challenges,
- Significant M&E activities that took place during the quarter such as data collection, M&E Procurements and results of any M&E studies.

The ITT narrative Reports will be prepared by the MCA-T M&E Directorate and submitted to management and are to be consolidated into the DFP report for submission to MCC management

[13] MCA-T M&E Directorate may develop a detailed M&E Reporting Framework to be presented to the Management for approval.

for review and approval. Additional guidance on reporting is contained in MCC's *Guidance on Quarterly MCA Disbursement Request and Reporting Package*.

3.8 Feedback Loop

The MCA-T M&E Directorate encourages critical reflections upon compact results at all levels. For example, when sector Directorates get monthly reports from supervising engineers they discuss, provide feedback and recommendations for improvements. Feedbacks from MCC will also be relayed by MCA-T to Implementing Entities. M&E Directorate will also work hand in hand with Public Outreach Unit to publish compact success stories. There will also be other forums for sharing and using compact information, including but not limited to Annual Stakeholders' review Workshops. To - date the MCA-T has conducted one stakeholder's workshop in February 2013.

3.8.1 Annual Performance Review

MCA-T may choose to conduct Annual Performance Reviews and submit an Annual Supplemental Report to regular quarterly reporting. The Annual Supplemental Report may provide information on accomplishments and developments of Compact implementation related to progress on Activities, the consultative process, donor coordination and lessons learned and best practices. Though not an MCC requirement, the Annual Supplemental Report may be submitted to MCC one month after the end of each US fiscal year (October 30).

These annual performance reviews may include workshops. A workshop would be moderated by competent facilitator(s). Participants of the workshop would include representatives from a wide range of stakeholders. The workshops would provide opportunities for:

- Reviewing the overall implementation progress of MCA - T;
- Analyzing problems encountered in the course of implementation and discuss possible actions;
- Reviewing the projects and proposing modifications as necessary; and
- Using the findings for planning activities for the subsequent year.

If the MCA-T M&E unit would like to propose an Annual Performance Review, the M&E unit must first have a final Concept Note detailing the objectives of the workshop, participants, expected deliverables and estimated budget approved by MCA-T management.

4 PERFORMANCE AND IMPACT EVALUATIONS

In order to determine the extent to which the Tanzania Compact has contributed to economic growth and poverty reduction, performance and impact evaluations of sub-activities will be carried out by independent evaluators.

A **Performance Evaluation** is a study that starts with descriptive questions, such as: what were the objectives of a particular project or program, what was achieved; how was it implemented; how was it perceived and valued; whether expected results are occurring and are sustainable; and other questions that are pertinent to program design, management and operational decision making. MCC's performance evaluations also address questions of program impact and cost-effectiveness. However, a performance evaluation typically lacks the ability to estimate the causal impacts on outcomes that are attributable to the sub-project.

An **Impact Evaluation** is a study that measures the changes in income and/or other aspects of well-being that are *attributable* to a defined intervention. Impact evaluations require a credible and rigorously defined counterfactual, which estimates what would have happened to the beneficiaries absent the project. Estimated impacts, when weighed with total related costs, provide an assessment of the intervention's cost-effectiveness.

MCA-T balances the expected accountability and learning benefits with the evaluation costs to determine what type of evaluation approach is appropriate. Impact evaluations are performed when their costs are warranted by the expected accountability and learning. MCA-T will follow any MCC specific guidelines and standards for the selection, preparation, review and dissemination of performance and impact evaluations.

Each of the three Compact Projects, as well as the Gender Integration Program training, is being evaluated. Figure 7 provides a summary of all the MCA-T performance and impact evaluations planned as of May 2013.

Details regarding the specific program evaluations are provided in the Annex IV.

Figure 7: Summary of Tanzania Compact Evaluation Activities

Evaluations by Sector	EVALUATOR	METHODOLOGY					BASELINE			FOLLOW-UP	IMPACT
		Classification	Design	Method(s)	Population	Sample Size	Survey Firm	Data Collection Dates	Report	Data collection Dates	Report
Transport											
(i) Mainland Trunk Roads	EDI (baseline); NORC (since 2012)	Previously Impact, currently being re-designed	Previously PSM-DID	Quantitative; Qualitative	Baseline: Community	200 sub-villages	EDI	Mar-May 2009	Nov-09	TBD	2016
(ii) Pemba Roads		Previously Impact, currently being re-designed	Previously PSM-DID	Quantitative; Qualitative	Baseline: Community; Household	80 villages		Jun-Aug 2009		TBD	2016
(iii) Mafia Island	Individual Consultant	Performance	Before/after	Quantitative; Qualitative	Hotel Managers; Hotel Guests; Arriving Passengers; Village Leaders; FGDs; Individuals	16; 473; 770; 21; 3 male, 3 female; 60	Individual Consultant	Feb-Jun 2012	Dec-12	2015	2015
Energy											
(i) Zanzibar Cable and T&D	MPR	Performance	Before/after	Quantitative; Qualitative	Hotels	30 hotels	MPR	Jun-Aug 2010	Mar-11	2014	2015
(ii) Mainland T&D		Impact	PSM-DID	Quantitative; Qualitative	Tanga enterprise; Household	356 sub-villages	NRECA	August-November 2011	Dec-12	2014	2015
(iii) Mainland Customer Connection Financing Scheme (CCFS)		Impact (part of Mainland T&D Evaluation)	RCT	Quantitative; Qualitative	Household	29 Communities (from T&D Baseline sample)	NRECA	August-November 2011	Dec-12	2014	2015
(iv) Kigoma Solar	Individual Consultant	Performance	Before/after	Qualitative	Fishing industry; village markets; schools; health facilities; households	TBD	Individual Consultant	May - August 2013	Sep-13	2014	2015
Water											
(i) Lower Ruvu and Morogoro	Social Impact	Impact	PSM-DID	Quantitative; Qualitative	Community; Househols	628	EDI	April - October 2013	Dec-13	2015	2016
Cross-Cutting											
Skill Based Groups and Gender Focal Point (SBG-GIP) Study	Individual Consultant	Performance	Before/after	Quantitative; Qualitative	GFPs; SBGs; SBG Members	230; 37; 585	Individual Consultant	April - June 2013	Aug-13	N/A	N/A

5 CAPACITY BUILDING

The MCA-T M&E Directorate will continuously familiarize stakeholders, including MCA-T and Implementing Entities staff, on how to effectively implement the M&E Plan. M&E advocacy will continue at all levels within MCA-T and Implementing Entities. Specific training on M&E as well as exchange visits to other MCAs may be required for implementers to comply with the M&E plan.

6 COMPACT CLOSE-OUT

The MCA-T will draft the Compact Completion Report (CCR) by July 2013 following MCC guidelines. The report will highlight operational performance and how the intermediate objectives have been met. MCA-T M&E will contribute to the report with analysis of ITT, performance and impact evaluation data to determine: (1) if resources were availed and committed as planned; (2) activities were completed; (3) stakeholders met their obligations and covenants; (4) implementation was cost effective; (5) objectives were met, and if not why?; (6) intended beneficiaries accessed the services and benefited from compact activities, and if so, to what extent?; (7) there are unintended results, and who were affected; (8) there are challenges encountered and how they were mitigated; and (9); there are adequate sustainability arrangements.

The CCR will also outline lessons learned and best practices, as well as actionable recommendations.

The draft report will be submitted to the MCA-T Governing Board for review and further to MCC for review and approval. MCC will then draft the Post-Completion Assessment Report (PCAR) within 6 months after the compact ends (April 2014) to evaluate these same fundamental questions and other aspects of Compact program performance.

7 ASSUMPTIONS AND RISKS

The program logic, expected outcomes and impact are based on assumptions about the linkages between individual project activities and the long-term goal of poverty reduction through economic growth. Assumptions inform the initial economic return analysis while risks are likely to affect program success.

The assumptions and risks for each of the three Projects are presented in Table 8 below:

TABLE 8: COMPACT'S ASSUMPTIONS AND RISKS

Hypothesis	Risks	Mitigation
Investment in transport, energy and water will steer economic growth and therefore reduce poverty in Tanzania	Slow responsiveness of beneficiaries.	GIP training to Skill-Based Groups Raise awareness through public outreach.
Transport Sector Project		
Reduce transport costs and travel times, facilitating access to markets and thereby increasing economic activity	Poor disorganized, markets could lead to slow responsiveness in underutilization of opportunities created by the Compact	Work closely with partners intervening in marketing programs.
Easier, more efficient, and safer access to Mafia Island resulting in increase in visitors and visitor spending	Lack of marketing information about Mafia Island as a tourist destination will lead to few tourists coming; Undeveloped aviation industry might lead to few flights to Mafia Island	The tourist industry to aggressively market Mafia as a tourist destination Aviation industry to encourage more private flights to Mafia Island.
Energy Sector Project		
Access to electricity leads to investments in productive assets and human capital.	Unfavorable weather condition might lead to low generation of hydropower resulting into power overloads and prolonged load-shading. Low cost recovery as a result of high operational costs High connection costs (estimated at $110 - $200) compared to annual per capita income of $1,400 (year 2010 estimate) may slow down connections.	More investment in power sources to cope with increased demand Phasing out of postpaid meters will increase collections, and thus increase cost recovery ratio. MCA-T/TANESCO Financing Scheme 5,800 offering subsidized connection rates as a pilot
Water Sector Project		
Access to water leads to better health outcomes, more time spent on productive activities and increased value-added for businesses.	Failure for the Project to remain sustainable due to tariff reforms falling short of recovery costs or implementing agencies not realizing expected efficiencies in operations Existence of many confounding factors exist such as water quality at point of use and storage, sanitation facilities, hand washing behavior and other water-related factors which are correlated with health outcomes might jeopardize beneficiaries' health	MCA-T building the capacity of water utilities in improving efficiency in operations It is assumed that sustained supply of chemicals to treat the water. Water utilities will monitor water quality at the source and at the point of consumption. It is assumed that Public Health Department will continue to implement sanitation awareness campaigns.

8 INSTITUTIONAL FRAMEWORK

Implementation of MCA–T M&E activities will be done by all MCA–T Directorates and will be coordinated by the M&E Directorate. Specific responsibilities and implementation arrangements are outlined below as follows:

8.1 M&E Directorate Responsibilities

The MCA-T M&E Directorate is responsible for the overall coordination of Tanzania Compact M&E strategy and implementation, including related activities within the Program and through its implementing entities, while providing timely and relevant information to Program stakeholders in the GoT, civil society and the private sector. This entails close communication with all involved in M&E implementation.

Duties and responsibilities of the directorate include:-

- Develop, manage, and ensure adherence to the M&E Plan
- Develop, manage, and implement the M&E Directorate Work Plan; includes roles and responsibilities, budget and timeline
    - Includes identifying capacity gaps and M&E staff performance
    - Includes hiring new consultants/staff as appropriate to address capacity gaps
- Manage monthly and quarterly data collection and analysis for the Quarterly Progress Report
    - Includes development and management of worksheets for Implementing Entities to submit disaggregate, quarterly data by project. The M&E Directorate will assess the capacity constraints of Implementing Entities and collaborate with Sector Directorates to address any capacity gaps for reliable data reporting.
    - Includes aggregating Implementing Entity data into the Indicator Tracking Table (ITT)
    - Includes written narrative and analysis of progress and performance of Compact Activities
    - Review data with decision makers to ensure that the Compact Activities are accomplishing objectives and corrective actions are taken if changes are warranted;
- Participate in the monitoring of the Program components through site visits, review of Program reports and review of secondary data to inform Quarterly Progress Report
- Develop and submit Quarterly Disbursement Requests
- Ensure M&E Plan and Economic Rates of Return (ERR) analysis are modified and updated as improved information becomes available (updating indicators, baselines, and

targets upon the receipt of information from technical studies or better statistical information on income and/or poverty);

- Collaborate with MCC to develop and implement Performance and Impact Evaluations of Compact Activities, including quantitative and qualitative evaluations,
    - Ensure evaluations disaggregate impacts by gender, age and income, as applicable;
- Collaborate with the Procurement Director to prepare and conduct procurement of various M&E contracts (Monitoring System, Data Quality Review, Data Collection, etc)
    - Includes development of Terms of Reference, leading evaluation, interview and selection of candidates
- Initiate and manage timely data quality reviews;
- Manage technical implementation of contracts with local and/or international consultants for M&E services and verify the quality and quantity of all deliverables
    - Includes effective management, documentation and storage of all deliverables
- Coordinate and execute special studies and ad hoc evaluations, as needed, to assess activity impacts;
- Draw lessons to improve information sharing systems within MCA-Tanzania, Tanzanian public and the donor community and enhance advocacy for policies and Program;
- Facilitate the execution of the Program annual reviews;
- Coordinate the installation of hardware and software for the Management Information System (MIS);
    - Lead efforts to utilize the MIS for monitoring purposes
- Perform any other M&E-related responsibilities that may be requested from time-to-time by the CEO

The MCA-T M&E Directorate is comprised of the following:

1. Director
2. M&E Officer
3. M&E Management Consultant
4. Results Monitoring and Reporting Consultant

It is possible that other M&E human resources may be sourced after considering the reviewed detailed work plan.

8.2 Implementing Entities

MCA-T M&E will be working closely with the following Implementing Entities in Transport, Energy and Water Sectors:

- Transport
    - TANROADS

    - MoIC (Zanzibar)
    - TAA
- Energy
    - TANESCO
    - ZECO
- Water
    - DAWASA/DAWASCO
    - MORUWASA

The working arrangement is based on a partnership model as documented in their respective Implementing Entities' Agreements.

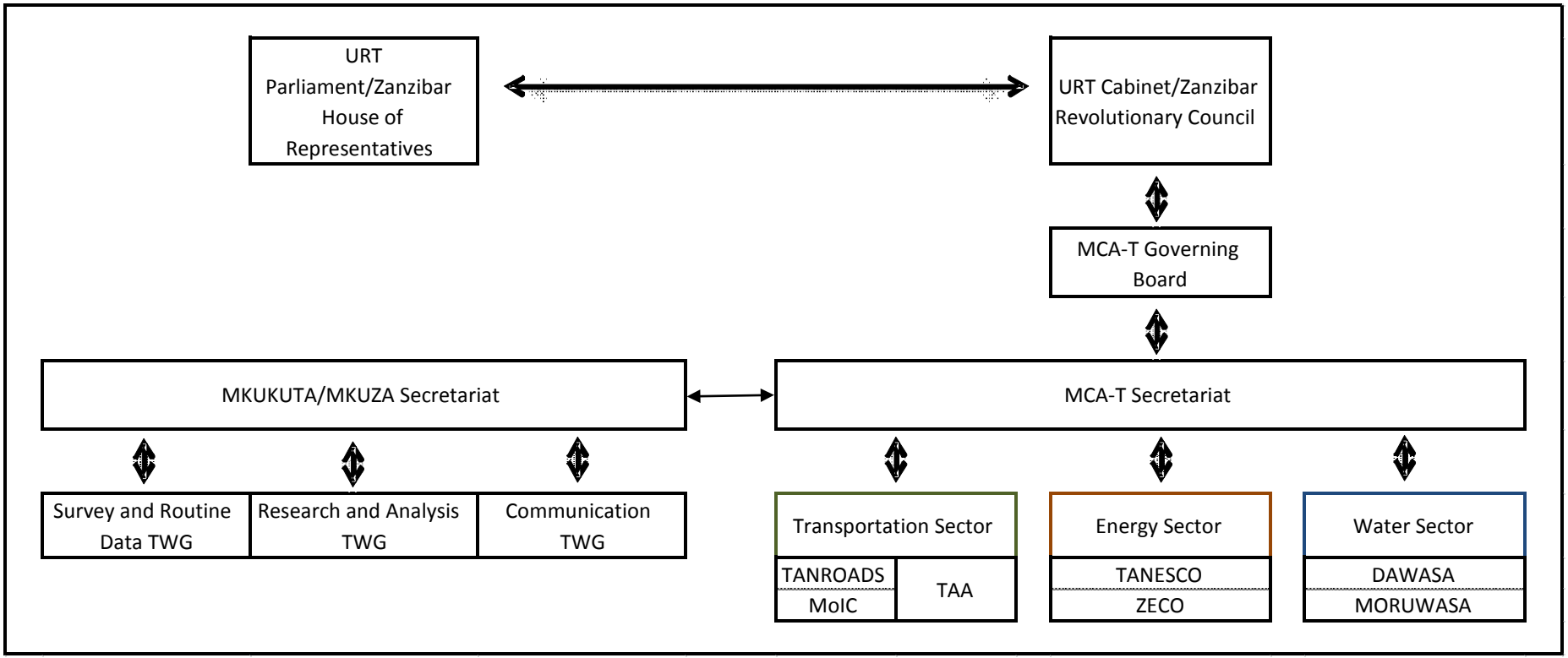
Additional partners include IE contractors/supervising engineers as well as environment and social stakeholders, namely NEMC (Mainland) and ZDoE (Zanzibar) who monitor the environment and social issues. This is a means of enhancing commitment to a broad stakeholder engagement in monitoring processes.

The institutional arrangement for monitoring of MCA-T activities is therefore based on the proposed synergy between the MCA-T secretariat and the existing national poverty monitoring system (MKUKUTA/MKUZA). Efforts will be done to synchronize MCA-T data collection with these national monitoring systems. The MCA-T secretariat will provide and receive information from MKUKUTA/MKUZA secretariat and report to the MCA–T management and other stakeholders.

Since the existing system tracks changes in GDP growth on an annual basis, and on periodic basis through the routine data system and multi-year survey plan, the MCA-T will focus on input and output monitoring at one level, and link with MKUKUTA/MKUZA poverty monitoring system (PMS) on measuring the outcomes. Input-Output reporting will be undertaken on a quarterly basis while outcome reporting will be done on medium term.

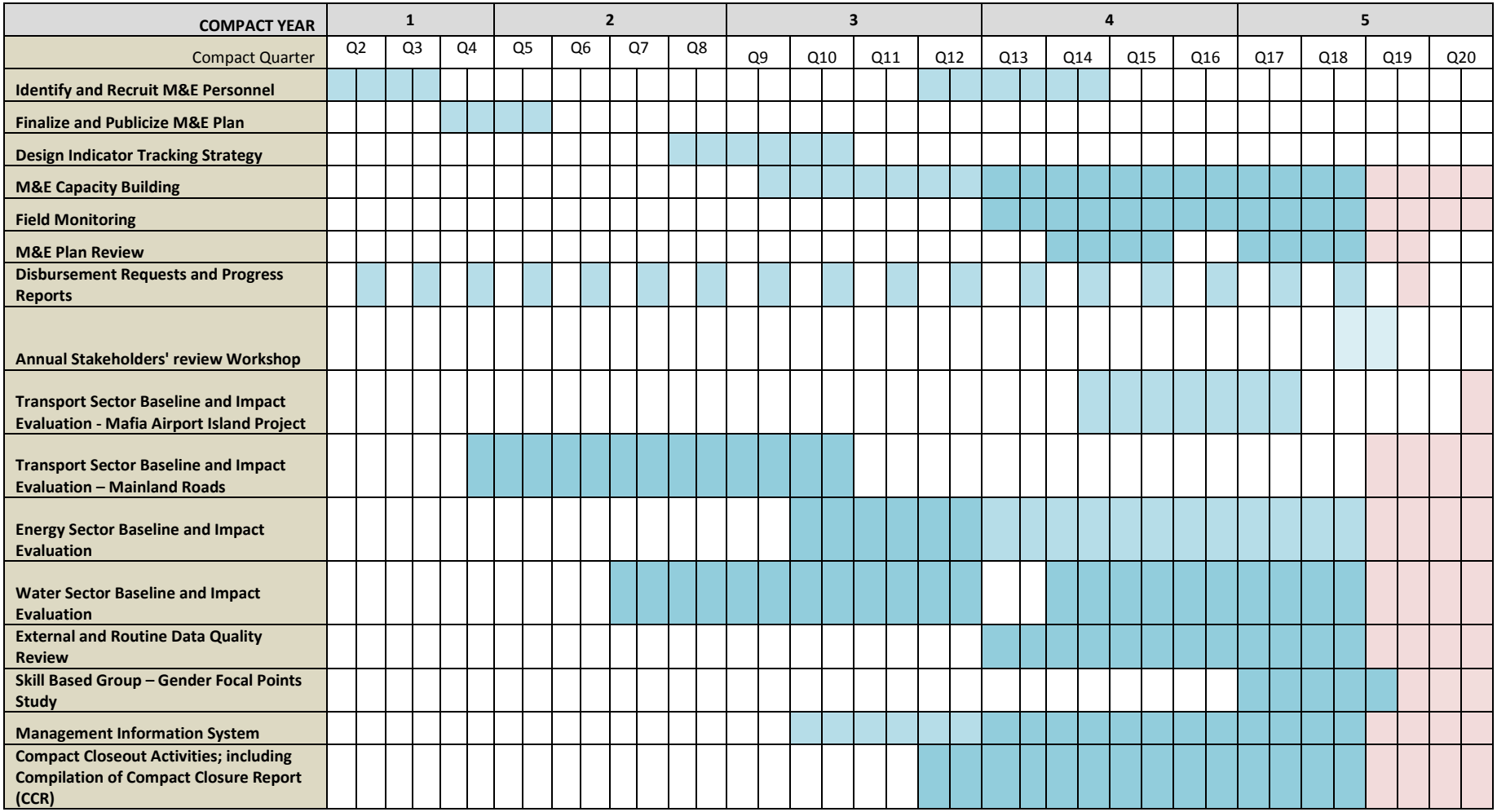
Figure 8 below indicates institutional arrangement for monitoring:

FIGURE 8: MCA-T FRAMEWORK FOR MONITORING AND EVALUATION



9 WORK PLAN

Figure 9: MCA-T M&E Work Plan



10 BUDGET

The tentative budget for M&E is based on the activities outlined in the work plan. Resources will be required to facilitate routine monitoring, data collection, data quality review, beneficiary assessment, evaluation, communication, and building the capacity of stakeholders.

In addition, it should be noted that $1,778,979 from the M&E budget was reallocated to the Energy Sector in order to contract and manage the Energy Subsidy Pilot.

Specific resource requirements are as follows:

TABLE 10: MCA-T M&E Budget Commitments as of Mar 31, 2013 (US$)

	Q1-Q18	Q19-Nov 2013	Post-Compact	TOTAL
Technical Assistance				
MIS	$ 231,982	$ -	$ -	$ 231,982
Capacity Building Workshop(s)	$ -	$ 30,000	$ -	$ 30,000
Management Consultant	$ 475,319	$ -	$ -	$ 475,319
ITT Consultant	$ 94,152	$ -	$ -	$ 94,152
NBS (in-kind)	$ 41,986	$ -	$ -	$ 41,986
NBS (data collection)	$ 124,364	$ -	$ -	$ 124,364
Sub-total	*$ 967,803*	*$ 30,000*	*$ -*	*$ 997,803*
M&E Studies				
Roads Data Collection	$ -	$ 300,000	$ 1,150,050	$ 1,450,050
Mafia Island Data Collection	$ 98,954	$ -	$ 150,000	$ 248,954
T&D Data Collection	$ 1,404,900	$ -	$ 1,600,000	$ 3,004,900
Zanzibar Data Collection	$ -	$ -	$ 100,000	$ 100,000
Kigoma Solar Evaluation	$ 97,250	$ -	$ 102,750	$ 200,000
Water Data Collection	$ 897,682	$ 99,662	$ 219,497	$ 1,216,850
Skill-based Group Data Collection	$ 146,786	$ -	$ 150,000	$ 296,786
Data Quality Review	$ 278,657	$ 200,000	$ -	$ 478,657
M&E Manual	$ 35,500	$ -	$ -	$ 35,500
Compact Completion Report	$ 145,664	$ -	$ -	$ 145,664
Stakeholders Workshop	$ 45,858	$ -	$ -	$ 45,858
Sub-total	*$ 3,151,251*	*$ 599,662*	*$ 3,469,598*	$ 7,220,511
TOTAL	$ 4,119,054	$ 629,662	$ 3,469,598	$ 8,221,022

11 REFERENCES

Tanguy, B., and Torero, M. “Welfare Impact of Rural Electrification: “Short Term” Evidence from Ethiopia” A Report for the Ethiopian Electric Power Corporation and the World Bank”. Washington, D.C.: International Food Policy Research Institute, December 2009.

Bernard, Tanguy. “Impact Analysis of Rural Electrification Projects in Sub-Saharan Africa.” *World Bank Research Observer*, September, 2010.

Calderon, C. and Serven, L. (2005) “The Effects of Infrastructure Development on Growth and Income Distribution,” World Bank Working Paper, WPS 3400

Dinkelman, Taryn. “The Effects of Rural Electrification on Employment: New Evidence from South Africa.” *American Economic Review*, Vol. 101, Issue 7, December 2011.

Eberhard, Anton, OrvikaRosnes, Maria Shkaratan, Haakon Vennemo. “Africa’s Power Infrastructure: Investment, Integration, Efficiency.” Washington, D.C.: World Bank, 2011.

ESMAP (Energy Sector Management Assistance Program). “Maximisation des Retombées de l’Electricité en Zones Rurales, Application au Cas du Sénégal.” ESMAP Technical Paper 109/07 FR, World Bank, Washington, D.C., 2007.

Hatch Mott MacDonald. “Tanzania Energy Due Diligence: Upgrade and Rehabilitation of Power Transmission and Distribution Systems, Final Report.” Millburn, NJ: Hatch Mott MacDonald, September 2007.

Heltberg, Rasmus. “Household Fuel and Energy Use in Developing Countries: A Multicountry Study.” Oil and Gas Policy Division, World Bank. Washington D.C: World Bank, 2003.

IEG (Independent Evaluation Group). “The Welfare Impact of Rural Electrification: A Reassessment of the Costs and Benefits, An IEG Impact Evaluation.” IEG, World Bank. Washington, D.C.: World Bank, 2008.

Jacobson, Arne. “Connective Power: Solar Electrification and Social Change in Kenya.” *World Development*, 35(1), 2007, pp. 144-162.

Ketlogetswe, C, T.H. Mothudi, and J. Mothibi.“Effectiveness of Botswana's Policy on Rural Electrification.”*Energy Policy*, 35(2), 2007.

Khandker, Shahidur, Douglas Barnes, Hussain Samad, Nguyen Huu Minh. “Welfare Impacts of Rural Electrification: Evidence from Vietnam.” Policy Research Working Paper # 5057. Washington, D.C.: World Bank, September 2009.

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2013 Annex I: Transport Indicator Documentation Table

Common Indicator	Indicator Level	Indicator Name	Unit of Measure	Definition	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
Transport Project									
Activity 1&2: Mainland and Pemba Roads									
	Goal	Average annual household income per capita	US Dollars	Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample	By region	Household survey	Evaluator	Baseline, Endline	The endline will most likely be 2015
	Objective	Average time to market from home	Minutes	Average time that it takes to travel to the market one way (on foot and most common mode of transport) from home	By Mainland/Pemba	Household survey	Evaluator	Baseline, Endline	
	Objective	Average time to medical facilities	Minutes	Average time that it takes to travel to the medical facilities one way (on foot and most common mode of transport)	By Mainland/Pemba	Household survey	Evaluator	Baseline, Endline	
	Objective	Average annual household cash crop revenue	US Dollars	Average total value of cash crops sold in last year per household for all households	By Mainland/Pemba	Household survey	Evaluator	Baseline, Endline	
	Objective	Percentage of households with income generating activities (IGA)	Percentage	Percentage of households which report they have operated an income generating activity out of their household in the last 12 months	By Mainland/Pemba; By gender	Household survey	Evaluator	Baseline, Endline	
	Objective	Number of stand alone businesses	Number	Total number of enterprises (3 or more employees) located in community	By Mainland/Pemba; By gender	Household survey	Evaluator	Baseline, Endline	
	Objective	Average hours worked in the last week	Hours	Hours worked in the last week in an enterprise for individuals 15-60 years old	By Mainland/Pemba; By gender	LSMS 2010; Household survey	Evaluator	Baseline, Endline	
	Objective	Percentage of children who missed any school in the last 4 weeks	%	Percentage of surveyed school children (Primary/Secondary) who missed any school in the last 4 weeks due to illness or injury	By Mainland/Pemba	Household survey	Evaluator	Baseline, Endline	
	Objective	Average days of school missed for school age children in the last 4 weeks	Days	Average days of school missed for school age children in the last 4 weeks	By Mainland/Pemba; By gender	Household survey	Evaluator	Baseline, Endline	
R-9	Outcome	International Roughness Index (IRI)	m/km	Weighted Index to measure road roughness (correlated with transport costs) disaggregated by road segment. The measure of the roughness of the road surface, in meters of height per kilometer of distance traveled.	By road project	TANROADS reporting	TANROADS; MCA-T	Once	

R-10	Outcome	Average Annual Daily Traffic	Number	Average number of vehicles per day on upgraded roads. This indicator is based on traffic count data collected over at least a 7-day period (day and night) once per year, and relies on modeling to account for seasonal variation in traffic patterns. Overall, the indicator estimates an annual daily average.	By road project	MCA-T Traffic Count Survey (2013)	MCA-T	Once	MCA-T Traffic Count survey will take place in June 2013
R-11	Outcome	Annual road traffic fatalities	Number	Number of road traffic fatalities per year on MCC roads. The number of road traffic fatalities per year on roads constructed, rehabilitated or improved with MCC funding.		Ministry of Home Affairs - Traffic Division, Police Head	MCA-T	Quarterly	
	Output	Schedule of Performance Index	Ratio	Ratio of Earned Value on construction contracts (actual progress made in US$ terms) to Planned Value (planned progress in US$) according to an agreed construction schedule	By road project	TANROADS	TANROADS; MCA-T	Quarterly	A typical measure of progress made and status of implementation for the Sector engineers. Allows us to understand if we are on schedule, and quantify how far off schedule if applicable.
	Output	Percentage of base completed	Percentage	Percentage of sub-base and base earthworks completed (i.e. if sub-base is not complete, then remains 0% until base is initiated)	By road project	TANROADS	TANROADS; MCA-T	Quarterly	
	Output	Percentage of surfacing completed	Percentage	Percentage of surfacing earthworks compacted and tested to satisfy required technical standards	By road project	TANROADS	TANROADS; MCA-T	Quarterly	
R-8	Output	Total km of roads completed (taken over)	km	Kilometer of road upgraded/ completed. The length of roads in kilometers on which construction of new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads is complete (certificates handed over and approved).	By region	TANROADS	TANROADS; MCA-T	Quarterly	
	Output	Percentage of annual roads maintenance budget spent	Percentage	Total amount of Government of Tanzania funds spent for roads maintenance activities in the last year divided by the total amount budgeted for roads maintenance in that year, multiplied by 100. Reported each October of the year.	By Mainland/Zanzibar	TANROADS	TANROADS; MCA-T	Annually	Note that the disaggregation is for Zanzibar, not Pemba, because this indicator is reported at the regional level

R-7	Output	Number of people temporarily employed/ contracted by contractors	Number	The maximum number of people, reported at any one time over the quarter, that were temporarily employed or contracted by MCA-contracted construction companies to work on road/runway construction or upgrading (both local and foreigners). Monthly actuals of the number of people employed at time of reporting are provided to MCA-T and the highest of the three figures is reported in the ITT.	By Mainland/Pemba; By gender	TANROADS	TANROADS; MCA-T	Quarterly	
	Process	Resettlement Action Plans (RAP) approved	Number	Number of RAPs approved		MCA-T	MCA-T	Once	
	Process	Certificate for Environmental Impact Assessment (EIA) issued	Number	Number of certificate for Environmental Impact Assessment (EIA) issued		MCA-T	MCA-T	Once	
R-1	Process	Value of feasibility, design, and supervision contracts	US Dollars	Total value of feasibility, design, and supervision contracts (financed through 609g and Compact funds)	By Mainland/Pemba	EPICOR	MCA-T	Quarterly	
R-2	Process	Value disbursed of feasibility, design, and supervision contracts	US Dollars	Value disbursed of feasibility, design, and supervision contracts to date (cumulative)	By Mainland/Pemba	EPICOR	MCA-T	Quarterly	
R-4	Process	Value of construction contracts	US Dollars	The value of all signed construction contracts (funding from Compact or GoT) for new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads under the Compact.	By Mainland/Pemba	EPICOR	MCA-T	Quarterly	
R-5	Process	Value disbursed of construction contracts	US Dollars	The value disbursed of all signed construction contracts (funding from Compact or GoT) for new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads under the Compact.	By Mainland/Pemba	EPICOR	MCA-T	Quarterly	
R-3	Process	Total km of road under design	km	The length of roads in kilometers under design contracts for construction of new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads.	By Mainland/Pemba	MCA-T	MCA-T	Quarterly	
	Process	Wildlife Management Area MOU signed between MCA-T and USAID	Date	Date Wildlife Management Area MOU signed between MCA-T and USAID		MCA-T	MCA-T	Once	
	Process	Value of in-kind equipment for IEs	US Dollars	Value of in-kind equipment purchased for Implementing Entities to date (cumulative)		EPICOR	MCA-T	Quarterly	

Activity 3: Mafia Island									
	Goal	Average annual household income per capita	US Dollars	Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample		Household survey	Evaluator	Baseline, Endline	The endline will most likely be 2015
	Objective	Annual aggregate visitor spending	US Dollars	Annual aggregate visitor spending	By season (wet and dry)	Evaluation survey	Evaluator	Baseline, Endline	
	Objective	Percentage of households with income generating activities (IGA)	Percentage	Percentage of households which report they have operated an income generating activity out of their household in the last 12 months	By gender	Evaluation survey	Evaluator	Baseline, Endline	
	Objective	Number of stand alone businesses	Number	Total number of enterprises (5 or more employees) located in community	By gender	Evaluation survey	Evaluator	Baseline, Endline	
	Outcome	Total annual passenger arrivals	Number	Total passenger arrivals, reported cumulatively each quarter within one year. The figures are only cumulative for a one year period, therefore the base value resets to 0 at the end of a calendar year.		TAA	TAA; MCA-T	Quarterly	
	Output	Percentage of runway surfacing completed	Percentage	Percentage of runway surfacing completed		TAA	TAA; MCA-T	Quarterly	
	Output	Number of people temporarily employed/ contracted by contractors	Number	The maximum number of people, reported at any one time over the quarter, that were temporarily employed or contracted by MCA-contracted construction companies to work on road/runway construction or upgrading (both local and foreigners). Monthly actuals of the number of people employed at time of reporting are provided to MCA-T and the highest of the three figures is reported in the ITT.	By gender	TAA	TAA; MCA-T	Quarterly	
	Process	Certificate for Environmental Impact Assessment (EIA) issued	Number	Number of certificate for Environmental Impact Assessment (EIA) issued		MCA-T	MCA-T	Once	
	Process	Value of design and supervision contracts	US Dollars	Total value of design and supervision contracts		EPICOR	MCA-T	Quarterly	
	Process	Value disbursed of design and supervision contracts	US Dollars	Total value disbursed of design and supervision contracts		EPICOR	MCA-T	Quarterly	
	Process	Value of construction contracts	US Dollars	Total value of construction contracts including Compact and GoT funds		EPICOR	MCA-T	Quarterly	
	Process	Value disbursed of construction contracts	US Dollars	Value disbursed of construction contracts to date, including Compact and GoT funds		EPICOR	MCA-T	Quarterly	
	Process	Value of in-kind equipment for IEs	US Dollars	Value of in-kind equipment purchased for Ies to date (cumulative)		EPICOR	MCA-T	Quarterly	

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2013 Annex II: Table of Transport Indicator Baselines and Targets

Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (2008)	Year 1 Oct 08 - Sept 09	Year 2 Oct 09 - Sept 10	Year 3 Oct 10 - Sept 11	Year 4 Oct 11 - Sept 12	Year 5 Oct 12 - Sept 13	End of Compact Target
Transport Project										
Activity 1&2: Mainland and Pemba Roads										
Goal	Average annual household income per capita	US Dollars	Level	Tanga: 353.22 Mbeya 388.19 Rukwa: 340.57 Ruvuma: 421.94						N/A (Mainland)
				Pemba (Zanzibar): 216.34						N/A (Pemba)
Objective	Average time to market	Minutes	Level	64 (Mainland; 2009)						N/A (Mainland)
				32 (Pemba; 2009)						N/A (Pemba)
Objective	Average time to medical facilities	Minutes	Level	60 (Mainland; 2009)						N/A (Mainland)
				45 (Pemba; 2009)						N/A (Pemba)
Objective	Average annual household cash crop revenue	US Dollars	Level	138 USD (Mainland; 2009)						N/A (Mainland)
				41 USD (Pemba; 2009)						N/A (Pemba)
Objective	Percentage of households with income generating activities (IGA)	Percentage	Level	Mainland-Male: N/A Mainland-Female: N/A Pemba-Male: 13.16% Pemba-Female: 1.92%						Mainland (M/F) and Pemba (M/F): N/A
Objective	Number of stand alone businesses	Number	Level	Mainland (M/F): N/A Pemba (M/F): N/A						Mainland (M/F): N/A Pemba (M/F): N/A
Objective	Average hours worked in the last week	Hours	Level	Mainland - Male: N/A Mainland - Female: N/A						N/A (Mainland - Male and Female)
				Pemba - Male: N/A Pemba - Female: N/A All: 32.22						N/A (Pemba - Male and Female)
Objective	Percentage of children who missed any school in the last 4 weeks	%	Level	Mainland: 14.86%						Mainland: N/A
				Pemba (Zanzibar): 5.03%						Pemba: N/A

Objective	Average days of school missed for school age children in the last 4 weeks	Days	Level	Mainland and Pemba: Male: N/A Female: N/A						Mainland and Pemba: Male: N/A Female: N/A
Outcome	International Roughness Index (IRI)	m/km	Level	14.3 (Tunduma Sumbawanga)						2.5 (Tunduma Sumbawanga)
				14.5 (Tanga Horohoro)						2.5 (Tanga Horohoro)
				16 (Namtumbo-Songea and Peramiho Mbinga)						2.5 (Namtumbo-Songea and Peramiho Mbinga)
				15 (Pemba)						4 (Pemba)
Outcome	Average Annual Daily Traffic	Number	Level	470 (Tunduma Sumbawanga)						810 (Tunduma Sumbawanga)
				530 (Tanga Horohoro)						915 (Tanga Horohoro)
				230 (Namtumbo-Songea)						390 (Namtumbo-Songea)
				110 (Peramiho Mbinga)						180 (Peramiho Mbinga)
				26 (Pemba)						49 (Pemba)
Outcome	Annual road traffic fatalities	Number	Level	N/A						N/A
Output	Schedule of Performance Index	Ratio	Level	N/A (Tunduma Sumbawanga)	N/A	N/A	N/A	0.9	1.0	1.0
				N/A (Tanga Horohoro)	N/A	N/A	N/A	0.9	1.0	1.0
				N/A (Namtumbo-Songea)	N/A	N/A	N/A	0.9	1.0	1.0
				N/A (Peramiho Mbinga)	N/A	N/A	N/A	0.9	1.0	1.0
				N/A (Pemba)	N/A	N/A	N/A	0.9	1.0	1.0
Output	Percentage of base completed	Percentage	Cumulative	0 (Tunduma Sumbawanga)	0%	0%	2%	60%	100%	100%
				0 (Tanga Horohoro)	0%	0%	27%	100%	N/A	100%
				0 (Namtumbo-Songea)	0%	0%	0%	90%	100%	100%
				0 (Peramiho Mbinga)	0%	0%	0%	85%	100%	100%
				0 (Pemba)	0%	0%	0%	20%	100%	100%
Output	Percentage of surfacing completed	Percentage	Cumulative	0 (Tunduma Sumbawanga)	0%	0%	0%	54%	100%	100%
				0 (Tanga Horohoro)	0%	0%	10%	100%	N/A	100%
				0 (Namtumbo-Songea)	0%	0%	0%	75%	100%	100%
				0 (Peramiho Mbinga)	0%	0%	0%	70%	100%	100%
				0 (Pemba)	0%	0%	0%	15%	100%	100%

Output	Total km of roads completed (taken over)	km	Cumulative	0 (Tunduma Sumbawanga)	0	0	0	0	223.2	223.2
				0 (Tanga Horohoro)	0	0	0	65.0	N/A	65.0
				0 (Namtumbo-Songea and (Peramiho Mbinga)	0	0	0	0	145.0	145 (Peramiho-Mbinga 78km + Namtumbo-Songea 67km)
				0 (Pemba)	0	0	0	0	35.0	35.0
Output	Percentage of annual roads maintenance budget spent	Percentage	Level	Mainland: 79%		82%	86%	90%	95%	95%
				Zanzibar: 75%		80%	85%	90%	95%	95%
Output	Number of people temporarily employed/contracted by contractors	Number	Level	0 (Mainland, Male and Female)						All: N/A
				0 (Pemba, Male and Female)						All: N/A
Process	Resettlement Action Plan (RAP) approved	Number	Cumulative	0	0	5	N/A	N/A	N/A	5
Process	Certificate for Environmental Impact Assessment (EIA) issued	Number	Cumulative	0	0	5	N/A	N/A	N/A	5
Process	Value of feasibility, design, and supervision contracts		Cumulative	0 (Mainland)						$13,751,825
				0 (Pemba)						$1,841,600
Process	Value disbursed of feasibility, design, and supervision contracts	US Dollars	Cumulative	0 (Mainland)	0	0	$802,154	$11,302,592	$17,378,372	$17,378,372
				0 (Pemba)	0	$ 513,750	$ 756,000	$1,280,368	$1,841,600	$1,841,600
Process	Value of construction contracts	US Dollars	Cumulative	0 (Mainland)						$363,640,424
				0 (Pemba)						$24,580,182
Process	Value disbursed of construction contracts	US Dollars	Cumulative	0 (Mainland)	0	$ 28,451,594	$ 101,148,627	$ 200,112,475	$374,455,179	$374,455,179
				0 (Pemba)	0	$ -	$ -	$ 3,614,543	$24,580,182	$24,580,182
Process	Total km of road under design	km	Cumulative	0 (Mainland)	0	434.9	434.9	434.9	434.9	434.9 (Mainland)
				0 (Pemba)	0	0	35.0	35.0	35.0	35.0 (Pemba)
Process	Wildlife Management Area MOU signed between MCA-T and USAID	Date	Date	N/A	8-Apr-09					8-Apr-09
Process	Value disbursed of in-kind equipment for IEs	US Dollars	Cumulative	0	0	$ 133,630	$ 131,023	N/A	N/A	$ 131,022

Activity 3: Mafia Island										
Goal	Average annual household income per capita	US Dollars	Level	$452						N/A
Objective	Annual aggregate visitor spending	US Dollars	Level	Wet: $1.02 million Dry: $2.28 million						Wet: N/A Dry: N/A Both: $4.2 million
Objective	Percentage of households with income generating activities (IGA)	Percentage	Level	Male: 47% Female: 53%						Male: N/A
										Female: N/A
Objective	Number of stand alone businesses	Number	Level	Male: 532						Male: N/A
				Female: 425						Female: N/A
Outcome	Total annual passenger arrivals	Number	Level	8,526						14,000
Output	Percentage of runway surfacing completed	Percentage	Cumulative	0%	0	0	0	60%	100%	100%
Output	Number of people temporarily employed/contracted by contractors	Number	Level	Male: 0 Female: 0						Male and Female: N/A
Process	Certificate for Environmental Impact Assessment (EIA) issued	Number	Cumulative	0	0	1	N/A	N/A	N/A	1
Process	Value of design and supervision contracts	US Dollars	Cumulative	0						$ 1,800,000
Process	Value disbursed of design and supervision contracts	US Dollars	Cumulative	0	$ -	$ -	$ 285,000	$ 1,020,000	$ 2,098,720	$ 2,098,720
Process	Value of construction contracts	US Dollars	Cumulative	0						$ 10,177,631
Process	Value disbursed of construction contracts	US Dollars	Cumulative	0	$ -	$ -	$ -	$ -	$ 10,177,631	$ 10,177,631
Process	Value of in-kind equipment for IEs	US Dollars	Cumulative	0		$ 30,375	$ 30,375	$ 70,000	$ 98,000	$ 98,000

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Annex I: Energy Indicator Documentation Table

Common Indicator	Indicator Level	Indicator Name	Unit of Measure	Definition	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
Energy Project									
Activity 1: Mainland Transmission and Distribution									
	Goal	Average annual household income per capita	US Dollars	Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample	By region	Household survey	Mathematica	Baseline and Endline	Endline expected in 2015
	Objective	Average annual business revenue	US Dollars	Average annual business revenue for household income generating activities and enterprises in survey	By region	Tanga enterprise survey; Household IGA module	Mathematica	Baseline and Endline	
	Objective	Average annual wages	US Dollars	Average annual wages for household income generating activities and enterprises in survey	By region	Tanga enterprise survey; Household IGA module	Mathematica	Baseline and Endline	
	Objective	Average annual expenditure on energy	US Dollars	Average annual expenditure on energy for household income generating activities and enterprises in survey	By region	Tanga enterprise survey; Household IGA module	Mathematica	Baseline and Endline	
	Objective	Percentage of population with indoor air pollution related illness	Percentage	Percentage of population with indoor air pollution related illness	By gender; By age: under age 5/ age 5 – 18/ Adults over 18 years of age; By respiratory and vision symptoms	Household survey	Mathematica	Baseline and Endline	
	Objective	Average hours spent studying last week for all children enrolled in school	Hours	Hours spent studying last week for all children enrolled in school	By gender	Household survey	Mathematica	Baseline and Endline	
	Outcome	Number of current power customers	Number	Total number of current power customers, including D1, T1, T2, and T3; domestic, commercial, and industrial categories	By region	TANESCO	TANESCO, MCA-T	Quarterly	
	Outcome	Number of power customers connected to Compact-built lines	Number	Total number of current power customers connected to new power lines constructed using Compact funds	By region	TANESCO monthly data reporting template	TANESCO, MCA-T	Quarterly	
	Outcome	Technical and non-technical losses	Percentage	Monthly ratio of the difference between Kwh received by all sub-stations in a region and Kwh billed [Received-Billed] to Kwh received, averaged over the quarter	By region	TANESCO	TANESCO, MCA-T	Quarterly	

	Outcome	Average duration of blackouts	Hours	Average duration of outages (planned and unplanned) in one month, averaged over the quarter. = [∑t=1-3 (total hours of outages / number of outages)t] / 3. t = month in quarter	By region	TANESCO	TANESCO, MCA-T	Quarterly	
	Outcome	Average frequency of blackouts	Number	Monthly number of outages (planned and unplanned), averaged over the quarter	By region	TANESCO	TANESCO, MCA-T	Quarterly	
	Outcome	Average annual quantity of other energy sources consumed	Kilograms (Kg)	Total quantity of non-electric other energy sources (e.g. solid fuel: wood, charcoal, crop residues, straw, dung, and candles; liquid fuel: batteries, kerosene, gas/diesel, and LPGetc.) consumed per household in the last year (converted to Kg), averaged across household sample. A conversion factor of 0.8 Kg per liter is used to convert liquid fuel consumed to Kg	By region	Household survey	Mathematica	Baseline and Endline	Endline expected in 2015
	Outcome	Average availability of power in the last 24 hours	Hours	Average number of hours power was available to the household in the last 24 hours	By region	Household survey	Mathematica	Baseline and Endline	
	Outcome	Total quantity of electricity sold	MWh	Quantity of electricity sold in the last quarter	By region	TANESCO	TANESCO, MCA-T	Quarterly	
	Output	Total km of 33 & 11 KV constructed	km	Total kilometers of 33 and 11 KV lines constructed to date (cumulative)	By region	TANESCO	TANESCO, MCA-T	Quarterly	
	Output	Total km of LV constructed	km	Total kilometers of LV lines constructed to date (cumulative)	By region	TANESCO	TANESCO, MCA-T	Quarterly	
	Output	Grid substation capacity installed	MVA	Total transmission and distribution grid substation capacity installed to date. Grid substation projects in Morogoro, Tanga, and Zanzibar	By region of grid substation	TANESCO monthly reporting template	TANESCO and ZECO, MCA-T	Quarterly	
	Output	Primary substation capacity installed	MVA	Total transmission and distribution primary substation capacity installed to date on Mainland. Primary substation projects in 6 original mainland T&D regions	By region of primary substation	TANESCO monthly reporting template	TANESCO, MCA-T	Quarterly	
	Output	Cost Recovery Ratio	Ratio	Total billings in the last fiscal year divided by total costs in the last fiscal year.		TANESCO	TANESCO, MCA-T	Annual	
	Output	Collections Efficiency	Ratio	Total revenue collected in current month divided by total billing from the previous month.	By region	TANESCO	TANESCO, MCA-T	Quarterly	

	Output	Total number of people temporarily employed/contracted by contractors	Number	Number of people (both local and foreigners) temporarily employed/contracted by contractors to date (cumulative)		TANESCO	TANESCO, MCA-T	Quarterly	
	Output	Total hours of training delivered to implementing entities	Hours	Hours of training delivered to implementing entities to date (cumulative)		MCA-T	MCA-T	Quarterly	
	Process	Resettlement Action Plan (RAP) approved	Number	Number of RAPs approved		MCA-T	MCA-T	Once	
	Process	Certificate for Environmental Impact Assessment (EIA) issued	Date	Date certificate for Environmental Impact Assessment (EIA) issued		MCA-T	MCA-T	Once	
	Process	Environmental and Social Management Plan approved	Date	Date Environmental and Social Management Plan approved		MCA-T	MCA-T	Once	
	Process	Value of feasibility, preliminary design and supervision contracts	US Dollars	Total value of feasibility, preliminary design and supervision contracts		EPICOR	MCA-T	Quarterly	
	Process	Value disbursed of feasibility, preliminary design and supervision contracts	US Dollars	Value disbursed of feasibility, preliminary design and supervision contracts to date (cumulative)		EPICOR	MCA-T	Quarterly	
	Process	Value of design and build construction contracts	US Dollars	Value of design and build construction contracts		EPICOR	MCA-T	Quarterly	
	Process	Value disbursed of design and build construction contracts	US Dollars	Value disbursed of design and build construction contracts to date (cumulative)		EPICOR	MCA-T	Quarterly	
	Process	Value of in-kind equipment for IEs	US Dollars	Value of in-kind equipment purchased for Ies to date (cumulative)		EPICOR	MCA-T	Quarterly	
Activity 2: Zanzibar Cable									
	Goal	Average annual household income per capita	US Dollars	Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample		Evaluation survey	Mathematica	Baseline and Endline	Endline expected in 2015
	Objective	Average annual business revenue	US Dollars	Average annual business revenue of hotels in survey		Zanzibar hotel survey	Mathematica	Baseline and Endline	
	Objective	Average annual wages	US Dollars	Average annual wages of hotels in survey		Zanzibar hotel survey	Mathematica	Baseline and Endline	
	Objective	Average annual expenditure on energy	US Dollars	Average annual expenditure on energy of hotels in survey		Zanzibar hotel survey	Mathematica	Baseline and Endline	
	Objective	Average number of employees per hotel	Number	Average number of employees per hotel	By gender	Zanzibar hotel survey	Mathematica	Baseline and Endline	
	Outcome	Number of current power customers	Number	Total number of current power customers	By tariff cateogry (D1, T1, T2&T3)	TANESCO	TANESCO, MCA-T	Quarterly	
	Outcome	Technical and non-technical losses	Percentage	Monthly ratio of the difference between Kwh received by all sub-stations in a region and Kwh billed [Received-Billed] to Kwh received, averaged over the quarter		TANESCO	TANESCO, MCA-T	Quarterly	

	Outcome	Average duration of blackouts	Hours	Average duration of outages (planned and unplanned) in one month, averaged over the quarter. = [∑t=1-3 (total hours of outages / number of outages)t] / 3. t = month in quarter		TANESCO (ZECO)	TANESCO, MCA-T	Quarterly	
	Outcome	Average frequency of blackouts	Number	Monthly number of outages (planned and unplanned), averaged over the quarter		TANESCO (ZECO)	TANESCO, MCA-T	Quarterly	
	Outcome	Average availability of power in the last 24 hours	Hours	Average number of hours power was available to the hotel in the last 24 hours		Hotel survey	Mathematica	Baseline and Endline	Endline expected in 2015
	Outcome	Total quantity of electricity sold	MWh	Quantity of electricity sold in the last quarter		TANESCO	TANESCO, MCA-T	Quarterly	
	Outcome	Average annual quantity of other energy sources consumed	kg	Total quantity of non-electric other energy sources (e.g. solid fuel: wood, charcoal, crop residues, straw, dung, and candles; liquid fuel: batteries, kerosene, gas/diesel, and LPGetc.) consumed per household in the last year (converted to Kg), averaged across household sample. A conversion factor of 0.8 Kg per liter is used to convert liquid fuel consumed to Kg.		Evaluation survey	Mathematica	Baseline and Endline	Endline expected in 2015
	Output	Total km of 132KV constructed	km	Total kilometers of 132KV submarine cable and overhead lines constructed to date	By Line type (Submarine Cable, Overhead Lines)	TANESCO	TANESCO, MCA-T	Quarterly	
	Output	Grid substation capacity installed	MVA	Total grid substation capacity installed to date. Grid substation projects in Morogoro, Tanga, and Zanzibar		TANESCO monthly reporting template	TANESCO, ZECO, MCA-T	Quarterly	
	Output	Cost Recovery Ratio	Ratio	Total billings in the last fiscal year divided by total costs in the last fiscal year.		TANESCO	TANESCO, MCA-T	Annual	
	Output	Collections Efficiency	Ratio	Total revenue collected in current month divided by total billing from the previous month.		TANESCO	TANESCO, MCA-T	Quarterly	
	Output	Total number of people temporarily employed/contracted by contractors	Number	Number of people (both local and foreigners) temporarily employed/contracted by contractors to date (cumulative)		TANESCO	TANESCO, MCA-T	Quarterly	
	Output	Total hours of training delivered to implementing entities	Hours	Hours of training delivered to implementing entities to date (cumulative)		MCA-T	MCA-T	Quarterly	
	Process	Resettlement Action Plan (RAP) approved	Number	Number of RAPs approved		MCA-T	MCA-T	Once	

	Process	Certificate for Environmental Impact Assessment (EIA) issued	Date	Date certificate for Environmental Impact Assessment (EIA) issued		MCA-T	MCA-T	Once	
	Process	Environmental and Social Management Plan approved	Date	Date Environmental and Social Management Plan approved		MCA-T	MCA-T	Once	
	Process	Value of feasibility, preliminary design and supervision contracts	US Dollars	Total value of feasibility, preliminary design and supervision contracts		EPICOR	MCA-T	Quarterly	
	Process	Value disbursed of feasibility, preliminary design and supervision contracts	US Dollars	Value disbursed of feasibility, preliminary design and supervision contracts to date (cumulative)		EPICOR	MCA-T	Quarterly	
	Process	Value of design and build construction contracts	US Dollars	Value of design and build construction contracts		EPICOR	MCA-T	Quarterly	
	Process	Value disbursed of design and build construction contracts	US Dollars	Value disbursed of design and build construction contracts to date (cumulative)		EPICOR	MCA-T	Quarterly	
	Process	Value of in-kind equipment for IEs	US Dollars	Value of in-kind equipment purchased for Ies to date (cumulative)		EPICOR	MCA-T	Quarterly	
Activity 3: Kigoma Solar									
	Goal	Average annual household income per capita	US Dollars	Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample		Evaluation survey	Evaluator	Baseline and Endline	
	Objective	Average annual business revenue	US Dollars	Average annual business revenue		Evaluation survey	Mathematica	Baseline and Endline	
	Objective	Average annual wages	US Dollars	Average annual wages		Evaluation survey	Evaluator	Baseline and Endline	
	Objective	Average annual expenditure on energy	US Dollars	Average annual expenditure on energy		Evaluation survey	Evaluator	Baseline and Endline	
	Objective	Schools with afterhours study programs	Number	Number of targeted schools (installed with PV systems) that have afterhours study programs. Afterhours could be before dawn or after dusk. Study programs refer to opening schools for students or teachers for preparation, revision, or teaching.		Evaluation survey	Evaluator	Baseline and Endline	
	Objective	Availability of vaccines	Number	Number of vaccines available on day of survey in the targeted health centers or dispensaries installed with PV vaccine refrigeration systems, averaged across the survey sample. Vaccines include BCG, Measles, and Polio		Evaluation survey	Evaluator	Baseline and Endline	

	Objective	Vaccinations administered	Number	Total number of vaccinations administered to children during the previous month. Vaccines of interest include BCG, Measles, and Polio.		Evaluation survey	Evaluator	Baseline and Endline	Endline expected in 2015
	Outcome	Average availability of power in the last 24 hours	Hours	Average number of hours power was available to the end user in the last 24 hours		Evaluation survey	Evaluator	Baseline and Endline	
	Outcome	Average annual quantity of other energy sources consumed	Kg	Total quantity of non-electric other energy sources (e.g. solid fuel: wood, charcoal, crop residues, straw, dung, and candles; liquid fuel: batteries, kerosene, gas/diesel, and LPGetc.) consumed per household in the last year (converted to Kg), averaged across household sample. A conversion factor of 0.8 Kg per liter is used to convert liquid fuel consumed to Kg.		Evaluation survey	Evaluator	Baseline and Endline	
	Outcome	Number of PV systems sold and installed at households	Number	Total number of PV systems supplied and installed by the MCA-T contractor to households through the SACCOS system in the two target districts in Kigoma.		Evaluation survey	Evaluator	Baseline and Endline	
	Outcome	Daily solar power consumption	Kilowatt hours (Kwh)	Total Solar power consumption in the last seven days divided by seven days, averaged over sample.	By type of end user (Dispensaries, Health centers, Vaccine refrigerators, Secondary Schools, Village Markets, Beach Management Units, Households)	Evaluation survey	Evaluator	Baseline and Endline	
	Output	Capacity of PV systems installed	Kilowatts peak (kWp)	Total capacity of solar PV systems installed. Includes all fully-subsidized non-household installations as well as those at the household level.	By Non-household/ Household	Contractor	Contractor; MCA-T	Quarterly	
	Output	Number of PV systems installed	Number	Total number of solar power systems (PV) installed in schools, health facilities, village markets, BMU through the Kigoma Solar Activity.	By type of recipient (Dispensaries, Health centers, Vaccine refrigerators, Secondary Schools, Village Markets, Beach Management Units)	Kigoma Solar Consultant's Weekly Update	Contractor; MCA-T	Quarterly	

	Output	Total number of people temporarily employed/contracted by contractors	Number	Number of people (both local and foreigners) temporarily employed/contracted by contractors to date (cumulative)		Contractor	Contractor; MCA-T	Quarterly	
	Output	Hours of training delivered to end users	Hours	Total hours of training delivered to solar power end users in Kigoma		Contractor	Contractor; MCA-T	Quarterly	
	Process	Value of feasibility and design contracts	US Dollars	Value of feasibility and design contracts		EPICOR	MCA-T	Quarterly	
	Process	Value disbursed of feasibility and design contracts	US Dollars	Value disbursed of feasibility and design contracts		EPICOR	MCA-T	Quarterly	
	Process	Value of construction contracts	US Dollars	Total value of construction contracts		EPICOR	MCA-T	Quarterly	
	Process	Value disbursed of construction contracts	US Dollars	Value disbursed of construction contracts to date (cumulative)		EPICOR	MCA-T	Quarterly	

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Annex II: Table of Energy Indicator Baselines and Targets

Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (2008)	Year 1 Oct 08 - Sept 09	Year 2 Oct 09 - Sept 10	Year 3 Oct 10 - Sept 11	Year 4 Oct 11 - Sept 12	Year 5 Oct 12 - Sept 13	End of Compact Target
Energy Project										
Activity 1: Mainland Transmission and Distribution										
Goal	Average annual household income per capita	US Dollars	Level	Morogoro: 338 Tanga: 307 Iringa: 522 Mbeya: 603 Dodoma: 281 Mwanza: 446 Kigoma: 246						All: N/A
Objective	Average annual business revenue	US Dollars	Level	Morogoro: 513.22 Tanga: 643.97 Iringa: 922.65 Mbeya: 982.52 Dodoma: 622.78 Mwanza: 1221.51 Kigoma: N/A						All: N/A
Objective	Average annual wages	US Dollars	Level	All regions: N/A						N/A
Objective	Average annual expenditure on energy	US Dollars	Level	Morogoro: 260.15 Tanga: 216.66 Iringa: 201.33 Mbeya: 197.79 Dodoma: 140.40 Mwanza: 246.69 Kigoma: N/A						All: N/A

Objective	Percentage of population with indoor air pollution related illness	Percentage	Level	**Respiratory:** Male <5: N/A Female <5: N/A All <5: 29% Male 5-18: N/A Female 5-18: N/A All 5-18: N/A Male >18: N/A Female >18: N/A All >18: 21% **Vision:** Male <5: N/A Female <5: N/A All <5: 1% Male 5-18: N/A Female 5-18: N/A All 5-18: N/A Male >18: N/A Female >18: N/A All >18: 14%						All: N/A
Objective	Average hours spent studying last week for all children enrolled in school	Hours	Level	Male: 1.25 Female: 1.24 (does not include Kigoma)						Male and Female: N/A
Outcome	Number of current power customers	Number	Cumulative	Morogoro: 38,466 Tanga: 32,983 Iringa: 41,347 Mbeya: 49,696 Dodoma: 29,332 Mwanza: 23,134 Kigoma: 8,277						Morogoro: 55,441 Tanga: 56,489 Iringa: 50,545 Mbeya: 74,666 Dodoma: 34,992 Mwanza: 58,937 Kigoma: 16,015
Outcome	Number of power customers connected to Compact-built lines	Number	Cumulative	All regions: 0						Morogoro: 10,056 Tanga: 4,658 Iringa: 2,470 Mbeya: 2,447 Dodoma: 3,728 Mwanza: 11,435 Kigoma: N/A

Outcome	Technical and non-technical losses	Percentage	Level	Morogoro: 28.63% Tanga: 28.48% Iringa: 19.96% Mbeya: 21.06% Dodoma: 19.96% Mwanza: 19.96% Kigoma: 36.98%	N/A	Avg: 21.67%	Avg: 20.5%	Avg: 20%	Avg: 18%	All regions: 18%
Outcome	Average duration of blackouts	Hours	Level	Morogoro: 15.54 Tanga: 6.30 Iringa: 8.59 Mbeya: 4.40 Dodoma: 9.27 Mwanza: 9.80 Kigoma: 2.25						Morogoro: 6.90 Tanga: 2.80 Iringa: 3.81 Mbeya: 1.95 Dodoma: 4.11 Mwanza: 4.25 Kigoma: 1.00
Outcome	Average frequency of blackouts	Number	Level	Morogoro: 435.00 Tanga: 130.00 Iringa: 62.00 Mbeya: 92.67 Dodoma: 83.33 Mwanza: 159.63 Kigoma: 72.33						Morogoro: 193.01 Tanga: 57.68 Iringa: 27.51 Mbeya: 41.12 Dodoma: 36.97 Mwanza: 70.83 Kigoma: 32.09
Outcome	Average availability of power in the last 24 hours	Hours	Level	All regions: N/A						N/A
Outcome	Total quantity of electricity sold	MWh	Level	Morogoro: 29,793 Tanga: 41,299 Iringa: 19,815 Mbeya: 27,500 Dodoma: 14,498 Mwanza: 37,612 Kigoma: 2,481						Morogoro: 57,366 Tanga: 79,521 Iringa: 38,154 Mbeya: 52,951 Dodoma: 27,917 Mwanza: 72,422 Kigoma: 5,612
Outcome	Average annual quantity of other energy sources consumed	kg	Level	Morogoro: 1,648 Tanga: 2,111 Iringa: 2,241 Mbeya: 1,775 Dodoma: 1,762 Mwanza: 1,930 Kigoma: N/A						N/A
Output	Total km of 33 & 11 KV constructed	km	Cumulative	All regions: 0	0	0	0	All: 921	Morogoro: 144.98 Tanga: 56.08 Iringa: 197.96 Dodoma: 463.73 Mbeya: 17.60 Mwanza: 436.83 Kigoma: 16.98	Morogoro: 144.98 Tanga: 56.08 Iringa: 197.96 Dodoma: 463.73 Mbeya: 17.60 Mwanza: 436.83 Kigoma: 16.98

Output	Total km of LV constructed	km	Cumulative	All: 0	0	0	0	All: 894	Morogoro: 348.92 Tanga: 223.32 Iringa: 250.57 Mbeya: 120.87 Dodoma: 402.72 Mwanza: 432.84 Kigoma: 72.64	Morogoro: 348.92 Tanga: 223.32 Iringa: 250.57 Mbeya: 120.87 Dodoma: 402.72 Mwanza: 432.84 Kigoma: 72.64
Output	Grid substation capacity installed	MVA	Cumulative	Morogoro: 150 Tanga: 40						Morogoro: 210 Tanga: 85
Output	Primary substation capacity installed	MVA	Cumulative	Morogoro: 42.5 Tanga: 69.20 Iringa: 17.10 Mbeya: 35.00 Dodoma: 74.40 Mwanza: 45.00						Morogoro: 64.50 Tanga: 84.20 Iringa: 22.10 Mbeya: 142.50 Dodoma: 94.40 Mwanza: 65.00
Output	Cost Recovery Ratio	Ratio	Level	73.43%	N/A	N/A	N/A	95%	95%	95%
Output	Collections Efficiency	Ratio	Level	Morogoro: 74.60% Tanga: 59.39% Iringa: 81.97% Mbeya: 68.51% Dodoma: 83.03% Mwanza: 92.83% Kigoma: 57.07%	N/A	Avg: 80.83%	Avg: 85.67%	Avg: 90%	Avg: 95%	All regions: 95%
Output	Total number of people temporarily employed/contracted by contractors	Number	Cumulative	0						N/A
Output	Total hours of training delivered to implementing entities	Hours	Cumulative	0	N/A	48	96	144	192	192
Process	Resettlement Action Plan (RAP) approved	Number	Cumulative	0	0	7	N/A	N/A	N/A	7
Process	Certificate for Environmental Impact Assessment (EIA) issued	Date	Date	N/A	N/A	23-Feb-10				23-Feb-10
Process	Environmental and Social Management Plan approved	Date	Date	N/A	N/A	10-Dec-09				10-Dec-09
Process	Value of feasibility, preliminary design and supervision contracts	US Dollars	Cumulative	0						$ 5,756,757
Process	Value disbursed of feasibility, preliminary design and supervision contracts	US Dollars	Cumulative	0	$ 516,700	$ 2,271,603	$ 3,849,940	$ 5,756,757	N/A	$ 8,198,324
Process	Value of design and build construction contracts	US Dollars	Cumulative	0						$ 97,970,983

Process	Value disbursed of design and build construction contracts	US Dollars	Cumulative	0	0	$ -	$ 24,688,037	$ 98,637,310	N/A	$ 100,227,516
Process	Value of in-kind equipment for IEs	US Dollars	Cumulative	0						$ 129,871
Activity 2: Zanzibar Cable										
Goal	Average annual household income per capita	US Dollars	Level	216.34						N/A
Objective	Average annual business revenue	US Dollars	Level	N/A						N/A
Objective	Average annual wages	US Dollars	Level	N/A						N/A
Objective	Average annual expenditure on energy	US Dollars	Level	N/A						N/A
Objective	Average number of employees per hotel	Number	Level	79.5						N/A
Outcome	Number of current power customers	Number	Cumulative	D1: 58,763 T1: 10,159 T2&T3: 289						All: 98,870
Outcome	Technical and non-technical losses	Percentage	Level	26%	N/A	23%	22%	21%	20%	20%
Outcome	Average duration of blackouts	Hours	Level	0.10						0.04
Outcome	Average frequency of blackouts	Number	Level	2.33						1.03
Outcome	Average availability of power in the last 24 hours	Hours	Level	23.4						N/A
Outcome	Total quantity of electricity sold	Megawatt hours (MWh)	Level	34,845						60,551
Outcome	Average annual quantity of other energy sources consumed	kg	Level	N/A						N/A
Output	Total km of 132 KV constructed	km	Cumulative	Submarine Cable and Overhead Lines: 0						Submarine Cable: 24.4 Overhead lines: 40.7
Output	Grid substation capacity installed	MVA	Cumulative	60						180
Output	Cost Recovery Ratio	Ratio	Level	75.4%	N/A	N/A	N/A	95%	95%	95%
Output	Collections Efficiency	Ratio	Level	86.55%	N/A	87%	90%	93%	95%	95%
Output	Total number of people temporarily employed/contracted by contractors	Number	Cumulative	0						N/A
Output	Total hours of training delivered to implementing entities	Hours	Cumulative	0						525

Process	Resettlement Action Plan (RAP) approved	Number	Cumulative	0	0	1				1
Process	Certificate for Environmental Impact Assessment (EIA) issued	Date	Date	N/A	N/A	23-Feb-10				23-Feb-10
Process	Environmental and Social Management Plan approved	Date	Date	N/A	N/A	10-Dec-09				10-Dec-09
Process	Value of feasibility, preliminary design and supervision contracts	US Dollars	Cumulative	0						$ 6,836,522
Process	Value disbursed of feasibility, preliminary design and supervision contracts	US Dollars	Cumulative	0	$ 372,505	$ 2,480,085	$ 4,042,887	$ 6,836,522	N/A	$ 8,512,463
Process	Value of design and build construction contracts	US Dollars	Cumulative	0						$ 50,168,285
Process	Value disbursed of design and build construction contracts	US Dollars	Cumulative	0	$ -	$ 5,622,680	$ 14,250,804	$ 50,168,284	N/A	$ 50,250,635
Process	Value of in-kind equipment for IEs	US Dollars	Cumulative	0						$ 26,745
Activity 3: Kigoma Solar										
Goal	Average annual household income per capita	US Dollars	Level	246						N/A
Objective	Average annual business revenue	US Dollars	Level	N/A						N/A
Objective	Average annual wages	US Dollars	Level	N/A						N/A
Objective	Average annual expenditure on energy	US Dollars	Level	N/A						N/A
Objective	Schools with afterhours study programs	Number	Cumulative	N/A						45
Objective	Availability of vaccines	Number	Level	N/A						N/A
Objective	Vaccinations administered	Number	Level	N/A						N/A
Outcome	Average availability of power in the last 24 hours	Hours	Level	N/A						N/A
Outcome	Average annual quantity of other energy sources consumed	kg	Level	N/A						N/A
Outcome	Number of PV systems sold and installed at households	Number	Cumulative	0						N/A
Outcome	Daily solar power consumption	Kilowatt hours (Kwh)	Level	All end users: N/A						N/A
Output	Capacity of PV systems installed	Kilowatts peak (kWp)	Cumulative	Non-household: 0 Household: 0						Non-household: 241.1 Household: 380.6

Output	Number of PV systems installed	Number	Cumulative	All recipients: 0						Dispensaries: 116 Health centers: 14 Vaccine Refrigerators: 130 Secondary Schools: 45 Village markets: 25 Beach Mgmt Unit: 60
Output	Total number of people temporarily employed/contracted by contractors	Number	Cumulative	0						N/A
Output	Hours of training delivered to end users	Hours	Cumulative	0	0	0	0	N/A	938.4	938.4
Process	Value of feasibility and design contracts	US Dollars	Cumulative	0						$ 501,804
Process	Value disbursed of feasibility and design contracts	US Dollars	Cumulative	0	$ -	$ -	$ 125,270.00	$ 396,927.57	$ 510,724.24	$ 510,724
Process	Value of construction contracts	US Dollars	Cumulative	0						$ 4,746,057
Process	Value disbursed of construction contracts	US Dollars	Cumulative	0	$ -	$ -	$ -	$ 3,598,557	$ 4,714,809	$ 4,714,809

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Annex I: Water Indicator Documentation Table

Common Indicator	Indicator Level	Indicator Name	Unit of Measure	Definition	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
Water Project									
Activity 1&2: Lower Ruvu and Morogoro									
	Goal	Average annual household income per capita	US Dollars	Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample	By project	NBS Accounts Survey (2011), Evaluation Survey	Social Impact	Baseline and Endline	The endline will most likely be 2015
	Objective	Average current value of household assets per capita	US Dollars	Average of total value of household assets divided by total number of household members for all households in the survey sample	By project	Household Budget Survey 2007; Evaluation survey	Social Impact	Baseline and Endline	
	Objective	Average Net Business Income (Profit)	US Dollars	Average net business income (profit) during the months in the last year when the business was in operation, averaged over the household sample	By project	Water Evaluation Household Survey	Social Impact	Baseline and Endline	
	Objective	Under 5 mortality rate	Rate	National-level probability per 1,000 that a newborn baby will die before reaching age five	By gender	DHS; Evaluation survey	Social Impact	Baseline and Endline	
	Objective	Adult mortality rate	Rate	Age-specific mortality rates for women and men age 15-49 based on the survivorship of sisters and brothers of survey respondents, for the ten-year period preceding the survey	By gender	DHS; Evaluation survey	Social Impact	Baseline and Endline	
WS-16	Objective	Incidence of diarrhea	Percentage	The percentage of individuals reported as having diarrhea in the two weeks preceding the survey, out of the total population	By project; By gender; By age: under 5, 5-18, over 18	Household Budget Survey 2007; Evaluation survey	Social Impact	Baseline and Endline	
	Objective	Average hours worked last week	Hours	Average hours worked last week for all household members 15-49 years old	By project; By gender	Household Budget Survey 2007; Evaluation survey	Social Impact	Baseline and Endline	
	Objective	Percentage of children who missed any school in the last 4 weeks	Percentage	Percentage of surveyed school children (Primary/Secondary) who missed any school in the last 4 weeks due to illness or injury	By project; By gender	Household Budget Survey 2007; Evaluation survey	Social Impact	Baseline and Endline	
	Objective	Average time spent fetching water from home in last week	Minutes	Average time spent fetching water from home in last week	By project; By gender; By age under age 5/ age 5 – 18/ Adults over 18 years of age	Household Budget Survey 2007; Evaluation survey	Social Impact	Baseline and Endline	
	Outcome	Total number of current customers	Number	Number of current customers	By project; By domestic and non-domestic	DAWASA; MORUWASA	DAWASA; MORUWASA; MCA-T	Quarterly	
	Outcome	Proportion of non-active customers	Percentage	Percentage of non-active customers (connected to line but do not receive water) to total customers	By project	DAWASA; MORUWASA	Social Impact; DAWASA; MORUWAS; MCA-T	Quarterly	

WS-12	Outcome	Percentage of households with access to improved water supply	Percentage	Percentage of households with access to improved water supply (piped connections) of total households	By project	DHS; Evaluation survey	Social Impact	Baseline and Endline	The endline will most likely be 2015
WS-9	Outcome	Continuity of service	Hours	Average hours of service per day for water supply	By project; By season (wet/dry)	Evaluation survey	Social Impact	Baseline and Endline	
	Outcome	Nephelometric turbidity units	NTU	Turbidity is the cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is a key test of water quality.	By project; By Plant (Morogoro only)	DAWASA; MORUWASA; Evaluation survey	DAWASA; MORUWASA; MCA-T; Social Impact	Quarterly	
	Outcome	Coliform Microbial Density (per 100 milliliters)	Number	Test of water contamination in which the number of the colonies of fecal coliform-bacteria per 100 milliliter of water. The result is expressed as 'Coliform Microbial Density' and indicates the extent of fecal matter present in it. This data will be collected at the household level and reported as an average across the household sample.	By project; By location: plant and point of use	Evaluation survey	Social Impact	Baseline and Endline	The endline will most likely be 2015
	Outcome	Free Chlorine Residual	Mg/L	Chlorine, measured by milligrams per liter of water, available to inactivate disease-causing organisms, and thus a measure to determine the potability of water. This would be measured at both the service delivery site (plant) and point of use (pipe and household storage)	By project; By location: plant	MORUWASA/DAWASA monthly reporting template	MORUWASA and DAWASA	Quarterly	

WS-15	Outcome	Volume of commercial water consumption	cubic/meters per month	Average monthly volume of commercial water consumption for past quarter (For Lower Ruvu: definition includes residential apartment buildings)	By project	DAWASA; MORUWASA	DAWASA; MORUWASA; MCA-T	Quarterly	
WS-14	Outcome	Volume of residential water consumption	liters/capita per day	Average monthly volume of residential water consumption for past quarter (For Lower Ruvu: definition excludes residential apartment buildings)	By project	DAWASA; MORUWASA	DAWASA; MORUWASA; MCA-T	Quarterly	
	Output	Schedule of Performance Index	Ratio	Ratio of Earned Value on construction contracts (actual progress made in US$ terms) to Planned Value (planned progress in US$) according to an agreed construction schedule.	By project	DAWASA; MORUWASA	DAWASA; MORUWASA; MCA-T	Quarterly	A typical measure of progress made and status of implementation for the Sector engineers. Allows us to understand if we are on schedule, and quantify how far off schedule if applicable.
WS-11	Output	Volume of water produced	Millions of liters per day (MLD)	Total volume of water produced by plant per day, averaged over the last quarter	By project; By plant	DAWASA; MORUWASA	DAWASA; MORUWASA; MCA-T	Quarterly	
WS-8	Output	Non-revenue water	Percentage	Total volume of piped water minus total volume of water billed divided by volume of water billed	By project	DAWASA; MORUWASA	DAWASA; MORUWASA; MCA-T	Quarterly	
WS-10	Output	Operating Cost Coverage	Ratio	Total revenue from operations in last quarter/ Routine and periodic operations and maintenance expenses in the last quarter	By project	DAWASA; MORUWASA	DAWASA; MORUWASA; MCA-T	Quarterly	
WS-5	Output	Total number of people temporarily employed/contracted by contractors	Number	The number of people (both local and foreigners) temporarily employed or contracted by MCA-contracted construction companies to work on construction of new water treatment plant or reconstruction, rehabilitation or upgrading of existing water systems (cumulative)		Morogoro: MORUWASA monthly reporting template Lower Ruvu: Consultant's Monthly Progress report	Morogoro: MCA-T Water Sector Consulting Engineer and MORUWASA; Lower Ruvu: MCA-T Water Sector Consulting Engineer and DAWASA; MCA-T	Quarterly	
	Process	Certificate for Environmental Impact Assessment (EIA) issued	Date	Date certificate for Environmental Impact Assessment (EIA) issued		MCA-T	MCA-T	Once	
WS-1	Process	Value of feasibility, design and supervision contracts	US Dollars	Total value of feasibility, design, and supervision contracts for rehabilitation, reconstruction and expansion of water treatment plants signed. Combined for Lower Ruvu and Morogoro.		Original Water Sector Contracts; EPICOR	MCA-T (Water Sector)	Quarterly	

WS-2	Process	Value disbursed of feasibility, design, and supervision contracts	US Dollars	Total value disbursed of feasibility, design, and supervision contracts for rehabilitation, reconstruction and expansion of water treatment plants signed. Combined for Lower Ruvu and Morogoro.		EPICOR	MCA-T	Quarterly	
WS-3	Process	Value of construction contracts	US Dollars	Total value of construction contracts for rehabilitation, reconstruction and expansion of water treatment plants signed	By project	Original Water Sector Contracts; EPICOR	MCA-T (Water Sector)	Quarterly	
WS-4	Process	Value disbursed of construction contracts	US Dollars	Total value disbursed of construction contracts for rehabilitation, reconstruction and expansion of water treatment plants signed	By project	EPICOR	MCA-T	Quarterly	

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Annex II: Table of Water Indicator Baselines and Targets

Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (2008)	Year 1 Oct 08 - Sept 09	Year 2 Oct 09 - Sept 10	Year 3 Oct 10 - Sept 11	Year 4 Oct 11 - Sept 12	Year 5 Oct 12 - Sept 13	End of Compact Target
Water Project										
Activity 1 & 2: Lower Ruvu and Morogoro										
Goal	Average annual household income per capita	US Dollars	Level	$339 (Lower Ruvu)						N/A (Lower Ruvu)
				$773 (Morogoro)						N/A (Morogoro)
Objective	Average current value of household assets per capita	US Dollars	Level	$6780 USD (Lower Ruvu) (2007)						N/A (Lower Ruvu)
				$1990 USD (Morogoro) (2007)						N/A (Morogoro)
Objective	Average Net Business Income (Profit)	US Dollars	Level	N/A (Lower Ruvu)						N/A (Lower Ruvu)
				N/A (Morogoro)						N/A (Morogoro)
Objective	Under 5 mortality rate	Rate	Level	Male: 97 Female: 88 (2010)						Male and Female: 79
Objective	Adult mortality rate	Rate	Level	Male: 5.0 Female: 5.1 (2010)						Male and Female: 2.6
Objective	Incidence of diarrhea	Percentage	Level	Alll: 0.87% (Lower Ruvu; 2007)						N/A (Lower Ruvu)
				All: 2.64% (Morogoro; 2007)						N/A (Morogoro)
Objective	Average hours worked last week	Hours	Level	68.74 (Lower Ruvu;2010)						N/A (Lower Ruvu)
				55.91 (Morogoro; 2010)						N/A (Morogoro)
Objective	Percentage of children who missed any school in the last 4 weeks	Percentage	Level	Lower Ruvu: Male: 8.74% Female: 10.07%						N/A (Lower Ruvu)
				Morogoro: Male: 11.66% Female: 17.00%						N/A (Morogoro)
Objective	Average time spent fetching water from home in last week	Minutes	Level	14.4 (Lower Ruvu; 2007);						N/A (Lower Ruvu)
				19.1 (Morogoro; 2007)						N/A (Morogoro)

Outcome	Total number of current customers	Number	Cumulative	63, 370 (Lower Ruvu - domestic)						N/A (Lower Ruvu - domestic)
				5,560 (Lower Ruvu - non-domestic)						N/A (Lower Ruvu - non-domestic)
				18,303 (Morogoro - domestic)						N/A (Morogoro - domestic)
				1,185 (Morogoro- non-domestic)						N/A (Morogoro - non-domestic)
Outcome	Proportion of non-active customers	Percentage	Level	42.34% (Lower Ruvu)						N/A (Lower Ruvu)
				16.96% (Morogoro)						N/A (Morogoro)
Outcome	Percentage of households with access to improved water supply	Percentage	Level	20.1% (urban) (2010)						N/A
Outcome	Continuity of service	Hours	Level	N/A (Lower Ruvu - dry) N/A (Lower Ruvu - wet)						N/A (Lower Ruvu)
				N/A (Morogoro - dry) N/A (Morogoro - wet) 16 (Morogoro - both)						N/A (Morogoro)
Outcome	Nephelometric turbidity units	NTU	Level	10 (Lower Ruvu)						1 (Lower Ruvu)
				9.4 (Morogoro - Mafiga) 5.3 (Morogoro - Mambogo)						1 (Morogoro - Mafiga and Mambogo)
Outcome	Coliform Microbial Density (per 100 millileters)	Number of colonies	Level	N/A (Lower Ruvu - Plant) N/A (Lower Ruvu - Point of end use)						0 (Lower Ruvu - Plant) 0 (Lower Ruvu - Point of end use)
				N/A (Morogoro - Mafiga Plant) N/A (Morogoro Mambogo Plant) N/A (Morogoro - Point of end use						0 (Morogoro - Mafiga Plant and Mambogo Plant) 0 (Morogoro - Point of end use
Outcome	Free Chlorine Residual	Mg/L	Level	0.2 (Lower Ruvu)						0.2 (Lower Ruvu)
				Morogoro: Mafiga: 1.0 Mambogo: 0.7						Morogoro: Mafiga: 0.2 Mambogo: 0.2
Outcome	Volume of commercial water consumption	cubic meters per month	Level	596,233 (Lower Ruvu)						N/A (Lower Ruvu)
				36,708 (Morogoro)						N/A (Morogoro)

Outcome	Volume of residential water consumption	liters/capita per day	Level	116 (Lower Ruvu)						150 (Lower Ruvu)
				98 (Morogoro)						150 (Morogoro)
Output	Schedule of Performance Index	Ratio	Level	N/A (Lower Ruvu)	N/A	N/A	N/A	0.90	1.00	1.00
				N/A (Morogoro)	N/A	N/A	N/A	0.90	1.00	1.00
Output	Volume of water produced	Millions of liters per day (MLD)	Level	180 (Lower Ruvu)						270 (Lower Ruvu)
				19 (Morogoro - Mafiga) 4 (Morogoro - Mambogo)						27 (Morogoro - Mafiga) 6 (Morogoro - Mambogo)
Output	Non-revenue water	Percentage	Level	68% (Lower Ruvu)						56% (Lower Ruvu)
				40% (Morogoro)						32% (Morogoro)
Output	Operating Cost Coverage	Percentage	Level	108% (Lower Ruvu)	N/A	118%	133%	146%	151%	151%
				100% (Morogoro)	N/A	100%	109%		115%	115%
Output	Total number of people temporarily employed/contracted by contractors	Number	Cumulative	0 (Lower Ruvu and Morogoro)						N/A (Lower Ruvu)
										N/A (Morogoro)
Process	Certificate for Environmental Impact Assessment (EIA) issued	Date	Date	N/A	N/A	8-Jan-10				8-Jan-10
Process	Value of feasibility, design, and supervision contracts	US Dollars	Cumulative	0						$ 6,590,491
Process	Value disbursed of feasibility, design, and supervision contracts	US Dollars	Cumulative	0	0	$ 956,170	$ 1,912,339	N/A	N/A	$ 8,866,800
Process	Value of construction contracts	US Dollars	Cumulative	0 (Lower Ruvu and Morogoro)						Lower Ruvu: $36,880,012 Morogoro: $8,316,144
Process	Value disbursed of construction contracts	US Dollars	Cumulative	0 (Lower Ruvu)	0	$ -	$ 8,774,465	$ 21,345,602	$ 36,940,012	$ 36,940,012
				0 (Morogoro)	0	$ -	$ 2,312,568	$ 6,719,484	$ 10,714,236	$ 10,714,236

ANNEX III: 2013 INDICATOR MODIFICATION MEMO – TRANSPORT SECTOR PROJECT

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Mainland Trunk Roads Pemba Rural Roads Mafia Airport Upgrade		All Goal and Objective level indicators			We recommend *revising* the frequency of reporting	Previously, the frequency of reporting for high level indicators varied between "Year: 4,5" and "Year 5". Given that most of the data for these indicators comes from evaluation surveys and the follow-up surveys will take place after the compact closes, these frequencies are not accurate and should be revised. **Frequency of reporting:** Baseline and Endline
Activities 1 & 2: Mainland and Pemba Roads. Goal Level Indicators						
Mainland Pemba		Average annual household income per capita	US $	Average of the total household income divided by total number of household members for all households in the survey sample	We recommend *revising* the definition and disaggregation and *updating* baseline and target values	The 2012 M&E Plan Annex I disaggregated the indicator by Project but this was not addressed in the Annex II and the ITT. However, discussions with M&E team and Sector leads revealed that disaggregating this indicator by Region makes more sense than by Project, so the disaggregation should be revised and baseline and target figures should be updated accordingly. The indicator definition should also be clarified to specify that it includes all sources of income. **Definition:** Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample **Disaggregation**: Region (where transport

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						project being implemented) **Baseline values:** Tanga: 353.22 Mbeya 388.19 Rukwa: 340.57 Ruvuma: 421.94 Source: NBS National Accounts of Tanzania Mainland (2000 – 2010); September 2011 Pemba: Not available Zanzibar: 216.34 Note: Disaggregated data for Pemba island alone was not available, therefore the baseline for Zanzibar as a whole has been provided. Source: HBS 2009 – 2010, Chief Government Statistician Zanzibar **Target values:** Tanga: Not applicable Mbeya: Not applicable Rukwa: Not applicable Ruvuma: Not applicable Pemba: Not applicable Note: No targets set for this indicator.
Activities 1 & 2: Mainland and Pemba Roads. Objective Level Indicators						
Mainland Pemba		Average time to market from home Average time to medical facilities			We recommend *revising* the disaggregation for all THREE indicators	Annex I of the 2012 M&E Plan had incorrectly documented the disaggregation as "region" instead of Mainland/Pemba, as it had been documented in Annex II. Since Annex II was correct, baselines and targets do not need to be

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
		Number of stand alone businesses				updated, only the disaggregation noted in Annex I. **Disaggregation**: Mainland/Pemba
Mainland Pemba		Average annual household cash crop revenue	US Dollars	Average total value of cash crops sold in last year per household for all households	We recommend *updating* the target from TBD	All TBD values should be updated in the final M&E Plan revision. **Target values:** Mainland: Not available Pemba: Not available Note: Though cash crop revenue is a benefit stream in the ERR, an ERR-based target could not be established.
Mainland Pemba		Percentage of households with income generating activities (IGA)	Percentage	Percentage of households which report they have operated an income generating activity out of their household in the last 12 months	We recommend *revising* the disaggregation as well as the baselines and targets to reflect the disaggregation	Annex I of the 2012 M&E Plan had incorrectly documented the disaggregation as "region" instead of Mainland/Pemba and no disaggregation was reflected in Annex II baselines and targets. These errors should be addressed. **Disaggregation**: By Mainland/Pemba; By gender **Baseline values:** *Mainland*: Male and Female: Not available Note: This indicator was not collected in the Mainland survey of the EDI Transport Baseline Study and no other data sources could be identified.

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Pemba: Male: 13.16% Female: 1.92% Source: EDI Transport Mainland/Pemba Baseline Study, 2009 **Target values:** *Mainland:* Male and Female: Not applicable *Pemba:* Male and Female: Not applicable Note: No targets set for this indicator
Mainland Pemba		Average hours worked in the last week	Hours	Hours worked in the last week for individuals 15-60 years old	We recommend *updating* baseline and target figures and *revising* the definition and disaggregation	The 2012 M&E Plan Annex I suggested a disaggregation of the indicator by region and gender, however it should have been by Mainland/Pemba and gender, similar to the other Objective level indicators. In addition, Annex II and the ITT did not disaggregate as required. Baseline and target figures must therefore be updated with the new disaggregation. The original baseline source listed in the 2012 Plan could not be found again during this revision to update baseline values, therefore baseline data is no longer available for Mainland. The previous aggregate baseline value reported had incorrectly included Mtwara region in the underlying calculation, so it could not be reported as a supplement to N/A regional disaggregated figures. (Note: Though one of the roads projects is referred to as the Mtwara Corridor, the roads themselves are not in Mtwara region

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						and simply link to Mtwara roads). Finally, the definition could benefit from more clarity to explain what is reported. **Definition:** Hours worked in the last week in an enterprise for individuals 15-60 years old **Disaggregation**: By Mainland/Pemba; By Gender **Baseline values:** *Mainland*: Male: Not available Female: Not available Note: This indicator was not collected in the Mainland EDI Baseline, 2009 and no other data source could be identified. *Pemba*: Male: Not available Female: Not available All: 32.22 Note: Unable to disaggregate by gender from EDI survey. Source: Pemba EDI Baseline, 2009 **Target values:** *Mainland and Pemba:* Male; Not applicable Female; Not applicable Note: No targets set for this indicator

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Mainland Pemba		Percentage of children who missed any school in the last 4 weeks	Percentage	Percentage of school children who missed any in the last 4 weeks.	We recommend *revising* definition and disaggregation, *updating* baseline and target values, and *documenting* the removal of Mtwara region	The 2012 M&E Plan definition for this indicator does not mention the type of school that should be included and should therefore be updated in this revision. In addition, the disaggregation was incorrectly recorded as "region" instead of "Mainland/Pemba", like the other Objective level indicators. The baselines and targets in Annex II should be updated in accordance with the new disaggregation and to remove TBDs. In addition, previous versions of the M&E Plan had incorrectly included data on Mtwara region in baseline calculations, so the region was removed during this revision. The baseline statistics from the HBS 2007 in the previous M&E Plan were calculated incorrectly, therefore the updated baseline values are much lower. **Definition**: Percentage of surveyed school children (Primary/Secondary) who missed any school in the last 4 weeks due to illness or injury **Disaggregation**: Mainland/Pemba **Baseline values**: *Mainland*: 14.86% Calculated as the average of: Mbeya: 14.80% Tanga: 18.25% Rukwa: 14.53% Ruvuma: 11.86%

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Source: HBS 2007 *Pemba*: Zanzibar: 5.03% Note: Data for Pemba alone is not available, therefore Zanzibar-wide data is provided. Source: HBS 2009-10 **Target values:** Mainland: Not applicable Pemba: Not applicable Note: No targets set for this indicator
Mainland Pemba		Average days of school missed for school age children in the last 4 weeks	Days	Average days of school missed for school age children in the last 4 weeks	We recommend *revising* the disaggregation and primary data source and *updating* baselines and targets accordingly	Annex I of the 2012 M&E Plan had incorrectly documented the disaggregation as "region" instead of Mainland/Pemba. This disaggregation should be updated to accompany the gender disaggregation and baselines and targets in Annex II should be revised accordingly. The Primary Data Source was previously listed as "LSMS 2010 and Household Survey", but it is not clear which survey LSMS refers to. In addition, no baseline values were provided for this indicator in Annex II, so it is not clear why the LSMS was listed as a source. LSMS should be removed as a source because any reporting on this indicator will come from evaluation surveys. **Disaggregation**: By Mainland/Pemba; By gender

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Baseline values: *Mainland and Pemba:* Male: Not available Female: Not available Note: This was not captured in the EDI Transport Mainland/Pemba Baseline Study, 2009 and no other data source could be identified **Target values:** *Mainland and Pemba:* Male: Not available Female: Not available Note: No targets set for this indicator **Primary Data Source**: Household Survey
Activities 1&2: Mainland and Pemba Roads. Outcome Level Indicators						
Mainland Pemba		International Roughness Index (IRI)	m/km	Weighted Index to measure road roughness (correlated with transport costs) disaggregated by road segment. The measure of the roughness of the road surface, in meters of height per kilometer of distance traveled.	We recommend *updating* the data source	The source for this indicator was incorrectly listed as "Evaluation Survey by MCA-T". There are no plans for MCA-T to collect this information, however TANROADS has plans to do so and has been provided with the necessary equipment to do so through the Road Maintenance Activity of the Compact. The data source should therefore be updated. **Primary Data Source**: TANROADS reporting **Responsible Party**: TANROADS; MCA-T

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Mainland Pemba		Average Annual Daily Traffic	Number	Average number of vehicles on upgraded roads annually. 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	We recommend *revising* the indicator definition, disaggregation, and primary data source, and *documenting* the source of baselines and targets in a note	Annex I of the 2012 M&E Plan had incorrectly documented the disaggregation as "region" instead of "road project" and should be revised. The only firm source of data on traffic counts for the upgraded project roads is the Traffic Count Survey, which has been contracted by MCA-T M&E for June 2013, so the Primary Data Source should be changed to this study. While this indicator is aligned with the common transport indicator (R-10), the data collection method differs slightly from what is implied by the original common indicator definition, therefore the current indicator definition must be revised. **Definition**: Average number of vehicles per day on upgraded roads. This indicator is based on traffic count data collected over at least a 7-day period (day and night) once per year, and relies on modeling to account for seasonal variation in traffic patterns. Overall, the indicator estimates an annual daily average. **Disaggregation:** By Road Project **Primary Data Source**: MCA-T Traffic Count Survey (2013) Note: Tunduma-Sumbawanga road and Pemba roads will not be included in this survey, but they remain in the ITT in case another data source can be identified post-Compact.

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Note: Baselines and targets are reported from TANROADS in accordance with the revised 2013 indicator definition.
Activities 1&2: Mainland and Pemba Roads, Output Level Indicators						
Mainland Pemba		Schedule of Performance Ratio	Ratio	This is the ratio of Earned Value (actual progress made in US$ terms) to Planned Value (planned progress in US$) according to an agreed construction schedule	We recommend *revising* the indicator name, definition, and year 5 target	This indicator is a standard performance measure known as SPI (Schedule of Performance Index), but was incorrectly recorded as Schedule of Performance Ratio in the 2012 M&E Plan. The indicator name should be updated, therefore. In addition, the definition could benefit from more clarity and should be revised. Finally, the Year 5 target should be revised to align with the End of Compact target, as they should be the same. **Name**: Schedule of Performance Index **Definition**: Ratio of Earned Value on construction contracts (actual progress made in US$ terms) to Planned Value (planned progress in US$) according to an agreed construction schedule. **Year 5 target**: 1.0
Mainland Pemba		Percentage of base completed Percentage of surfacing completed			We recommend *revising* the disaggregation for all indicators	Annex I of the 2012 M&E Plan had incorrectly documented the disaggregation as "region" instead of "road project". **Disaggregation:** Road Project
Mainland		Total km of roads	Kilometers	Kilometer of road	We recommend	In the 2012 M&E Plan Annex I required

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Pemba		completed (taken over)		upgraded/ completed. The length of roads in kilometers on which construction of new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads is complete (certificates handed over and approved).	*revising* the disaggregation and target values	disaggregation of this indicator by region, but the ITT disaggregated the indicator by road project. Road project disaggregation is more appropriate since at least one project covers more than one region and so the disaggregation should be revised. In addition, the previous target value for Tunduma-Sumbawanga road was incorrect and should be updated. **Disaggregation**: Road project **Target values:** Tanga – Horohoro: 65.00 Peramiho – Mbinga: 78.00 Namtumbo – Songea: 67.00 Tunduma – Sumbawanga: 223.20 Pemba Rural Roads: 35.00 Source: MCA-T Compact document
Mainland Pemba		Percentage of total maintenance budget spent	Percentage	Amount spent on maintenance in the last year/amount budgeted for maintenance in the last year	We recommend *revising* the indicator name and definition, *adding* a disaggregation by Mainland and Zanzibar, and *updating* baseline and target values accordingly	The previous indicator name and definition were not clear and therefore need to be revised. In addition, road maintenance for Mainland and Zanzibar roads are handled separately by different entities, therefore this indicator should be disaggregated by the two project areas and the baselines and targets should be updated accordingly. In addition, the baseline and annual previously recorded in Annex II were not correct. **Name**: Percentage of annual roads maintenance budget spent

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Definition: Total amount of Government of Tanzania (GoT) funds spent for roads maintenance activities in the last year divided by the total amount budgeted for roads maintenance in that year, multiplied by 100. Reported each October of the year. **Disaggregation**: Project area (Mainland, Zanzibar) Note: The disaggregation is for Zanzibar as a whole and not Pemba, because the road maintenance fund is at the Zanzibar government level. **Baseline values:** Mainland: 79% Zanzibar: 75% Source: TANROADS (Mainland) & MoIC (Zanzibar) **Target values:** Mainland: 95% Y1: N/A Y2: 82% Y3: 86% Y4: 90% Y5: 95% Zanzibar: 95% Y1: N/A Y2: 80% Y3: 85%

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Y4: 90% Y5: 95% Source: TANROADS (Mainland) & MoIC (Zanzibar)
Mainland Pemba		Total number of people temporarily employed/contracted by contractors	Number	The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads (cumulative)	We recommend *revising* the indicator name, definition, and classification, *adding* a disaggregation, and *updating* the end of Compact target	In reviewing reporting on this indicator, it was determined that the implementing entity was unable to report the cumulative number of unique people employed, as required by the common indicator definition. Therefore, the name, definition, and classification must be revised to reflect the data that is actually being reported. In addition, the 2012 target used for this indicator was the actual value at the time that the 2012 M&E Plan was developed, which is not appropriate. This indicator does not require setting a target, therefore the targets should be updated to Not Applicable. Finally, for the Mainland and Pemba Roads Project, this indicator should be disaggregated by Mainland/Pemba since the works are happening separately (this was already reflected in Annex II). **Name**: Number of people temporarily employed/contracted by contractors **Definition**: The maximum number of people, reported at any one time over the quarter that were temporarily employed or contracted by MCA-contracted construction companies to work on road/runway construction or

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						upgrading (both local and foreigners). Monthly actuals of the number of people employed at time of reporting are provided to MCA-T and the highest of the three figures is reported in the ITT. Note: This indicator is challenging in both its calculation and interpretation. Since the responsible party was unable to calculate the figure as required by the common indicator definition, the next best approach was to report a level indicator rather than cumulative. The maximum number of employees over a given quarter was chosen in to give a sense of the scope of employment. There is no way of knowing the number of unique individuals employed over the Compact or quarter-to-quarter. **Classification**: Level **Disaggregation**: Mainland/Pemba **Target values:** Mainland (Male & Female): Not Applicable Pemba (Male & Female): Not Applicable Mafia(Male & Female): Not Applicable Note: No target set for this indicator
Mainland Pemba		Total hours of training delivered to implementing entities	Hours	Hours of training delivered to implementing entities to date (cumulative)	We recommend *removing* this indicator	The Transport Sector confirmed that they did not plan any training for implementing entities. Therefore, this indicator should be removed.

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Activities 1&2: Mainland and Pemba Roads, Process Level Indicators						
Mainland Pemba		Value of feasibility and design contracts	US $	Total value of feasibility and design contracts	We recommend *revising* the indicator name, definition, and classification, and *updating* baseline and target figures in accordance with project disaggregation	MCA-T had not been tracking supervision contracts in the Transport Sector project, but should have been to be consistent with common indicators. The indicator name and definition should be updated to reflect the inclusion of supervision. The previous definition did not make it clear that it included contracts financed both by 609g and Compact funds, so it should be revised. In addition, the 2012 M&E Plan called for disaggregation of this indicator by Mainland and Pemba, but baseline and target figures were not disaggregated previously. Finally, the indicator classification should be corrected to be Cumulative instead of Level, since the ITT should report the current contract value including any modifications. **Name**: Value of feasibility, design, and supervision contracts **Definition:** Total value of feasibility, design, and supervision contracts (financed through 609g and Compact funds) **Disaggregation**: Project area (Mainland, Pemba) **Classification**: Cumulative **Baseline values:**

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Mainland: 0.00 Pemba: 0.00 Source: Not Applicable **Target values:** Mainland: $ 13,751,825 Pemba: $ 1,841,600 Source: Original Transport Sector contract documents prior to any modifications
Mainland Pemba		Value disbursed of feasibility and design contracts	US $	Value disbursed of feasibility and design contracts to date (cumulative)	We recommend *adding* a disaggregation, *updating* baseline and target figures, and *revising* indicator name and definition	MCA-T had not been tracking supervision contracts in the Transport Sector project, but should have been to be consistent with common indicators. The indicator name and definition should be updated to reflect the inclusion of supervision. The 2012 M&E Plan did not mention disaggregation of the indicator by Project area, like for the previous contract value indicator, therefore this disaggregation should be added and baseline and target should be updated accordingly. In addition, the target for this indicator should be the most current contract value, so targets should be updated to reflect any contract modifications. **Name:** Value disbursed of feasibility, design, and supervision contracts **Definition:** Value disbursed of feasibility, design, and supervision contracts to date (cumulative) (financed through 609g and Compact funds).

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Disaggregation: Project area (Mainland, Pemba) **Baseline values:** Mainland: 0.00 Pemba: 0.00 Source: Not Applicable **Target values:** Mainland (Y5): $ 17,378,371.60 Mainland (Y4): $ 11,302,592.48 Pemba (Y5): $1,841,600.00 Pemba (Y4): $ 1,280,368.15 Source: Current Transport Sector contract documents (including any signed modifications)
Mainland Pemba		Value of Construction Contracts	US $	The value of all signed construction contracts for new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads using compact funds	We recommend *revising* the definition, classification, and targets	In the 2012 M&E Plan the Compact target for this indicator included both Compact and GoT counterpart funding, but the definition did not indicate this and therefore should be revised. In addition, previously, the target values reported for both Mainland and Pemba were lower than the actual amount for the signed contracts because the Mtwara corridor value was not included. Targets should therefore be revised. Finally, the indicator classification should be corrected to be Cumulative instead of Level, since the ITT should report the current contract value including any modifications. **Definition:** The value of all signed

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						construction contracts under the Compact (including Compact and GoT counterpart funding), for new roads or the reconstruction, rehabilitation, resurfacing or upgrading of existing roads **Classification**: Cumulative **Target values:** Mainland: $363,640,424 Pemba: $24,580,182 Source: Original Transport Sector contract documents prior to any modifications
Mainland Pemba		Value disbursed of construction contracts	US $	The value of all signed construction contracts for new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads using compact funds	We recommend *revising* the definition and targets	In the 2012 M&E Plan, the Compact target for this indicator included both MCC and GoT funding, but the definition did not indicate this and therefore should be revised. In addition, the targets should be revised to report the current contract value, including any modifications. **Definition:** The value disbursed of all signed construction contracts under the Compact (including Compact and GoT counterpart funding), for new roads or the reconstruction, rehabilitation, resurfacing or upgrading of existing roads **Target values:** Mainland: $374,455,179 Pemba: $24,580,182 Note: This is the End of compact/Year 5 target.

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Source: Current Transport Sector contract documents (including any signed modifications)
Mainland Pemba		Total km of road under design	Kilometers	The length of roads in kilometers under design contracts for construction of new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads.	We recommend *documenting* the disaggregation of this indicator in Annex I and *correcting* the name of the indicator in Annex II	The disaggregation of this indicator by Project was not documented in Annex I of the 2012 M&E Plan, therefore should be revised for documentation in Annex I. This indicator was also incorrectly named as "km of road under contract" in the previous Annex II. **Disaggregation**: Mainland/Pemba
Mainland Pemba		Kilometers of Roads under Works Contract	Kilometers	The length of roads in kilometers under works contracts for construction of new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads.	We recommend *documenting* why this common indicator is not included in the M&E Plan	This Transport Common Indicator (R-6) was not included in earlier versions of the M&E Plan, though it should have been. Given the following circumstances, it does not seem worthwhile to add this indicator to the M&E Plan: 1. There was not a significant deviation from the Km under design (R-3), which is already reported, and the Km under works. 2. The Km under works can be gleaned from the target of the Total Km Completed (R-9) indicator in the M&E Plan. Given that this final revision is taking place in Q19 of the Compact, adding this indicator now will be of little use to management.
Activity 3: Mafia Island, Goal Level Indicators						
Mafia		Average annual household income	US $	Average of the total household income	We recommend *revising* the	The 2012 M&E Plan Annex I disaggregated the indicator by Project but this was not

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
		per capita		divided by total number of household members for all households in the survey sample	definition and disaggregation and *updating* baseline and target values	addressed in the Annex II and the ITT. However, discussions with M&E team and Sector leads revealed that disaggregating this indicator by Region makes more sense than by Project, so the disaggregation should be revised and baseline and target figures should be updated accordingly. The indicator definition should also be clarified to specify that it includes all sources of income. **Definition:** Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample **Disaggregation**: Region (where transport project being implemented) **Baseline values:** Mafia: 452 Source: Mafia Airport Baseline Survey, 2012 **Target values:** Mafia: Not applicable Note: No targets set for this indicator.
Activity 3: Mafia Island, Objective Level Indicators						
Mafia		Average annual household income per capita	US $	Average of the total household income divided by total number of household members for all households in the survey sample	We recommend *revising* the definition and *updating* the baseline value	The indicator definition should be clarified to specify that it includes all sources of income. The baseline value can be updated with more reliable data from the Mafia Airport Baseline Survey.

Date 27.06.2013						
Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Definition: Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample **Baseline value:** Mafia: 452 Source: Mafia Airport Baseline Survey, 2012
Mafia		Annual aggregate visitor spending	US Dollars	Annual aggregate visitor spending	We recommend *updating* the indicator disaggregation and associated baselines and targets, and the Responsible Party from TBD	All TBD values should be updated in the final M&E Plan revision. This indicator was originally supposed to be disaggregated by season and visitor type; however the Evaluator did not disaggregate the data by visitor type, so this disaggregation should be removed. In addition, the original baseline reported was from the Compact, but it was not disaggregated by season, so the baseline value will be updated using season-disaggregated Evaluator data. **Disaggregation**: By season (wet/dry) **Baseline values:** Wet season: $1.02 Million Dry season: $2.28 Million Source: Mafia Airport Baseline, 2012 **Target values:** Wet season: Not available Dry season: Not available Both seasons: $4.2 Million Source: Tanzania Compact (2008)

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Transport Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Responsible Party: Evaluator
Mafia		Percentage of households with income generating activities (IGA)	Percentage	Percentage of households which report they have operated an income generating activity out of their household in the last 12 months	We recommend *updating* baseline figures to reflect gender disaggregation and to remove TBDs, and *updating* the Responsible Party from TBD	Despite the disaggregation of this indicator in the 2012 M&E Plan, the baseline figures were not disaggregated and therefore need to be updated. No targets were set for this indicator, so the disaggregation does not affect them. For previously TBD figures, baseline data from the Mafia Airport Performance Evaluation is now available to update the numbers. Since data for this indicator was collected by the Evaluator in the baseline study, the Evaluator is the responsible party for this indicator. **Baseline values:** Male: 47% Female: 53% Source: Mafia Airport Baseline Survey, 2012 **Responsible Party:** Evaluator
Mafia		Number of stand alone businesses	Number	Total number of enterprises (5 or more employees) located in community	We recommend *updating* baseline values and Responsible Party from TBD	TBD values should be updated in the final M&E Plan revision. **Responsible Party**: Evaluator **Baseline values:** Male-owned: 532 Female-owned: 425 Source: Mafia Airport Evaluation Baseline, 2012
Activity 3: Mafia Island, Outcome Level Indicators						

Mafia		Total annual passenger arrivals	Number	Annual passenger arrivals (reported quarterly cumulative)	We recommend *updating* the indicator definition and baseline figure and *removing* the disaggregation by visitor category and season	The previous indicator definition did not clearly explain the method of calculation and therefore needs to be updated. The 2012 Annex II stated a baseline figure of 12,000, which was established to be incorrect after subsequent discussions with TAA during the May 2012 Capacity Building workshop, and so should be updated. In addition, it was established that TAA cannot disaggregate arrivals by visitor category (business, tourism, family/friends), therefore this disaggregation should be removed. The season (wet/dry) disaggregation was also removed because the data is reported quarterly and therefore the seasonal changes in passenger arrivals can be extrapolated. **Definition**: Total passenger arrivals, reported cumulatively each quarter within one year. The figures are only cumulative for a one year period, therefore the base value resets to 0 after the end of each calendar year. **Baseline value:** 8,526 Source: TAA
Activity 3: Mafia Island, Output Level Indicators						
Mafia		Total hours of training delivered to implementing entities	Hours	Hours of training delivered to implementing entities to date (cumulative)	We recommend *removing* this indicator	The Transport Sector confirmed that they did not plan any training for implementing entities. Therefore, this indicator should be removed.
Mafia		Total number of people temporarily employed/contracted by contractors	Number	The number of people temporarily employed or contracted by MCA-contracted construction companies to work on	We recommend *revising* the indicator name, definition, and classification,	In reviewing reporting on this indicator, it was determined that the implementing entity was unable to report the cumulative number of unique people employed, as required by the common indicator definition. Therefore, the

				construction of new roads or reconstruction, rehabilitation, resurfacing or upgrading of existing roads (cumulative)	*adding* a disaggregation, and *updating* the end of Compact target	name, definition, and classification must be revised to reflect the data that is actually being reported. In addition, the 2012 target used for this indicator was the actual value at the time that the 2012 M&E Plan was developed, which is not appropriate. This indicator does not require setting a target, therefore the targets should be updated to Not Applicable. Finally, for the Mainland and Pemba Roads Project, this indicator should be disaggregated by Mainland/Pemba since the works are happening separately (this was already reflected in Annex II). **Name**: Number of people temporarily employed/contracted by contractors **Definition**: The maximum number of people, reported at any one time over the quarter that were temporarily employed or contracted by MCA-contracted construction companies to work on road/runway construction or upgrading (both local and foreigners). Monthly actuals of the number of people employed at time of reporting are provided to MCA-T and the highest of the three figures is reported in the ITT. Note: This indicator is challenging in both its calculation and interpretation. Since the responsible party was unable to calculate the figure as required by the common indicator definition, the next best approach was to report a level indicator rather than cumulative. The maximum number of employees over a given quarter was chosen in to give a sense of the

						scope of employment. There is no way of knowing the number of unique individuals employed over the Compact or quarter-to-quarter. **Classification**: Level **Disaggregation**: Mainland/Pemba **Target values:** Mainland (Male & Female): Not Applicable Pemba (Male & Female): Not Applicable Mafia(Male & Female): Not Applicable Note: No target set for this indicator
Activity 3: Mafia Island, Process Level Indicators						
Mafia		Value of design and supervision contracts	US $	Total value of construction contracts	We recommend *revising* the definition, classification, and target	The 2012 M&E Plan definition and target of this indicator were incorrect and therefore should be revised. In addition, the indicator classification should be corrected to be Cumulative instead of Level, since the ITT should report the current contract value including any modifications. **Definition**: Total value of design and supervision contracts. Note: No new feasibility study was conducted, therefore this indicator is only for design and supervision contract values. **Classification**: Cumulative **Target value**: $1,800,000 Note: This value includes the design contract ($300,000) and supervision contract ($1,500,000)

						Source: Original Mafia Airport Project design and supervision contracts, prior to any modifications
		Value disbursed of design and supervision contracts	US $	Value disbursed of construction contracts to date (cumulative)	We recommend *revising* the definition	The 2012 M&E Plan definition of this indicator was incorrect and therefore should be revised. **Definition**: Total value disbursed of design and supervision contracts. Note: No new feasibility study was conducted, therefore this indicator is only for design and supervision contract values. **Target value**: $2,098,720 Note: This value includes an increase to the supervision contract of $298,720. It is the End of Compact/Year 5 target. Source: Current Mafia Airport Project design and supervision contracts, including any signed modifications
Mafia		Value of construction contracts	US $	Total value of construction contracts	We recommend *revising* the definition, classification, and target	In the 2012 M&E Plan, the Compact target for this indicator included both MCC and GoT funding, but the definition did not indicate this and therefore should be revised The indicator classification should be corrected to be Cumulative instead of Level, since the ITT should report the current contract value including any modifications. In addition, the target previously reported in Annex II were incorrect and should also be revised. **Definition**: Total value of construction contracts (including Compact and GoT counterpart funding) **Classification**: Cumulative

						Target value: $10,177,631 Source: Original Transport Sector contract documents prior to any modifications
		Value of construction contract disbursed contracts	US $	Value disbursed of construction contracts to date (cumulative)	We recommend *revising* the definition and target	In the 2012 M&E Plan, the Compact target for this indicator included both MCC and GoT funding, but the definition did not indicate this and therefore should be revised. The target previously reported in Annex II was incorrect and should also be revised. **Definition**: Value disbursed of construction contracts to date (including Compact and GoT counterpart funding) **Target value:** $10,177,631 Note: This is the End of compact/Year 5 target. Source: Current Transport Sector contract documents (including any signed modifications)

ANNEX III: INDICATOR MODIFICATION MEMO – ENERGY SECTOR PROJECT

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Goal Level Indicators						
Mainland (+ Kigoma) T&D Zanzibar Kigoma Solar		Average annual household income per capita	US$	Average of the total household income divided by total number of household members for all households in the survey sample	We recommend *updating* the data source and the baselines figures (to reflect regional disaggregation for Mainland and general update for Zanzibar and Kigoma Solar) and *revising* the definition	This indicator was disaggregated by region in the April 2012 M&E Plan, however disaggregated baseline figures had not been provided. Now that regionally disaggregated data is available from baseline surveys, the baseline figures can be updated. The data sources should be clarified for each of the projects. In addition, the previous indicator definition did not clearly state that all sources of income were to be included, therefore it should be modified. **Definition:** Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample **Baseline values:** *Mainland T&D:* Morogoro: 338 Tanga: 307 Iringa: 522 Mbeya: 603 Dodoma: 281 Mwanza: 446

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Source: MPR/NRECA T&D Baseline Survey, 2011 *Kigoma T&D*: Kigoma: 246 Source: NBS - National Accounts of Tanzania Mainland (2000 – 2010); September 2011 *Zanzibar Cable:* Zanzibar: 216.34 Note: Household income not collected in the 2010 MPR Zanzibar Hotel Survey, but may be collected in the follow-up. Though the Zanzibar Cable project was not necessarily designed to impact household income, we will still monitor this indicator to note changes in trends. Source: HBS 2009 – 2010 (Chief Government Statistician Zanzibar) *Kigoma Solar:* Kigoma: 246 Source: NBS - National Accounts of Tanzania Mainland (2000 – 2010); September 2011 **Primary Data Source:** Mainland: Household Survey Zanzibar: Evaluation Survey Kigoma Solar: Evaluation Survey

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Responsible Party: Mainland: Mathematica Zanzibar: Mathematica Kigoma Solar: Evaluator
Objective Level Indicators						
Mainland (+Kigoma) T&D, Zanzibar, Kigoma Solar		Average annual business revenue	US $	Average annual business revenue for household income generating activities and enterprises in survey (Mainland T&D); Average annual business revenue of hotels in survey (Zanzibar); Average annual business revenue (Kigoma Solar)	We recommend *updating* baseline values from TBD	Data from baseline surveys is now available to update baseline numbers. **Baseline values:** *Mainland T&D*: Morogoro: 513.22 Tanga: 643.97 Iringa: 922.65 Mbeya: 982.52 Dodoma: 622.78 Mwanza: 1221.51 Source: MPR/NRECA T&D Baseline Survey, 2011 *Kigoma T&D:* Kigoma: Not available Note: Kigoma region not captured in the 2011 MPR/NRECA baseline study. *Zanzibar Cable:* Zanzibar: Not available Note: Indicator not captured in MPR Baseline Hotel Survey, 2010

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Kigoma Solar: Kigoma: Not available Note: Baseline data for this project not yet available at time of final M&E plan revision.
Mainland (+Kigoma) T&D, Zanzibar, Kigoma Solar		Average annual wages	US $	Average annual wages for household income generating activities and enterprises in survey (Mainland T&D); Average annual wages of hotels in survey (Zanzibar); Average annual wages(Kigoma Solar)	We recommend *updating* baseline values from TBD and the Responsible Party for Kigoma Solar only	Baseline figures should be changed from TBD to N/A because no data is available to estimate these values. The responsible party for the Kigoma Solar indicator should be updated to reflect a change in evaluation plans. **Baseline values:** *Mainland T&D:* Morogoro: Not available Tanga: Not available Iringa: Not available Mbeya: Not available Dodoma: Not available Mwanza: Not available Note: The 2011 MPR/NRECA T&D Baseline question intended to capture this indicator did not generate adequate data to compute it. No other data source could be identified. *Kigoma T&D:* Kigoma: Not available Note: Kigoma region not captured in 2011 MPR/NRECA T&D Baseline.

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Zanzibar Cable: Zanzibar: Not available Note: Indicator not captured in 2010 MPR Hotel Baseline. *Kigoma Solar:* Kigoma: Not available Note: Baseline data for this project not yet available at time of final M&E plan revision. **Responsible Party (Kigoma Solar only)**: Evaluator (Individual consultant)
Mainland (+Kigoma) T&D, Zanzibar, Kigoma Solar		Average annual expenditure on energy	US $	Average annual expenditure on energy for household income generating activities and enterprises in survey (Mainland T&D) Average annual expenditure on energy of hotels in survey (Zanzibar) Average annual expenditure on energy(Kigoma Solar)	We recommend *updating* baseline values from TBD and *revising* the Responsible Party	Data from baseline surveys is now available to update baseline values. The responsible party for the Kigoma Solar indicator should be updated to reflect a change in evaluation plans. **Baseline values:** *Mainland T&D:* Morogoro: 260.15 Tanga: 216.66 Iringa: 201.33 Mbeya: 197.79 Dodoma: 140.40 Mwanza: 246.69 Source: MPR/NRECA T&D Baseline Survey, 2011 *Kigoma T&D:*

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Kigoma: Not available Note: Kigoma region not captured in 2011 MPR/NRECA T&D Baseline *Zanzibar Cable:* Zanzibar: Not available Note: Indicator not captured in 2010 MPR Hotel Baseline *Kigoma Solar:* Kigoma: Not available Note: Baseline data for this project not yet available at time of final M&E plan revision **Responsible Party (Kigoma Solar only)**: Evaluator (Individual consultant)
Mainland (+Kigoma) T&D		Percentage of population with indoor air pollution related illness	Percentage	Percentage of population with indoor air pollution related illness (Disaggregation: By gender; By age: under age 5/ age 5 – 18/ Adults over 18 years of age; By respiratory and vision symptoms)	We recommend *updating* baseline values from TBD	Data from baseline surveys is now available to update baseline numbers. The baseline survey did not collect data that was disaggregated as prescribed by the ITT, but this will be addressed in the follow-up survey. Where disaggregated figures were not available, available aggregate values have been provided. **Baseline values*:** Respiratory Symptoms: Male under 5: Not available Female under 5: Not available All under 5: 29%

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Male 5-18: Not available Female 5-18: Not available All 5-18: Not available Male over 18: Not available Female over 18: Not available All over 18: 21% <u>Vision Symptoms:</u> Male under 5: Not available Female under 5: Not available All under 5: 1% Male 5-18: Not available Female 5-18: Not available All 5-18: Not available Male over 18: Not available Female over 18: Not available All over 18: 14% *Note: Aggregate baseline values do not include Kigoma region because it was not part of the source baseline survey. Any N/A (not available) figures were not captured in the survey. Source: MPR/NRECA T&D Baseline Survey, 2011
Mainland (+Kigoma) T&D		Average hours spent studying last week for	Hours	Hours spent studying last week for all children enrolled in school	We recommend *<u>updating</u>* baseline values from TBD	Data from baseline surveys is now available to update baseline numbers.

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
		all children enrolled in school				**Baseline values** *Mainland T&D:* Male: 1.25 Female: 1.24 Source: MPR/NRECA T&D Baseline Survey, 2011Note: Kigoma region was not included in the 2011 MPR/NRECA baseline study, therefore it is not reflected in the Mainland baseline value.
Zanzibar		Average number of employees per hotel	Number	Average number of employees per hotel	We recommend *updating* the baseline value from TBD	Data from baseline surveys is now available to update the baseline value. **Baseline value:** Zanzibar: 79.5 Source: MPR Baseline Hotel Survey, 2010
Kigoma Solar		Schools with afterhours study programs	Number		We propose *adding* this indicator	The Kigoma Solar Project logic listed "Quality of education" as an objective, however an indicator related to this result was not included in previous versions of the M&E Plan. **Definition**: Number of targeted schools (installed with PV systems) that have afterhours study programs. Afterhours could be before dawn or after dusk. Study programs refer to opening schools for students or teachers for preparation, revision, or teaching. **Classification**: Cumulative

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Disaggregation: None **Frequency**: Baseline and Endline **Baseline value**: Not available Note: Baseline data for this project not yet available at time of final M&E plan revision **Target value**: 45 (Number of schools targeted for PV installations) Source: Energy Sector – CAMCO – REX JV Progressive Report – March 15, 2012 **Primary Data Source:** Kigoma Solar Performance Evaluation **Responsible Party**: Evaluator [Kigoma Solar Performance Evaluation (Baseline 2013, End line TBD)]
Kigoma Solar		Availability of vaccines	Number		We propose *adding* this indicator	The Kigoma Solar Project logic listed "Quality of health care services" as an objective, however an indicator related to this result was not included in previous versions of the M&E Plan. The project is providing PV systems to power vaccine refrigeration systems, which is expected to improve health care service by facilitating the storage and provision of vaccines. Therefore, this indicator is added as a proxy for health care service quality.

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Definition: Number of vaccines available on day of survey in the targeted health centers or dispensaries installed with PV vaccine refrigeration systems, averaged across the survey sample. Vaccines include BCG, Measles, and Polio. **Classification**: Level **Disaggregation**: None **Frequency**: Baseline and Endline **Baseline values:** Not Available Note: Baseline data for this project not yet available at time of final M&E plan revision **Target values:** Not Applicable Note: No target set for this indicator. **Primary Data Source:** Kigoma Solar Performance Evaluation. **Responsible Party**: Evaluator [Kigoma Solar Performance Evaluation (Baseline 2013, Endline TBD)]
Kigoma Solar		Vaccinations administered	Number		We propose *adding* this indicator	This indicator is added as a higher-level proxy for the improvement in the quality of health care services that is expected to result from the Kigoma Solar project.

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						While the availability of vaccines tracks whether the refrigeration systems are actually being used for their intended purpose, this indicator will track the next step of whether more children are actually being vaccinated. **Definition**: Total number of vaccinations administered to children during the previous month. Vaccines of interest include BCG, Measles, and Polio. **Classification**: Level **Disaggregation**: None **Frequency**: Baseline and Endline **Baseline values:** Not Available Note: Baseline data for this project not yet available at time of final M&E plan revision **Target values:** Not Applicable Note: No target set for this indicator. **Primary Data Source:** Kigoma Solar Performance Evaluation. **Responsible Party**: Evaluator [Kigoma Solar Performance Evaluation (Baseline 2013, Endline TBD)]

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Outcome Level Indicators						
Mainland (+Kigoma) T&D		Number of current power customers	Number	Total number of current power customers	We recommend *aggregating* customer and tariff categories (D1, T1 and T2&T3, domestic, commercial, and industrial) into one group for power customers connected from TANESCO service lines, and also *updating* the definition and baselines and targets for all regions	Given that this indicator does not track customers specifically related to the Compact projects, the disaggregated information is less relevant to monitoring the Project. **Definition:** Total number of current power customers, including D1, T1, T2, and T3; domestic, commercial, and industrial categories. **Disaggregation:** None **Baseline values*:** *Mainland (+Kigoma) T&D:* Morogoro: 38,466 Tanga: 32,983 Iringa: 41,347 Mbeya: 49,696 Dodoma: 29,332 Mwanza: 23,134 Kigoma: 8,277 Note: Baseline was calculated as the sum of domestic, commercial, and industrial customers for each region in Q1 of 2008. Source: TANESCO **Target values:** *Mainland (+Kigoma) T&D:* Morogoro: 55,441

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Tanga: 56,489 Iringa: 50,545 Mbeya: 74,666 Dodoma: 34,992 Mwanza: 58,937 Kigoma: 16,015 Source: TANESCO (2013)
Zanzibar		Number of current power customers	Number	Total number of current power customers	We recommend *removing* a disaggregation and *updating* baselines and targets accordingly	ZECO does not report data disaggregated by customer type, only tariff category, and since tariff gives some indication of customer type, the customer type disaggregation should be removed. Tariff disaggregation was not reflected in Annex II so baselines and targets should be updated. **Disaggregation**: Tariff category (D1, T1, T2&T3 **Baseline values:** D1: 58,763 T1: 10,159 T2&T3: 289 Source: ZECO **Target values:** D1: Not available T1: Not available T2&T3: Not available Total: 98,870 Note: Disaggregated targets not available,

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						so total target has been provided Source: ZECO (2013)
Mainland (+Kigoma) T&D		Number of power customers connected to Compact-built lines	Number		We recommend *adding* this indicator, disaggregated by region	In the 2012 M&E Plan the total number of customers connected to all TANESCO power lines is tracked. While this is useful to analyze trends in power customers for the whole network, it is also important to report the number of customers connected to the new lines built using MCC funding. Adding this indicator will establish the Compact contribution to the total number of TANESCO customers, which feeds into ERR model for the T&D activities. **Definition**: Total number of current power customers connected to new power lines constructed using Compact funds. **Classification**: Cumulative **Disaggregation**: Region **Frequency**: Quarterly **Baseline values:** All regions: 0 Source: Not Applicable **Target values:** Morogoro: 10,056 Tanga: 4,658

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Iringa: 2,470 Mbeya: 2,447 Dodoma: 3.728 Mwanza: 11,435 Kigoma: Not available Source: Tanzania Compact Energy Sector Project, Transmission and Distribution ERR (Available at: http://www.mcc.gov/pages/countries/err/tanzania-compact) **Primary Data Source**: TANESCO monthly data reporting template **Responsible Party**: TANESCO, MCA-T
Mainland (+Kigoma) T&D Zanzibar		Technical and non-technical losses	Percentage	Kwh received in last quarter – Kwh billed divided by Kwh in last quarter	We recommend *updating* baseline and target values to reflect regional disaggregation (mainland only) and *revising* the indicator definition	Despite the decision to disaggregate this indicator by region in previous versions of the M&E Plan, the baseline and target values were still reported as aggregates. Since TANESCO is able to provide region-specific baseline and target values, these figures should be updated. The original indicator definition did not clearly explain the calculation involved and therefore needs to be updated. **Definition:** Monthly ratio of the difference between Kwh received by all sub-stations in a region and Kwh billed [Received-Billed] to Kwh received, averaged over the quarter.

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Baseline values: *Mainland (+Kigoma) T&D:* Morogoro: 28.63% Tanga: 28.48% Iringa: 19.96% Mbeya: 21.06% Dodoma: 19.96% Mwanza: 19.96% Kigoma: 36.98% Source: TANESCO **Target values:** *Mainland (+Kigoma) T&D:* Morogoro: 18.00% Tanga: 18.00% Iringa: 18.00% Mbeya: 18.00% Dodoma: 18.00% Mwanza: 18.00% Kigoma: 18.00% Source: TANESCO
Mainland (+Kigoma) T&D Zanzibar		SAIFI and SAIDI		SAIFI equivalent – Total number of customer (unplanned) interruptions divided by the total number of customers served in the last quarter SAIDI equivalent – total	We recommend *removing* these indicators and replacing with proxies	In order to correctly calculate these indicators, we need to know the number of people affected by outages. Through discussions with TANESCO and MCC Energy Expert it became clear that TANESCO is unable to capture the actual number of customers affected by outages, which means these indicators cannot be

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
				minutes of (unplanned) interruption/total customers in the last quarter (Mainland + Kigoma T&D) SAIDI equivalent – total minutes of (unplanned) interruption/total customers in the last quarter (Zanzibar)		calculated.
Mainland (+Kigoma) T&D Zanzibar		Average frequency of blackouts	Number		We recommend <u>*adding*</u> this indicator as a proxy for power quality to replace the removed SAIFI indicator	Because the SAIFI indicator, which was a proxy for power quality, is not feasible to report, this indicator has been added in its place. TANESCO has been reporting this data since Q1 as an input to calculating SAIFI; therefore M&E has access to historical data. **Definition**: Monthly number of outages (planned and unplanned), averaged over the quarter. **Classification**: Level **Disaggregation**: Region **Frequency**: Quarterly **Baseline values:** *Mainland (+Kigoma) T&D:* Morogoro: 435.00

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Tanga: 130.00 Iringa: 62.00 Mbeya: 92.67 Dodoma: 83.33 Mwanza: 159.63 Kigoma: 72.33 Source: TANESCO, Q1 data *Zanzibar Cable:* Zanzibar: 2.33 Source: ZECO **Target values*:** *Mainland (+Kigoma) T&D:* Morogoro: 193.01 Tanga: 57.68 Iringa: 27.51 Mbeya: 41.12 Dodoma: 36.97 Mwanza: 70.83 Kigoma: 32.09 Source: TANESCO *Zanzibar Cable:* Zanzibar: 1.03 Source: ZECO *Note: Targets calculated as a yearly 15% reduction from baseline values, as stipulated in the ERR.

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Primary Data Source: TANESCO and ZECO monthly reporting template **Responsible Party**: TANESCO and ZECO
Mainland (+Kigoma) T&D Zanzibar		Average duration of blackouts	Hours		We propose *adding* this indicator as a proxy for power quality to replace the removed SAIDI indicator	Because the SAIDI indicator, which was a proxy for power quality, is not feasible to report, this indicator has been added in its place. TANESCO has been reporting this data since Q1 as an input to calculating SAIDI; therefore M&E has access to historical data. **Definition**: Average duration of outages (planned and unplanned) in one month, averaged over the quarter. $= [\sum_{t=1-3}$ (total hours of outage / number of outages)$_t$] / 3. $_{t =}$ month in quarter **Classification:** Level **Disaggregation**: Region **Frequency**: Quarterly **Baseline values*:** *Mainland (+Kigoma) T&D:* Morogoro: 15.54 Tanga: 6.30

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Iringa: 8.59 Mbeya: 4.40 Dodoma: 9.27 Mwanza: 9.80 Kigoma: 2.25 Source: TANESCO *Zanzibar Cable:* Zanzibar: 0.10 Source: ZECO *Note: Baseline values taken from first quarter of the Compact period **Target values**:** *Mainland (+Kigoma) T&D:* Morogoro: 6.90 Tanga: 2.80 Iringa: 3.81 Mbeya: 1.95 Dodoma: 4.11 Mwanza: 4.25 Kigoma: 1.00 Source: TANESCO *Zanzibar Cable:* Zanzibar: 0.04 Source: ZECO **Note: Targets calculated as a yearly 15% reduction from baseline values, as stipulated in the ERR.

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Primary Data Source: TANESCO monthly reporting template **Responsible Party**: TANESCO and ZECO
Mainland (+Kigoma) T&D Zanzibar Kigoma Solar		Average annual quantity of other energy sources consumed	varies	Total quantity of other energy sources (batteries, kerosene, diesel) consumed per household in the last year (Mainland T&D + Kigoma; Zanzibar; Kigoma Solar PV)	We recommend *updating* baseline values from TBD and the frequency of reporting, and *revising* the indicator definition, unit, and data source (Zanzibar only)	Data from baseline surveys is now available to update baseline numbers. The frequency of reporting should be updated from "Year: 4,5" to reflect the fact that survey reporting will take place after the compact closes. In addition, the indicator definition revision is required because the previous definition did not provide detail on how the indicator is calculated. The unit should be updated from "varies" since it is known that the unit reported is Kg. Finally, since it is unclear whether there will be a household survey in Zanzibar in addition to the follow-up Hotel survey, the primary data source should be not mention a household survey specifically, and should be more general. **Definition:** Total quantity of non-electric energy sources (e.g. solid fuel: wood, charcoal, crop residues, straw, dung, and candles; liquid fuel: kerosene, gas/diesel, and LPG) consumed per household in the last year (converted to Kg), averaged across household sample. A conversion factor of 0.8 Kg per liter is used to

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						convert liquid fuel consumed to Kg. **Unit**: Kilograms **Frequency**: Baseline and Endline **Baseline Values:** *Mainland T&D:* Morogoro: 1,648 Tanga: 2,111 Iringa: 2,241 Mbeya: 1,775 Dodoma: 1,762 Mwanza: 1,930 Source: MPR/NRECA T&D Baseline, 2011 *Kigoma T&D:* Kigoma: Not Available Note: Kigoma region not captured in 2011 MPR/NRECA T&D Baseline *Zanzibar Cable* Zanzibar: Not Available Note: Indicator not captured in 2010 MPR Baseline Hotel Survey *Kigoma Solar:* Kigoma: Not Available Note: Baseline data for this project not yet available at time of final M&E plan revision

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Primary Data Source (Zanzibar only): Evaluation survey
Mainland (+Kigoma) T&D, Zanzibar Kigoma Solar		Average availability of power in the last 24 hours	Hours	Average number of hours power was available to the household in the last 24 hours	We recommend *updating* baseline values from TBD, the frequency of reporting, and the data source, and *revising* the definition for Zanzibar and Kigoma	Data from baseline surveys is now available to update baseline numbers. The frequency of reporting should be updated from "Year: 4,5" to reflect the fact that survey reporting will take place after the compact closes, and data sources should be updated to reflect changes in evaluation plans. In addition, the data reported on power availability in Zanzibar comes from the hotel survey conducted by MPR in 2010, not a household survey. Therefore the definition of the indicator must specify "hotel" instead of "household". Similarly, the Kigoma Survey will report on this indicator for various types of end users, so the definition should reflect this. **Definition (Zanzibar only)**: Average number of hours power was available to the hotel in the last 24 hours **Definition (Kigoma Solar only)**: Average number of hours power was available to the end user in the last 24 hours **Frequency**: Baseline and Endline

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Baseline values: *Mainland (+Kigoma) T&D*: All 7 T&D regions: Not Available Note: Baseline figures for this indicator were expected from the MPR/NRECA 2011 Baseline, however because the baseline sample was assumed to have had no access to electricity prior to the building of Compact lines, this question was not asked explicitly. *Zanzibar Cable:* Zanzibar: 23.4* **Source**: MPR Baseline Hotel Survey, 2010 *Note: While this was the value reported in the survey, the fact that the survey question captured only a one-time measure of power availability per household, the result may be misleading. Ideally this indicator would have been collected on a high frequency basis and then averaged over the period of data collection. In the absence of more detailed data on the subject, the data available has been reported. *Kigoma Solar:* Kigoma: Not available Note: Baseline data for this project not yet available at time of final M&E plan revision.

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Primary Data Source: Mainland: Household Survey Zanzibar: Hotel Survey Kigoma: Evaluation Survey **Responsible Party:** Mainland: Mathematica Zanzibar: Mathematica Kigoma: Evaluator
Mainland (+Kigoma) T&D Zanzibar		Total quantity of electricity sold	MWh/Year	Quantity of electricity sold in the last quarter	We recommend *revising* baseline and target figures and the unit, and *revising* the indicator classification for Zanzibar	Despite the decision to disaggregate this indicator by region in previous versions of the M&E Plan, the baseline and target values were still aggregated across the regions in Annex II. Given that TANESCO has been able to work out regional target value for each region, disaggregated baselines and targets should be provided. In addition, the unit had been incorrectly recorded as MWh/Year and should be revised. The ITT had also incorrectly been reporting this as a cumulative indicator, therefore the ITT data will be revised to report quarterly actuals. This indicator was incorrectly recorded as Cumulative in the Zanzibar section of Annex II and so the classification should be revised to be Level. **Unit**: Megawatt hours (MWh)

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Classification: Level **Baseline values*:** *Mainland (+Kigoma) T&D:* Morogoro: 29,793 Tanga: 41,299 Iringa: 19,815 Mbeya: 27,500 Dodoma: 14,498 Mwanza: 37,612 Kigoma: 2,481 Source: TANESCO *Zanzibar Cable:* Zanzibar: 34,845 Source: ZECO *Note: Baseline value calculated as average of Year 1 quarterly data. **Target values**:** *Mainland (+Kigoma) T&D:* Morogoro: 57,366 Tanga: 79,521 Iringa: 38,154 Mbeya: 52,951 Dodoma: 27,917 Mwanza: 72,422 Kigoma: 5,612 Source: TANESCO

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Zanzibar Cable: Zanzibar: 60,551 Source: ZECO **Note: Yearly targets were provided by the implementing entities and were divided by 4 to set quarterly average targets, since this indicator is reported quarterly.
Kigoma Solar		Number of Solar Power Customers	Number	Total number of solar power customers	We propose *removing* this indicator and replace with two others	After examining this indicator the M&E team thinks that it is vague because the word customer is not precisely defined. We therefore propose to drop the indicator and replace with "Number of PV Systems Installed" and "Number of PV systems sold and installed at Household". These two indicators will have different indicator levels, due to the fact that they are brought about by different types of project activities.
Kigoma Solar		Number of PV systems sold and installed at household	Number		We recommend *adding* this indicator in place of "Number of Solar Power Customers"	In the Kigoma Solar Activity PV systems are offered to individual households for purchase through SACCOS, therefore the number of PV system installed at household level through this Activity should be tracked. **Level**: Outcome Note: This is an Outcome, rather than an Output, because customers choose to purchase PV systems as a result of the marketing approach implemented by the

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Kigoma Solar Project. **Definition**: Total number of PV systems supplied and installed by the MCA-T contractor to households through the SACCOS system in the two target districts in Kigoma. **Classification:** Cumulative **Disaggregation**: None Note: Gender disaggregation not available **Frequency**: Quarterly **Baseline value**: 0 Source: Not applicable **Target value**: Not available Note: The program has an expected result of 61,275 systems in households over 4 years, as noted in the Kigoma Solar Final Feasibility Study (Feb 24 2011) **Primary Data Source:** Solar Power Consultant's weekly update report **Responsible Party**: MCA-T Energy Sector
Kigoma Solar		Daily solar power consumption	Kilowatt hours (Kwh)		We recommend *adding* this indicator	The Kigoma Solar Project logic includes "Quality of power service" as an outcome, but no indicator was included in

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						the M&E Plan to monitor the result. It should therefore be added. **Definition**: Total Solar power consumption in the last seven days divided by seven, averaged over sample **Classification:** Level **Disaggregation**: Type of end user (Dispensaries, Health centers, Vaccine refrigerators, Secondary Schools, Village Markets, Beach Management Units, Households) **Frequency**: Baseline and Endline **Baseline value**: Not available Note: Baseline data for this project not yet available at time of final M&E plan revision. Some households may already have access to solar power. **Target value**: Not Applicable Note: No target set for this indicator **Primary Data Source**: Kigoma Solar Performance Evaluation (Baseline 2013, Endline TBD) **Responsible Party**: Evaluator

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Output Level Indicator						
Mainland (+Kigoma) T&D		Total km of 33 & 11 KV constructed	Kilometers	Total kilometers of 33 and 11 KV lines constructed to date (cumulative)	We recommend *updating* baseline and target values to reflect regional disaggregation	Given that the indicator is disaggregated by region and that TANESCO has provided region-specific targets, the baselines and targets should be updated. **Baseline values**: Morogoro: 0 Tanga: 0 Iringa: 0 Mbeya: 0 Dodoma: 0 Mwanza: 0 Kigoma: 0 Source: Not Applicable **Target values**: Morogoro: 144.98 Tanga: 56.08 Iringa: 197.96 Dodoma: 463.73 Mbeya: 17.60 Mwanza: 436.83 Kigoma: 16.98 Note: Targets are those set during original project design. Source: BOQ report from MCA-T Sector Lead – March 2010
Mainland (+Kigoma) T&D		Total km of LV constructed	Km	Total kilometers of LV lines constructed to date (cumulative)	We recommend *updating* baseline and target values to	Given that the indicator is disaggregated by region and that TANESCO has provided region-specific targets, the

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
					reflect regional disaggregation	baselines and targets should be updated. **Baseline values**: Morogoro: 0 Tanga: 0 Iringa: 0 Mbeya: 0 Dodoma: 0 Mwanza: 0 Kigoma: 0 Source: Not applicable **Target values**: Morogoro: 348.92 Tanga: 223.32 Iringa: 250.57 Mbeya: 120.87 Dodoma: 402.72 Mwanza: 432.84 Kigoma: 72.64 Note: Targets are those set during original project design. Source: BOQ report from MCA-T Sector Lead – March 2010
Mainland T&D Zanzibar		Total transmission and distribution substation capacity	MVA	Grid and primary substation capacity to date (cumulative)	We recommend *removing* this indicator	The 2012 M&E plan merged two separate indicators (Grid and Primary Substation) together. This has caused confusion in precisely defining the indicator. Therefore the indicator should be removed and replaced with two new indicators.

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Mainland T&D Zanzibar		Grid substation capacity installed	MVA		We propose *adding* this indicator, disaggregated by those regions implementing grid substation capacity upgrades	MCA-T is implementing grid substation capacity upgrades in two T&D regions in the Mainland and Zanzibar. It is therefore important to monitor this implementation separately rather than jointly with primary substations. **Definition**: Total grid substation capacity installed to date. Grid substation projects in Morogoro, Tanga, and Zanzibar. **Classification**: Cumulative **Disaggregation**: Region of grid substation **Frequency**: Quarterly **Baseline Values**: *Mainland T&D:* Morogoro: 150 Tanga: 40 Source: TANESCO *Zanzibar Cable:* Zanzibar: 60 Source: ZECO **Target values**: *Mainland T&D*: Morogoro: 210 Tanga: 85

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Source: TANESCO *Zanzibar Cable*: Zanzibar: 180 Source: ZECO **Primary Data Source**: TANESCO monthly reporting template **Responsible Party**: TANESCO and ZECO; MCA-T
Mainland T&D		Primary substation capacity installed	MVA		We propose *adding* this indicator, disaggregated by those regions implementing primary substation capacity upgrades	MCA-T is implementing primary substation capacity upgrades in the 6 original Mainland T&D regions. It is therefore important to monitor this implementation separately, rather than jointly with grid substations. **Definition:** Total primary substation capacity installed to date on Mainland. Primary substation projects in 6 original mainland T&D regions. **Classification**: Cumulative **Disaggregation:** By region of Primary substation **Frequency**: Quarterly **Baseline values**: Morogoro: 42.5

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Tanga: 69.20 Iringa: 17.10 Mbeya*: 35.00 Dodoma**: 74.40 Mwanza: 45.00 Source: TANESCO **Target values**: Morogoro: 64.50 Tanga: 84.20 Iringa: 22.10 Mbeya*: 142.50 Dodoma**: 94.40 Mwanza: 65.00 Source: TANESCO **Primary Data Source**: TANESCO monthly reporting template **Responsible Party**: TANESCO; MCA-T *Note: The baseline for Mbeya substation capacity is an accurate reflection of the status as of 2008, when 15 MVA of Compact investment was settled upon. However, between Q1 and Q8 of the Compact, prior to any MCC investment, TANESCO upgraded the substation to a total of 127.5 MVA. Therefore, the indicator's target reflects what the ultimate total capacity should reflect (142.5 MVA). The ITT will note MCC

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Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						progress (% complete of 15MVA additional Compact investment) separate from the progress made by TANESCO. **Note: In the Dodoma substation project, the Compact is adding 25MVA to the substations in Mzakwe (10) and Mnadani (15). However, at the same time, TANESCO plans to remove two transformers from these substations, each with a capacity of 2.5 MVA. Therefore, similar to Mbeya, the Dodoma target accurately reflects the capacity to be installed by the Compact and the 5 MVA to be removed by TANESCO.
Mainland (+Kigoma) T&D Zanzibar		Collections efficiency	%	Revenue from electricity bills collected in the last quarter/Total billing in the last quarter	We recommend *revising* the definition, *documenting* a disaggregation, and *updating* baseline and target values to reflect regional disaggregation	The 2012 M&E Plan did not document the regional disaggregation of this indicator even though the ITT does, so Annex I and II should be updated to include disaggregation by region. The previous definition was not clear and therefore should be updated. **Definition**: Total revenue collected in current month divided by total billing from the previous month. **Disaggregation**: By region **Baseline values**: *Mainland (+Kigoma) T&D*: Morogoro: 74.60%

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Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Tanga: 59.39% Iringa: 81.97% Mbeya: 68.51% Dodoma: 83.03% Mwanza: 92.83% Kigoma: 57.07% Source: TANESCO *Zanzibar Cable:* Zanzibar: 86.55% Source: ZECO **Target values**: *Mainland T&D:* Morogoro: 95.00% Tanga: 95.00% Iringa: 95.00% Mbeya: 95.00% Dodoma: 95.00% Mwanza: 95.00% Kigoma:95.00% Source: TANESCO *Zanzibar Cable:* Zanzibar: 95.00% Source: ZECO
Mainland (+Kigoma) T&D		Cost recovery ratio	Ratio	Total billings in the last quarter/total costs in the last quarter	We recommend *revising* the reporting frequency and definition, and	Based on discussions between TANESCO and M&E team, this indicator cannot be reported each quarter since the necessary data is only available each end of the

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Zanzibar					*documenting* baseline and target sources	fiscal year. In addition it is only available at the corporate level for the mainland, rather than regional level, so this should be noted. The definition should be adjusted accordingly. **Definition**: Total billings in the last fiscal year divided by total costs in the last fiscal year. Reported at corporate level for Mainland and Zanzibar. **Frequency**: Annual **Baseline values:** *Mainland (+Kigoma) T&D:* Mainland: 73.43% Note: Mainland includes all regions, not just those in Compact project areas. Source: TANESCO *Zanzibar Cable:* Zanzibar: 75.40% Source: ZECO **Target values**: *Mainland (+Kigoma) T&D:* Mainland: 95.00% Source: TANESCO *Zanzibar Cable:* Zanzibar: 95.00% Source: ZECO

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Mainland (+Kigoma) T&D Zanzibar Kigoma Solar		Total number of people temporarily employed/ contracted by contractors	Number	Number of people temporarily employed/ contracted by contractors to date (cumulative) (Mainland (+ Kigoma) T&D, Zanzibar, Kigoma Solar)	We recommend *removing* the gender disaggregation for this indicator, *revising* indicator definition and *updating* the targets	The contractor reports an aggregated figure to TANESCO, rather than disaggregated by gender. Considering timing challenges to acquiring disaggregated data, the gender disaggregation should be removed. The indicator definition should be clearer to mention type of workers considered under this case; that is the indicator definition should specify whether both local and foreigner are included or not. The targets of TBD should be updated to reflect the fact that no target will be set for this indicator. **Definition:** Number of people (both local and foreigners) temporarily employed/contracted by contractors to date (cumulative) **Target values**: Mainland (+Kigoma) T&D: Not applicable Zanzibar: Not applicable Kigoma Solar: Not applicable Note: No targets set for this indicator
Mainland (+ Kigoma T&D)		Total hours of training delivered to implementing entities	Hours	Hours of training delivered to implementing entities to date	We recommend *revising* the indicator definition	The 2012 indicator definition does not clearly specify that it included training for Kigoma T&D in addition to the other 6 T&D regions, therefore it should be updated.

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Definition: Total hours of training delivered to entities that are implementing T&D activities (in all 7 regions). Training includes both technical and managerial training sessions arranged for TANESCO Officers.
Zanzibar		Total km of 132KV constructed	Kilometers	Total kilometers of 132KV lines constructed to date (cumulative)	We recommend *revising* the indicator definition and disaggregation and *updating* baseline and target values accordingly	This indicator tracks two distinct components to the Zanzibar Cable Activity: (1) submarine cable and (2) overhead lines connecting the cable to power lines on Mainland and Zanzibar. This should be made clear in the definition and the indicator should be disaggregated to reflect this. In addition, the previous target value of 75.1 was incorrect; the original target was actually lower. **Definition**: Total kilometers of 132KV submarine cable and overhead lines constructed to date. **Disaggregation**: Line type (Submarine Cable, Overhead Lines) **Baseline values:** Submarine cable: 0 Overhead lines: 0 Source: Not Applicable **Target values:**

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Submarine cable: 24.4 Overhead lines: 40.7 Source: MCA-T Energy Sector Lead – IFB report, November 2009 Note: annual targets were removed from Annex II.
Kigoma Solar		Capacity of systems installed	kWp	Capacity of solar systems installed (cumulative)	We recommend *revising* the name, definition, unit, baselines. and targets of this indicator, and *adding* a disaggregation	The indicator name, definition, and unit of this indicator would benefit from more detail for clarity. Since PV systems will be installed at institutions and households under different schemes, the indicator should disaggregated by households and non-households (includes public institutions, village markets, and fishing boats). Baselines and targets should be updated with this disaggregation. **Name**: Capacity of PV systems installed **Unit**: Kilowatts peak (kWp) **Definition**: Total capacity of solar PV systems installed. Includes all fully-subsidized non-households installations as well as those at the household level. **Disaggregation**: By Non-household/Household **Baseline values**: Non-household: 0

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Household: 0 Source: Not applicable **Target values:** Non-household: 241.1 Household: 380.6 Source: Energy Sector – CAMCO – REX JV Progressive Report – March 15, 2010
Kigoma Solar		Number of PV systems installed	Number		We propose *adding* this indicator instead of "Number of Solar power customers"	In the Kigoma Solar Activity, fully-subsidized PV systems are provided to public institutions, village markets, and fishing boats, rather than individual customers, therefore the indicator should track systems installed instead of customers. The previous indicator tracked customers. **Definition**: Total number of solar power systems (PV) installed in schools, health facilities, village markets, and beach management units (BMU), through the Kigoma Solar Activity. **Classification**: Cumulative **Disaggregation**: Type of recipient **Frequency**: Quarterly **Baseline value:** All recipients: 0 Source: Not applicable

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Target values: Dispensaries: 116 Health centers: 14 Vaccine Refrigerator: 130 Secondary Schools: 45 Village markets: 25 Beach Management Units: 60 Source: Energy Sector – CAMCO – REX JV Progressive Report – March 15, 2010 **Primary Data Source:** Kigoma Solar Consultant's Weekly Update **Responsible Party**: Contractor; MCA-T
Kigoma Solar		Percent of total training hours delivered to end users	Percentage	Percentage of total training hours delivered to end users	We recommend *revising* indicator name, definition, classification, and unit, and *updating* the target value accordingly	Reporting this indicator in percentage terms is less informative than reporting the actual hours of training delivered. The ITT will report a running calculation of "percent of target complete" each quarter regardless, so the indicator should be revised to report actuals. **Name**: Hours of training delivered to end users **Definition**: Total hours of training delivered to solar power end users in Kigoma **Classification**: Cumulative

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						Unit: Hours **Target value**: 938.40 Note: Training to Solar Power end user was targeted to be 23.46 weeks. The total number of target hours of training was calculating by assuming 5 working days of 8 hours each. The year 4 target could not be established and is therefore Not available (N/A). Source: Kigoma Solar Consultant's Weekly Update Report
Process Level Indicators						
Mainland T&D Zanzibar		Certificate for Environmental Impact Assessment (EIA) issued	Date	Date certificate for Environmental Impact Assessment (EIA) issued	We recommend *revising* the baselines and year 2 targets	The baseline was recorded as 0 in Annex II, which is not appropriate for date indicators. In addition, the Year 2 target was incorrectly noted as the actual date of completion, rather than the target, so should be revised. **Baseline values**: Mainland: Not applicable Zanzibar: Not applicable **Year 2 targets**: Mainland: February 23, 2010 Zanzibar: February 23, 2010 Note: These are now the same as the end of compact targets.
Mainland T&D		Environmental and Social Management	Date	Date Environmental and Social Management Plan approved	We recommend *revising* the baselines and year 2	The baseline was recorded as 0 in Annex II, which is not appropriate for date indicators. In addition, the Year 2 target

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Zanzibar		Plan approved			targets	was incorrectly noted as the actual date of completion, rather than the target, so should be revised. **Baseline values**: Mainland: Not applicable Zanzibar: Not applicable **Year 2 targets**: Mainland: December 10, 2009 Zanzibar: December 10, 2009 Note: These are now the same as the end of compact targets.
Mainland (+Kigoma) T&D Zanzibar Kigoma Solar		Value of feasibility, preliminary design and supervision contracts (Mainland & Zanzibar) Value of feasibility and design contracts (Kigoma Solar)	US $	Total value of feasibility, preliminary design and supervision contracts (Mainland & Zanzibar) Value of feasibility and design contracts (Kigoma Solar)	We recommend *revising* the indicator classification for all 3 project activities	The indicator classification should be corrected to be Cumulative instead of Level, since the ITT should report the current contract value including any modifications. **Classification**: Cumulative
Mainland (+Kigoma) T&D		Value disbursed of feasibility, preliminary	US $	Value disbursed of feasibility, preliminary design and supervision contracts (Mainland &	We recommend *revising* the end of compact targets of this indicator for all	End of Compact targets were established not to be correct and therefore need to be revised in accordance with data obtained from MCA-T Energy Sector.

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
Zanzibar Kigoma Solar		design and supervision contracts (Mainland & Zanzibar) Value disbursed of feasibility and design contracts (Kigoma Solar)		Zanzibar) Value disbursed of feasibility and design contracts (Kigoma Solar)	3 projects	**Target values:** Mainland (+ Kigoma T&D): $8,198,323.77 Zanzibar: $8,512,462.88 Kigoma Solar: $510,724.24 Note: Targets are current contract values (including modifications) Source: Energy Project Contracts
Mainland (+ Kigoma) T&D Zanzibar Kigoma Solar		Value of design and build construction contracts (Mainland T&D and Zanzibar) Value of construction contracts (Kigoma Solar)	US $	Value of design and build construction contracts (Mainland T&D and Zanzibar) Total value of construction contracts (Kigoma Solar)	We recommend *revising* the indicator classification for all 3 project activities and the end of compact targets for Mainland and Kigoma Solar contracts	End of Compact targets for Mainland and Kigoma Solar Power Project contracts were established to be incorrect and therefore need to be revised in accordance with data obtained from MCA-T Energy Sector. In addition, the indicator classification should be corrected to be Cumulative instead of Level, since the ITT should report the current contract value including any modifications. **Classification**: Cumulative **Target values:** Mainland: $ 97,970,982.56 Note: Original contract value does not include Kigoma T&D modification Zanzibar (no change, provided for

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						consistency): 50,168,285.39 Note: The value includes Zanzibar cable Kigoma Solar: $ 4,746,057.00 Note: Targets are original contract values prior to any modifications Source: Energy Project Contracts
Mainland (+Kigoma) Zanzibar Kigoma Solar		Value disbursed of design and build construction contracts (Mainland T&D and Zanzibar) Value disbursed of construction contracts (Kigoma Solar)	US $	Value disbursed of design and build construction contracts (Mainland T&D and Zanzibar) Value disbursed of construction contracts (Kigoma Solar)	We recommend *revising* the end of compact targets	End of Compact targets were established not to be correct and therefore need to be revised in accordance with data obtained from MCA-T Energy Sector. **Target values:** Mainland: $100,227,515.56 Zanzibar: 50,250,635.39 Kigoma Solar: $ 4,714.808.96 Note: The Kigoma contract value decreased from the original value due to a de-scoping. Note: Targets are current contract values (including all signed modifications). Source: Energy Project Contracts
Mainland T&D Zanzibar Kigoma Solar		Average annual household income per capita; Average annual business revenue; Average annual wages; Average annual expenditure on energy; Average hours spent studying last week for all children enrolled in school; Percentage of population with indoor air pollution related illness; Average number of employees per hotel;			We recommend *updating* the frequency of reporting for all listed indicators	The Annex I of the 2012 M&E Plan incorrectly documented reporting frequency as "Year: 4,5". These indicators will only be reported on using survey data, therefore reporting will only be for Baseline and Endline, the latter of which will take place after the end of

Date 27.06.2013						
Energy Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator information (where applicable)**
						compact. The exact timing for endline data collection is not currently known. **Frequency**: Baseline and Endline

General Notes:

- Kigoma region was added to the T&D project mid-Compact to replace the canceled Malagarasi Hydropower and Kigoma Distribution Project. It is for this reason that Kigoma was not originally included in the sample for the Mainland T&D Evaluation survey sample and why Kigoma baseline data for this project often has a different source.
- The Zanzibar Cable Project was more focused on commercial customers and hotels were the biggest segment of the commercial sector in Zanzibar. This is the reason why a hotel survey was conducted in Zanzibar, rather than a household survey, and why many of the household-level energy indicators are defined as hotel-level for the Zanzibar project.

2013 ANNEX III: INDICATOR MODIFICATION MEMO – WATER SECTOR PROJECT

Date 27.06.2013						
Water Sector Project						
Activities		**Indicator**	**Unit**	**Definition (April 2012)**	**Modification**	**Justification and new indicator or definition (where applicable)**
Goal Level Indicators						
Lower Ruvu Morogoro		Average annual household income per capita	US $	Average of the total household income divided by total number of household members for all households in the survey sample	We recommend *revising* the indicator definition, baseline values, and the data source	The 2012 M&E Plan did not mention which sources of income should be included for this indicator, therefore it should be revised. In addition, baseline values should be updated because the original baseline values were given as mean for both Morogoro and Lower Ruvu, instead of disaggregated for each project. The outside baseline data source was revised and should be reflected in Annex I. **Definitio**n: Total annual household income from all sources divided by total number of household members, averaged across all households in the survey sample **Baseline values**: Morogoro: 339.36 Lower Ruvu: 773.23 Source: NBS – National Accounts Survey (2000 – 2010); September 2011. **Primary Data Source**: NBS Accounts Survey (2011), Evaluation Survey

Objective Level Indicators						
Lower Ruvu Morogoro		Average current value of household assets per capita	US $	Average of the total value of household assets divided by total number of household members for all households in the survey sample	We recommend *revising* the targets for this indicator	The 2012 M&E Plan target for this indicator was likely incorrect, considering that it was only 1 or 2 $/capita higher than the baseline. No target is generally set for this type of high level indicator unless linked to the ERR, so the target should be changed to "Not Applicable". **Target values:** Morogoro: Not Applicable Lower Ruvu: Not Applicable Note: No target set for this indicator
Lower Ruvu Morogoro		Average current value of commercial assets	US $	Average of the total value of commercial assets for all enterprises in the survey sample	We recommend *removing* this indicator and replacing with a proxy	An enterprise survey was not part of the Water Evaluation study design, therefore this indicator cannot be collected as defined. It should be dropped and replaced with a proxy that will be collected in the Water surveys.
Lower Ruvu Morogoro		Average Net Business Income (Profit)	US $		We recommend *adding* this indicator to replace "Average current value of commercial assets"	Since we recommend dropping the commercial assets indicator, we should add another indicator that is a proxy for the ERR benefit stream (objective) of increased investment and economic activities. The Water Survey will collect information on average net income/profit from businesses operated by sample households. **Definition**: Average net business income (profit) during the months in the last year when the business was in operation, averaged over the household sample **Classification**: Level

						Disaggregation: By project **Frequency of Reporting**: Baseline and Endline **Baseline values**: Lower Ruvu and Morogoro: Not available Note: Baseline data from project evaluation not yet available at time of final M&E Plan review **Target values**: Lower Ruvu and Morogoro: Not applicable Note: No targets set for this indicator **Primary Data Source**: Water Evaluation Household Survey **Responsible Party**: Social Impact
Lower Ruvu Morogoro		Under Five Mortality Rate	Rate	National-level probability per 1,000 that a newborn baby will die before reaching age five	We recommend *revising* the indicator definition and the baseline figures to reflect disaggregation by gender	Annex I of the 2012 M&E Plan did not adequately define the indicator to align with the data source and therefore the indicator definition should be revised. In addition, Annex II did not provide gender-disaggregated baselines, despite the data being available in the Tanzania DHS survey, therefore baselines should be updated. **Definition**: National-level probability per 1,000 that a newborn baby will die before reaching age five, calculated over the preceding 10 years

						Baseline values: Male: 97 Female: 88 Source: Tanzania DHS 2010 Note: The end of compact target in Annex II is from the MCC economist's estimates and is not disaggregated by gender.
Lower Ruvu Morogoro		Adult Mortality Rate	Rate	Age-specific mortality rates for women and men age 15-49 based on the survivorship of sisters and brothers of survey respondents, for the ten-year period preceding the survey	We recommend *revising* the baseline figures to reflect disaggregation by gender	Annex II of the 2012 M&E Plan incorrectly listed the baseline for this indicator for women only, therefore a male-specific baseline must be added. **Baseline values**: Male: 5.0 (age standardized) Female: 5.1 (age standardized) Source: Tanzania DHS 2010 Note: The end of compact target in Annex II is from the MCC economist's estimates and is not disaggregated by gender.
Lower Ruvu Morogoro		Incidence of Diarrhea		The percentage of individuals reported as having diarrhea in the two weeks preceding the survey, out of the total population	We recommend *revising* the disaggregation	Annex I of the 2012 M&E Plan did not document the correct indicator disaggregation that had been recommended in Annex III. The disaggregation should therefore be revised. **Disaggregation**: By gender, By age: under 5, 5-18, over 18 Note: Currently baseline data from the Household Budget Survey (2007) is

						reported for this indicator, but it is not disaggregated by gender and age categories. Disaggregated baseline data will come from the evaluation survey, but the aggregate figure has been provided in Annex II as a reference point.
Lower Ruvu Morogoro		Percentage of children who missed any school in the last 4 weeks		Percentage of children who missed any school in the last 4 weeks	We recommend *revising* the indicator definition and baselines	The 2012 M&E Plan definition for this indicator did not mention the type of school that should be included and should therefore be updated in this revision. The previous Plan had also indicated that this indicator should be disaggregated by gender, but disaggregated baselines were not provided. The baseline statistics from the HBS 2007 in the previous M&E Plan were calculated incorrectly, therefore the updated baseline values are much lower. **Definition**: Percentage of surveyed school children (Primary/Secondary) who missed any school in the last 4 weeks due to illness or injury **Baseline values:** *Morogoro*: Male: 11.66% Female: 17.00% *Lower Ruvu (Dar es Salaam):* Male: 8.74% Female: 10.07% Note: Lower Ruvu treatment plant feeds the Dar es Salaam area, therefore data on Dar es Salaam was provided. Source: HBS 2007

Outcome Level Indicators						
Lower Ruvu Morogoro		Total number of current customers	Number	Number of current customers	We recommend *<u>documenting</u>* the disaggregation by customer type and *<u>updating</u>* baselines and targets accordingly	In the 2012 M&E Plan, Annex I indicated that this indicator would be disaggregated by project and customer category, but it was not correctly recorded in the Annex II or III. The disaggregation should therefore be documented and baseline and targets updated with disaggregated values. **Baseline values:** *Morogoro:* Domestic: 18,303 Non -domestic: 1,185 *Lower Ruvu:* Domestic: 63,730 Non – domestic: 5,560 Source: MORUWASA and DAWASA **Target values:** *Morogoro:* Domestic and non-domestic: Not applicable *Lower Ruvu*: Domestic and non-domestic: Not applicable Note: No targets set for this indicator
Lower Ruvu Morogoro		Percentage of non-active customers to total customers	Percentage	Percentage of non-active customers (connected to line but do not receive water) to total customers	We recommend *<u>revising</u>* the indicator name and definition and *<u>updating</u>* the baseline value for Lower Ruvu from TBD	The previous indicator name and definition were not clear and therefore should be revised. The Lower Ruvu baseline figure should be updated from TBD. **Name**: Proportion of non-active customers

						Definition: The proportion of total customers that are non-active (i.e. connected to the system but do not consume water). = Number of non-active customers/Total number of customers. **Baseline values:** Lower Ruvu: 42.34% Source: DAWASCO/DAWASA.
Lower Ruvu Morogoro		Continuity of service	Hours	Average hours of service per day for water supply	We recommend *adding* a disaggregation by season and *updating* baselines and targets accordingly	Given that the availability of water is likely to differ between the wet and dry seasons, it will be useful to disaggregate this indicator by season. Baselines and targets should also be updated to align with the disaggregation. **Disaggregation:** By Season (wet/dry) **Baseline values:** Morogoro Wet season: Not Available Morogoro Dry season: Not Available Morogoro (both seasons): 16 Note: Disaggregated baseline data from the Evaluation not available at the time of final M&E Plan review, so an aggregate figure from another source has been provided. Source (both seasons): EWURA Report 2006-7 Lower Ruvu Wet season: Not Available Lower Ruvu Dry Season: Not Available Note: Baseline data from project evaluation not yet available at time of final M&E Plan review

						Target values: Morogoro Wet Season: Not applicable Morogoro Dry Season: Not applicable Lower Ruvu Wet Season: Not applicable Lower Ruvu Dry Season: Not applicable Note: No targets set for this indicator
Lower Ruvu Morogoro		Nephelometric turbidity units	NTU	Turbidity is the cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is a key test of water quality.	We recommend *documenting* baseline and target figures, *removing* disaggregation by Location (point of use), and *adding* disaggregation by plant for Morogoro	Baselines and targets for this indicator were included in the 2012 M&E plan; however disaggregated values were not documented in Annex III. They should therefore be documented here. Previously the M&E Plan disaggregated this indicator by location (point of use), but the responsible party is not able to report on this, so the disaggregation should be removed. In Morogoro, since water will be tested at the plant by the implementing entity, we suggest disaggregating by plant. **Disaggregation**: By project; By water treatment plant (Morogoro only) **Baseline values:** *Morogoro*: Mafiga: 9.40 Mambogo: 5.3* Source: MORUWASA (2008 data) * Baseline value taken from MORUWASA progressive report (2011/2012 – Appendix IV, p22) Lower Ruvu: 10.00

						Source: DAWASA (2008 data) **Target values:** Morogoro (both Mafiga and Mambogo): 1.00 Source: MORUWASA Lower Ruvu: 1.00 Source: DAWASA
Lower Ruvu Morogoro		Coliform Microbial Density (per 100 milliliters)	Number of colonies	Test of water contamination in which the number of the colonies of coliform-bacteria Escherichia coli (E. coli) per 100 milliliter of water is counted or appropriate measure as approved by MCC. The result is expressed as 'Coliform Microbial Density' and indicates the extent of fecal matter present in it. According to common water quality standards drinking water must be completely free from any colony, bathing and swimming pool water can have about 200 colonies, and recreational (fishing and boating) water about 1000 colonies.	We recommend *revising* the indicator definition and frequency of reporting, *removing* disaggregation by storage container, and *updating* baseline and target according to disaggregation	In 2012 M&E Plan the follow-up source of data for this indicator was wrongly documented and disaggregated baselines and targets were not provided. In addition the definition was not specific enough to the particular bacteria test that the Evaluator will conduct, and should be revised. Also, it does not seem likely that the evaluation will be able to collect water quality samples from storage containers, so this particular disaggregation should be removed. **Definition**: Test of water contamination in which the number of the colonies of fecal coliform-bacteria per 100 milliliter of water. The result is expressed as 'Coliform Microbial Density' and indicates the extent of fecal matter present in it. This data will be collected at the household level and reported as an average across the household sample. **Disaggregation**: By project; By location: plant and point of use **Frequency**: Baseline and Endline

						Baseline values: *Morogoro*: Mafiga Plant: Not Available Mambogo Plant: Not Available Point of end use: Not Available *Lower Ruvu:* Lower Ruvu Plant: Not Available Point of end use: Not Available Note: Baseline data from survey not yet available at the time of final M&E Plan revision, hence N/A values. **Target values**: Morogoro: Mafiga Plant: 0.00 Mambogo Plant: 0.00 Point of end use: 0.00 Source: MORUWASA (WHO standard) Lower Ruvu: Lower Ruvu Plant: 0.00 Point of end use: 0.00 Source: DAWASA (WHO standard)
Lower Ruvu Morogoro		Free Chlorine Residual	Mg/L	Chlorine, measured by milligrams per liter of water, available to inactivate disease-causing organisms, and thus a measure to determine the portability of water. This would be measured at both the	We recommend *revising* the data source, frequency of reporting, and baselines and targets, and *removing* disaggregation by Location (point of use and storage container)	In 2012 M&E Plan the incorrect source of data for this indicator was documented and therefore should be revised. Previously the M&E Plan disaggregated this indicator by location (point of use, storage container), but the responsible party is not able to report on this, so the disaggregation should be removed.

				service delivery site (plant) and point of use (pipe and household storage)		**Frequency**: Quarterly **Disaggregation**: By project; By location (Morogoro plant) **Baseline values:** Morogoro (2011): Mafiga: 1.0 Mambogo: 0.7 Source: MORUWASA 4th Quarter April-June 2012 Progress Report Lower Ruvu: 0.2 Source: DAWASA **Target values:** Morogoro: Mafiga: 0.2 Mambogo: 0.2 Lower Ruvu: 0.2 Source: MORUWASA/DAWASA **Primary Data Source:** MORUWASA/DAWASA monthly reporting template. **Responsible Party**: MORUWASA and DAWASA
Lower Ruvu		Volume of commercial water consumption	Cubic/ meters per month	Average monthly volume of commercial water consumption for past quarter	We recommend *revising* the indicator definition to consider apartment water consumption as commercial water consumption.	Previously, this indicator was understood to exclude all water consumption by residential complexes with primarily household water usage. However, DAWASA has been coding water consumption in apartment buildings as commercial consumption. This is due to

						the fact that many apartment buildings currently have only one water meter, and the landlord is responsible for payment. Therefore, water consumption data from apartment buildings is large and disaggregated from the household level. Apartment water consumption has been included in the commercial water consumption indicator. **Definition:** Average monthly volume of commercial water consumption for past quarter (For Lower Ruvu: definition includes residential apartment buildings)
Lower Ruvu		Volume of residential water consumption	Liters/capita per day	Average monthly volume of residential water consumption for past quarter	We recommend *revising* the indicator definition to consider apartment water consumption as non-residential water consumption.	Previously, this indicator was understood to include all residential complexes with primarily household water usage. However, DAWASA has been coding water consumption in apartment buildings as commercial consumption. This is due to the fact that many apartment buildings currently have only one water meter, and the landlord is responsible for payment. Therefore, water consumption data from apartment buildings is large and disaggregated from the household level. Apartment water consumption has been excluded from the residential water consumption indicator. **Definition:** Average monthly volume of residential water consumption for past quarter (For Lower Ruvu: definition excludes residential apartment buildings)

Output Level Indicator						
Lower Ruvu Morogoro		Schedule of Performance Ratio	Number	This is the ratio of Earned Value (actual progress made in US$ terms) to Planned Value (planned progress in US$) according to an agreed construction schedule.	We recommend *revising* the indicator name, unit, definition, and year 5 target	This indicator is a standard performance measure known as SPI (Schedule of Performance Index), but was incorrectly recorded as Schedule of Performance Ratio in the 2012 M&E Plan. The indicator name should be updated, therefore. Previously, the indicator unit was listed as "number" in Annex II, however it should be "ratio" to be more accurate. In addition, the definition requires clarification. Finally, the Year 5 target should be revised to align with the End of Compact target, as they should be the same. **Name**: Schedule of Performance Index **Unit:** Ratio **Definition:** Ratio of Earned Value on construction contracts (actual progress made in US$ terms) to Planned Value (planned progress in US$) according to an agreed construction schedule. **Year 5 target**: 1.0
Morogoro Lower Ruvu		Volume of water produced	liters/capita per day	Average volume of water produced by plan per day per capita served for last quarter	We recommend *revising* the definition, unit, classification, and Morogoro baseline values and targets, and *adding* a disaggregation by water treatment plant	In the 2012 M&E Plan, the unit and definition of the indicator were incorrect. Similarly, the classification was erroneously recorded as Cumulative, when it should be reporting the Level average each quarter. The baseline level of water production by the Morogoro plants was underestimated at 18.00 and

					for Morogoro	therefore needs to be revised. In addition, Morogoro water production should be disaggregated by water treatment plant to provide more detail. **Definition**: Total volume of water produced by plant per day, averaged over the last quarter **Unit:** Millions of liters per day (MLD) **Disaggregation**: Project, Water treatment plant (only applies to Morogoro) **Classification**: Level **Baseline values** (updated only): *Morogoro*: Mafiga: 19.00 Mambogo: 4.00 Source: Consulting Engineer Contract document – September, 29th 2010 **Target values**: *Morogoro*: Mafiga: 27.00 Mambogo: 6.00 Source: Consulting Engineer Contract document – September, 29th 2010
Lower Ruvu Morogoro		Total number of people temporarily employed/contra	Number	The number of people temporarily employed or contracted by MCA-contracted construction	We recommend *updating* target values from TBD, *revising* the indicator	The targets were previously listed as TBD and should be updated. The indicator definition should be clearer to mention type of workers considered under this

		cted by contractors		companies to work on construction of new water treatment plant or reconstruction, rehabilitation or upgrading of existing water systems (cumulative)	definition, primary data source/responsible party, and *removing* the disaggregation by gender	case; that is the indicator definition should specify whether both local and foreigner are included or not. In addition, the primary data source and responsible party for this indicator should be updated to be more specific. Finally, it is not possible for the responsible parties to provide gender-disaggregated numbers; therefore the gender disaggregation should be removed. **Definition:** The number of people (both local and foreigners) temporarily employed or contracted by MCA-contracted construction companies to work on construction of new water treatment plant or reconstruction, rehabilitation or upgrading of existing water systems (cumulative) **Target values:** Morogoro: Not applicable Lower Ruvu: Not applicable Note: No target set for this indicator **Primary Data Source**: Morogoro: MORUWASA monthly reporting template Lower Ruvu: Consultant's Monthly Progress report **Responsible Party**: Morogoro: MCA-T Water Sector Consulting Engineer and MORUWASA

						Lower Ruvu: MCA-T Water Sector Consulting Engineer and DAWASA
Process Level Indicators						
Lower Ruvu & Morogoro (joined)		Certificate for Environmental Impact Assessment (EIA) issued	Date	Date certificate for Environmental Impact Assessment (EIA) issued	We recommend *revising* the baseline and yearly targets	Annex II of the 2012 M&E Plan noted a baseline of 0, which is not appropriate for a Date unit indicator. In addition, the Year 2 target date was incorrectly listed as the actual date the certificate was issued and so should be corrected. **Baseline value**: Not applicable **Year 2 Target**: Jan 8, 2010
Lower Ruvu Morogoro		Value of design and feasibility contracts	US $	Total value of design and feasibility contracts	We recommend *revising* the indicator name, classification, baseline and target values, and data source, and *updating* the indicator definition	MCA-T had not been tracking supervision contracts in the Water Sector project, but should have been to be consistent with common indicators. The indicator name and definition should be updated to reflect the inclusion of supervision. This indicator was disaggregated by project in the 2012 M&E Plan, however disaggregated baselines and targets were not provided in Annex II. Baselines and targets must therefore be revised. In addition, the indicator definition would benefit from more detail and the correct source of data should be documented. Finally the follow-up source for this Indicator was proposed to be EPICOR only, however EPICOR is not the appropriate source for the contract values since it reflects allocations rather than values in the signed contract documents. We therefore recommend using the signed contract/modification document as the source for this indicator along with

						EPICOR. In addition, the indicator classification should be corrected to be Cumulative instead of Level, since the ITT should report the current contract value including any modifications. **Name**: Value of feasibility, design, and supervision contracts **Definition:** Total value of feasibility, design, and supervision contracts for rehabilitation, reconstruction and expansion of water treatment plants signed. Combined for Lower Ruvu and Morogoro. **Classification**: Cumulative **Baseline value:** $0 Source: Not applicable **Target value:** $6,590,490.83 Source: Original Water Sector contract documents prior to any modifications (signed on 24.02.2010) **Primary data source**: Original Water Sector Contracts; EPICOR **Responsible Party**: MCA-T Water Sector
Lower Ruvu Morogoro		Value disbursed of design and feasibility contracts	US $	Value disbursed of design and feasibility contracts to date (cumulative)	We recommend *revising* indicator name, baseline and target values, and *updating* the indicator definition	MCA-T had not been tracking supervision contracts in the Water Sector project, but should have been to be consistent with common indicators. The indicator name and definition should be updated to reflect the inclusion of supervision. This

						indicator was disaggregated by project in the 2012 M&E Plan, however disaggregated baselines and targets were not provided in Annex II. Baselines and targets must therefore be revised. In addition, the indicator definition would benefit from more detail. **Name**: Value disbursed of feasibility, design, and supervision contracts **Definition:** Total value disbursed of design, feasibility, and supervision contracts for rehabilitation, reconstruction and expansion of water treatment plants signed. Combined for Lower Ruvu and Morogoro. **Baseline value:** $0 Source: Not applicable **Target value:** $8,866,800.00 Source: Current Water Sector contract documents (including any modifications)
Lower Ruvu Morogoro		Value of construction contracts	US $	Total value of construction contracts	We recommend *revising* indicator classification, baseline and target values, and data source, and *updating* the indicator definition	This indicator was disaggregated by project in the 2012 M&E Plan, however disaggregated baselines and targets were not provided in Annex II. Baselines and targets must therefore be revised. In addition, the indicator definition would benefit from more detail and the correct source of data should be documented. The primary data source should be revised to include original contract/modification documents as well as EPICOR, for more

						accurate information. Finally, the indicator classification should be corrected to be Cumulative instead of Level, since the ITT should report the current contract value including any modifications. **Definition:** Total value of construction contracts for rehabilitation, reconstruction and expansion of water treatment plants signed **Classification**: Cumulative **Baseline values:** Morogoro: 0.00 Lower Ruvu: 0.00 Source: Not applicable **Target values:** Morogoro: $8,316,144 Lower Ruvu: $36,880,012 Source: Original Water Sector contract documents prior to any modifications **Primary data source**: Original Water Sector Contracts ; EPICOR **Responsible Party**: MCA-T Water Sector
Lower Ruvu Morogoro		Value disbursed of construction contracts	US $	Value disbursed of construction contracts to date (cumulative)	We recommend *revising* target values and *updating* the indicator definition	The targets provided for this indicator in the 2012 M&E Plan were not correct and therefore should be revised. In addition, the indicator definition would benefit from more detail.

						Definition: Total value disbursed of construction contracts for rehabilitation, reconstruction and expansion of water treatment plants signed **Baseline values:** Morogoro: 0.00 Lower Ruvu: 0.00 Source: Not applicable **Target values:** Morogoro: $ 10,714,236.00 Lower Ruvu: $ 36,940,012.00 Source: Current Water Sector contract documents (including any modifications)
Lower Ruvu Morogoro		Average annual household income per capita; Average current value of household assets per capita; Average current value of commercial assets; Under 5 mortality rate; Adult mortality rate; Incidence of diarrhea; Average hours worked last week; Percentage of children who missed any school in the last 4 weeks; Average time spent fetching water from home in last week; Percentage of households with access to improved water supply; and Continuity of service			We recommend *updating* reporting frequency for all listed indicators	The Annex I of the 2012 M&E Plan incorrectly documented reporting frequency. These indicators will only be reported on using survey data, therefore reporting will only be for Baseline and Endline. The exact timing for endline data collection is not currently known. **Frequency**: Baseline and Endline

2013 ANNEX IV: DETAILS OF IMPACT EVALUATION DESIGNS

1.1 Transport Sector Project

1.1.1 Mainland Trunk Roads and Pemba Rural Roads

The Mainland and Pemba Roads activities consist of upgrading approximately 435 km of trunk roads on the mainland in Tanga, Ruvuma, Rukwa, and Mbeya regions, and 35km of rural roads in Pemba. The November 2009 Impact Evaluation Design and Baseline Report for the Mainland Trunk and Pemba Roads prepared by the MCA-T evaluator and survey firm, Economic Development Initiatives (EDI), can be found here: http://www.mcc.gov/pages/countries/impact/impact-evaluation-for-tanzanias-mainland-trunk-roads-zanzibar-rural-roads/tanzania-compact. Below is a brief summary of the evaluation strategy for the Mainland and Pemba Roads Project.

Research Questions. The impact evaluation of the Mainland and Pemba Roads Projects will seek to answer the following research questions:

- Do the roads upgrading and rehabilitation reduce transport costs and travel times to markets and health facilities?
- Does a reduction in transport costs and travel times lead to increased access to and utilization of markets and economic activity in towns/villages near a road? Does it lead to increased household cash crop revenue?
- Does the reduction in transport costs and travel times lead to increased health care utilization and reductions in days sick? Do household members increase their productivity either in household or labor activities as a result?
- Was the Project cost effective, analyzed through re-estimated economic rates of return, comparisons to original estimates, and assessment of differences?

In addressing the key questions above, the evaluation will also address:

- Differences in impact of the program, by gender, age, and income, when practicable.
- Unintended results of the program (positive and negative);
- Lessons learned applicable to other similar Projects

Evaluation Design: Given the possibility of estimating a counterfactual during the design phasein 2008, the MCA-T invested in an *impact evaluation* of the Mainland and Pemba Roads Project; this was reclassified as a *performance evaluation* following the 2011 DQR, which indicated that roads that were identified as the control were no longer viable comparisons. In 2012, MCC contracted NORC to redesign the evaluation, with an attempt to identify a feasible quasi-experimental impact evaluation methodology and to use the EDI data as a baseline to the

extent possible. The evaluation design was still under review by MCC and MCA-T at the time of the final M&E Plan revision and the final design report is expected by June 2013. Depending on the outcome of NORC's proposal, the Mainland and Pemba Roads evaluation may be an *impact evaluation*, otherwise it will remain classified as a *performance evaluation*.

Originally, EDI proposed a combination of propensity score matching and difference-in-differences regression to evaluate the impact of the rehabilitation of the roads on the socioeconomic development of the communities along the roads. Combining propensity score matching and difference in differences regression can be used to reduce biases that can undermine the validity of non-experimental causal studies.

The general idea was to match the communities along the roads scheduled for upgrades (the treatment communities) with other communities that had similar characteristics but would not benefit from the road upgrades (the comparison communities). On the Mainland, similar control roads that would not be upgraded were identified and communities along those roads were matched to the sample communities along the treatment roads. On Pemba, no viable control roads could be identified, therefore treatment communities were matched to comparison communities in the same part of the island that were farther away from the project roads. Matching should typically result in two comparable groups of communities: one group that is situated along the roads and will receive the benefits of road upgrades and another group that will not. EDI collected pre-treatment data in 2009 and expected to collect post-treatment data in 2014. If the difference between the post-treatment and pre-treatment value of an outcome variable were different for the treatment group than for the comparison group, this difference could have been attributed to the road upgrades (since both groups were similar before treatment thanks to matching, then differences between the two would most likely be a result of the treatment).

Results of Baseline Data Collection. The baseline analysis demonstrated that treatment and comparison communities for the Mainland sample were comparable in terms of welfare indicators (literacy, poverty headcount, land size), access to key infrastructure (markets, roads and schools), and road quality. Notable differences between the treatment and comparison vitongoji (sub-units of villages) were the traffic volume on their roads (higher for the treatment roads) and the time it took to travel to the District Capital using public transport (higher for the comparison vitongoji). Using propensity score matching to get a balanced and comparable sample of treatment and comparison vitongoji, the final sample consisted of 100 treatment and 99 comparison vitongoji (one comparison vitongoji had to be dropped due to its unique nature).

For the Pemba sample, treatment villages seemed better-off, as evidenced by higher literacy rates, higher consumption expenditures and a lower incidence of poverty (poverty headcount of 20.8% in treatment villages vs. 36.8% in comparison villages). More treatment villages had a

daily market and people from the treatment villages had to walk less far to reach a bus stop. Propensity Score Matching resulted in a balanced sample of 38 treatment and 26 comparison villages.

Risks to Evaluation Design. As of December 2011, the MCA-T completed its first initial Data Quality Review, led by IDEA International. The DQR flagged the following risks and, when possible, suggested ways to improve the Mainland and Pemba roads impact evaluation design:

- *Counterfactual*. The comparison road in the Tanga region is not suitable as a counterfactual. Tanga – Horohoro is a Trunk road, while the comparison road is the Mabokweni – Bombomtoni that is perpendicular and does not have the same potential for growth as it does not lead to the Kenya border. In addition, Mabokweni village is losing benefits as a consequence of a redesign of the treated road, which is now 800 m farther away. This also raises concerns about the validity of other selected counterfactual roads and communities.
- *Survey Design*. There is a need to review the surveys and ensure linkage between data collection and data required for the M&E plan. The EDI baseline questionnaire considers only the 3 main cash crops. There were also inconsistencies in the questionnaire for the reference period used for crops sales, with some questions asking for the last year and others the last harvest. In addition, there are no questions in the survey questionnaire on prices and quantities of cash crops sold which limits the estimate to self-reported total revenue per crop. The follow-up questionnaire should be adjusted for the last survey round to estimate total cash crop production and selling price in order to increase accuracy.
- *Qualitative Data*. The use of qualitative data collection tools during the final survey round, i.e., adding qualitative questions on the perception in improvements in socio-economic conditions of households due to the roads project, could provide complementary information useful to the evaluation of the project.

In addition, NORC visited both treatment and control roads and communities associated with the Tunduma-Sumbawanga, Mtwara Corridor, and Pemba roads during their study design trip in February 2013 and found that comparison communities were experiencing benefits related to the treatment road upgrades. These findings clearly indicated that the original EDI evaluation design would not be feasible.

Next Steps. Given that communities along the upgraded roads are already experiencing benefits prior to the final completion of the roads (another finding of NORC's field visit) it is not possible to collect new baseline data that would mitigate some of the weaknesses identified in the EDI baseline. Therefore, the EDI data set and other relevant surveys, such as the National Panel Survey, will serve as the baseline for the Mainland and Pemba roads evaluation. NORC, together with MCC and MCA-T, will finalize the revised evaluation design by June 2013, and depending on the final methodology, end line data will likely be collected in 2015 or 2016. A

different evaluation strategy will likely be employed for the Mainland and Pemba evaluations. Final results are expected in 2016, however Pemba Road results may come later, as rural road interventions take longer to have measureable impacts on outcomes of interest.

1.1.2 Road Traffic County Survey (RTCS) (Mainland Roads)

The main activity of the RTCS will be to measure the average daily traffic count on the upgraded project roads. The data obtained through this survey will be used to estimate values of some of the indicators to measure the expected outcomes of the MCC investments in the Mainland Trunk Roads activity. It is planned that the survey should be implemented between end of -May and end of August 2013.

The broad objective of the RTCS is to establish the current values of indicators related to road use, costs and travel time on the roads funded by the MCC; i.e. easy access to markets, schools and health facilities; reduction of travel time and cost, and vehicle maintenance costs. The RTCS aims at answering the following questions:

i. What is the current volume of traffic on the roads that have been or are in the process of being constructed / rehabilitated?
ii. What types of vehicles (using international classification standards), are mostly using the constructed / rehabilitated roads?
iii. What is the current on travel time and road user cost between strategic points on the roads included in the project?
iv. What are current vehicle maintenance costs for vehicles that are regularly driven on these roads?
v. What is the level of small enterprise that has developed along the roads since works began: number and type of enterprises?

The specific objectives of the RTCS, therefore, are:

i. Estimate the Average Annual daily traffic (AADT) on each of the new roads under MCA-T transport sector covered in this study;
ii. Assess the types of vehicles that use the roads rehabilitated / constructed using MCC funding
iii. Estimate the travel time and road user cost between the two ends of each road and between selected strategic locations linked to the new roads;
iv. Estimate the average monthly maintenance costs for different categories of vehicles that regularly travel on the roads constructed / rehabilitated using MCC funding.
v. Estimate the number and type of small enterprises along the roads.

The RTCS will cover all the MCA-T Transport sector roads excluding the Tunduma-Sumbawanga road and the Pemba rural roads, whose construction works are still intense. The survey will include the enumeration of vehicles, including the recording of registration numbers, interviewing of randomly selected drivers and passengers traveling from both directions of the road at two selected locations on each of the roads. The process of procuring a consulting firm to implement this study is ongoing.

1.1.3 Road Maintenance Activity

The Road Maintenance activity provides equipment and technical assistance to TANROADS (Mainland) and MOIC (Zanzibar) for the purpose of improving roads maintenance capabilities at the two institutions. The overall impact of the various components of this Activity will be assessed by proxy, by monitoring yearly spending of the planned annual road maintenance budget even after the Compact closes. This draws on the assumption that the technical assistance and equipment will lead to more accurate planning and implementation of maintenance activities. The Mainland and Pemba roads follow-up study conducted by NORC may also involve a qualitative study of how well TANROADS and MOIC are utilizing the maintenance equipment and training, however this will be decided in the final evaluation design. Given that this Activity was finalized late in the Compact, its evaluation could not be incorporated into the Mainland and Pemba Roads baseline study (2009).

1.1.4 Mafia Island Airport Upgrade

The main activity Mafia Island Airport Upgrade project is to upgrade approximately 1.6km of airport runway. The preparation and implementation of the baseline survey for the Mafia Island Airport Upgrade Evaluation was completed between February and June 2012, and the baseline report was submitted in September 2012. Copies of both the concept note and report for the evaluation are available at the MCA-T M&E Directorate.

Research Questions.The performance evaluation of the Mafia Island Airport Upgrade project seeks to answer the following research questions:

i. Has the Mafia Island Airport Upgrade Project contributed to easier, more efficient, and safer access to Mafia Island?
ii. Has the Mafia Island Airport Upgrade project contributed to an increase in (i) tourism and/or (ii) business travel?
iii. Has the Mafia Island Airport Upgrade project contributed to an increase in visitor spending on the island?
iv. Has the Mafia Island Airport Upgrade project contributed to an increase in economic and investment activities on the island? (hotel, wildlife refuge, food industry, etc.)

v. Was the Project cost effective, analyzed through re-estimated economic rates of return, comparisons to original estimates, and assessment of differences

In addressing the key questions above, the evaluation will also address:

i. Differences in impact of the program, by gender, age, and income, when practicable.
ii. Unintended results of the program (positive and negative);
iii. Lessons learned applicable to other similar Projects

Evaluation Design. Given that a counterfactual could not be established for the runway upgrade, an experimental/quasi experimental design to evaluate the impact of the project was not possible and therefore a performance evaluation strategy was adopted. MCA-T procured an individual consultant (Abel Busalama) to lead the evaluation of the Mafia Island Airport Upgrade activity. The Mafia Island evaluation included a small primary data collection effort, consisting of: Hotel Manager Survey, Hotel Guest Survey, Passenger Exit Survey, Village Leader Survey, Male Focus Group Interviews, Female Focus Group Interviews, and Individual Interviews. It also relied on secondary data sources.

Risks to Evaluation Design. Given that this is a performance evaluation, the evaluator will maximize the learning from the primary data collection, but there is minimal risk to the evaluation design.

Next Steps. The endline survey for the Mafia Island Airport Upgrade evaluation is expected in between February and June of 2015, to match the timing of the baseline data collection and allow for at least a one-year exposure period. Final results are expected in late 2015.

1.2 Energy Sector Project

The March 2011 Impact Evaluation Design Report for the Mainland T&D and Zanzibar Cable Activity prepared by the MCC evaluator, Mathematica Policy Research, Inc. (MPR), can be found here:
http://www.mcc.gov/pages/countries/impact/impact-evaluation-for-tanzanias-electricity-distribution-systems-rehabilita/tanzania-compact

1.2.1 Zanzibar Cable

The Zanzibar Cable Interconnector project consists primarily of laying a new submarine power cable between the mainland and Zanzibar and constructing additional transmission and distribution lines on either side.

Research Questions. The main research question for the Zanzibar Cable evaluation is: *What are the impacts of building a new electricity cable between Zanzibar and the mainland?*

The evaluation will focus on the impacts of the intervention on the following outcomes of interest:

- Business utilization/take-up (%)
- Power availability (hrs)
- Total expenditure on electricity ($)
- Total annual business revenue ($)
- Total annual wages ($)
- Total annual expenditure on energy ($)

The evaluation will also measure whether or not the Project was cost effective, analyzed through re-estimated economic rates of return, comparisons to original estimates, and assessment of differences.

In addressing the key questions above, the evaluation will also address:

- Differences in impact of the program, by gender, age, and income, when practicable.
- Unintended results of the program (positive and negative);
- Lessons learned applicable to other similar Projects

Evaluation Design. MCA-T has invested in a *performance evaluation* of the Zanzibar Cable Activity. Given that the project intervention was likely to impact power customers across Unguja island in the same time period, the probability of identifying a feasible comparison group was low. Consequently, MPR used a pre-post design to analyze the monthly administrative data from the indicator tracking table (ITT) that ZECO submits monthly to MCA-T on electricity use, reliability, and quality for all of Unguja before and after the laying of the cable. To obtain the most precise estimates possible, MPR will use all months of the ITT data that are available when estimating impacts on use, reliability, and quality, except for data during the blackout months when power outages that lasted more than one day. Since there were only two blackouts in Zanzibar caused by the cable in recent decades, MPR does not expect to have enough statistical power to say anything conclusive about the likelihood that the cable reduces the incidence of blackouts. MPR cannot make the link between the cable and customer-level outages given sample size and conditions of the distribution network. MPR will ask for opinions from engineers about the likely impact of the cable on the possibility of future blackouts and include a summary of those opinions in evaluation reports.

MPR will also conduct a case study of the hotel industry in Unguja Island. The hotel case study will consist of two components. First, a pre-post evaluation design to estimate the impacts of the cable activity on key outcomes such as electricity use, reliability, and quality. Baseline data on

these outcomes have already been collected from 30 hotels on Unguja Island. MPR will collect data on these same outcomes from the same hotels one year after placement of the cable, allowing for a pre-post comparison of the outcomes of the hotels affected by the cable activity. To focus the study on the hotels likely to have the largest impact on the economy of Zanzibar, the 30 hotels were randomly selected from among the 45 largest hotels on Unguja Island.

The second component of the hotel study is a description of what hotels reported about the impacts of the two recent blackouts on their business activities. Together these components will help develop a richer understanding of the impacts of the cable activity.

The pre-post design cannot definitively estimate causal impacts of the cable activity because it cannot distinguish between changes in the outcome measures that are attributable to the cable and those that may be attributable to other simultaneous interventions or time trends. Changes that might occur simultaneously with the installation of the new cable include changes in investment in industries on Unguja Island, changes in demand for the products and services originating on the island, both of which could impact electricity use, or changes in the amount of electricity provided to Zanzibar from the mainland. To estimate impacts using the pre-post method, MPR will estimate an equation similar to those for the difference in differences (for the T&D activity), but without a comparison group.

MPR will also explore controlling for any time trends in use, reliability, and quality that appear before the introduction of the cable, using various functional forms such as a linear control variable for time or various quadratics (time squared and time cubed). If data are available on the degree to which the mainland limited electricity availability to Zanzibar through rationing then MPR will control for that as well.

Risks to Evaluation Design. Given that this is a performance evaluation, MPR will maximize the learning from the primary data collection, but there is minimal risk to the evaluation design.

Next Steps: An Interim Report analyzing administrative data from ZECO is expected in July 2013. Endline data collection is expected to take place in Zanzibar between June and August 2014, allowing for an exposure period of over 1 year. It will include the various evaluation components described in the Evaluation Design above. Final results are expected in early 2015.

1.2.2 Mainland Transmission and Distribution (T&D)

The Mainland T&D activity consists primarily of constructing T&D lines across 7 mainland regions and upgrading substation capacity. Given the possibility of establishing a counterfactual, the MCA-T is investing in an *impact evaluation* of the Mainland Transmission and Distribution Activity.

Research Questions. Under the T&D impact evaluation, MPR has proposed two research questions:

(i) What are the impacts of the MCC energy sector interventions in the T&D areas of mainland Tanzania?

(ii) What mechanism is more effective in increasing household connection rates?

The main evaluation will measure impacts on the following key outcome indicators:

- Household-level
  - Household utilization/take-up (%)
  - Power availability (hrs)
  - Total expenditure on electricity ($)
  - Quantity of other energy consumption (kg)
  - Household members who had either respiratory or vision problems (%)
  - Hours spent studying last week (#)
  - Total household consumption ($)
- Business-level
  - Business utilization/take-up (%)
  - Power availability (hrs)
  - Total expenditure on electricity ($)
  - Total annual business revenue ($)
  - Total annual wages ($)
  - Total annual expenditure on energy ($)
- Community level activities (schools, health facilities)

The evaluation will also measure whether or not the Project was cost effective, analyzed through re-estimated economic rates of return, comparisons to original estimates, and assessment of differences.

In addressing the key questions above, the evaluation will also address:

- Differences in impact of the program, by gender, age, and income, when practicable.
- Unintended results of the program (positive and negative);
- Lessons learned applicable to other similar Projects

The results of this evaluation are of primary interest for MCC in order to assess the impact of the investment.

However, available evidence on impacts of electrification in the literature suggested a need to assess the evaluation design and research questions. A summary of the literature is below:

- There is very limited evidence about the impacts of rural electrification on poverty, education, health, and the environment (Bernard 2010, Bernard and Torero 2009, IEG

2008). However, the available evidence on rural electrification might have weaker relevance for the peri-urban areas in Tanzania where many of the MCC funded T&D lines are being built.

- Connection rates to electricity remain low in many African countries, even for households in communities that are connected; this is particularly prevalent among poorer rural households. See, for example, ESMAP 2007 (Senegal), Jacobson 2007 (Kenya); Ketlogetswe, Mothudy and Mothibi 2007 (Botswana), Heltberg 2003 (South Africa and Ghana), and IEG (2008).
- A handful of rigorous evaluations suggest that rural electricity reduces expenditures on lighting (in Ethiopia; Bernard and Torero, 2009), increases home production and female employment via more efficient home production (in South Africa; Dinkelman 2011), and increases farm income through irrigation (in Vietnam; Khandker et al. 2009).
- Available evidence also suggests that benefits accrue to households primarily through having been connected to electricity. While there is some evidence of benefits through increased economic activity and improved health and educational services at the community level, the benefits are smaller or less clear relative to the benefits that directly accrue to the household (Bernard and Torero 2009, Dinkelman 2011, IEG 2008).

During early discussions related to the T&D evaluation design, there was a concern that the financial barrier (est. $300 connection fee at time of discussions to connecting to the electricity lines once built would prevent many households from connecting, especially the poor. The average per capita annual income of the poorest 60% of households in 2010 was only $780 (PPP-purchasing power parity; $300 at market prices.[1]) This concern was addressed by TANESCO on January 1, 2013, when they lowered the customer connection fee to USD 200 for urban customers and USD 110 for rural customers. These amounts include V.A.T.

Prior to this reduction, however, plans were developed for the Customer Connection Financing Scheme (CCFS), through which MCA-T and TANESCO are jointly providing subsidized connection fees of about USD 24 to approximately 5,800 households and 200 government-owned public institutions in 29 randomly selected pilot communities in the T&D regions. The primary motivation for this subsidy pilot was to ensure that customers connect to the new lines so that the intended project benefits can actually be realized. In addition, encouraging customer connections would provide the impact evaluation the treatment sample size necessary to gain a more complete understanding of the potential long-run benefits of the line extension work. The CCFS was kicked-off in the first wave of communities in Dodoma, Mwanza, and Tanga in February 2013, and will be followed by a second wave of communities in Kigoma, Morogoro, Mbeya, and Iringa. Camco has been hired to implement the CCFS, involving awareness campaigns about the benefits of switching to electricity and the logistics of applying for connections, in collaboration with TANESCO.

[1] Sources: World Bank Indicators Databank ; and CIA Fact Book.

Baseline Data Collection. From August-November 2011, MPR and the survey firm, NRECA, managed household and enterprise data collection for the T&D study. Note that only the 6 original Mainland T&D regions were covered in the baseline, so Kigoma was not included. For the baseline household survey, households were randomly selected from each intervention and comparison community. Survey eligible households were considered those households which were not connected to an existing line and 30 meters or more from existing lines. In the household survey, MPR asked each household about any enterprises it owns. While some enterprises were identified in the household survey in some communities, aggregation of the data across all households in the sample (about 10,000) should produce information on a reasonably large number of businesses. In addition, when comparing the baseline and follow-up survey results, it will be possible to determine any increase in business activity.

For the enterprise survey, MPR used similar sampling methods to those for the household survey. The enterprise survey will complement the household survey by providing more detailed information on larger businesses. However, to keep this part of the study cost-effective, it was limited to a case study of only a small number of businesses in the Tanga region.

The baseline reports of these surveys were completed in December 2012 and are available at MCC and MCA-T.

Risks to Evaluation Design. The key risks identified as of December 2011 to the main T&D evaluation are summarized below:

Table 1: Summary of T&D Evaluation Risks and Risk Mitigation Strategies

Risk	Mitigation Strategy
T&D evaluation	
Take-up of electricity will be low, particularly for poor households, given barriers to connection (high cost, cultural barriers)	The CCFS will help to mitigate the risk that no impacts are found simply because of low connection rates.
At baseline, 17% of comparison communities (31 communities) were planned to be electrified by 2012 with funding from MCC (7 communities), REA, TANESCO, AfDB, and SIDA. This is a threat for the T&D evaluation as it alters the counterfactual.	This will be monitored during the evaluation and implementation phase. Depending on the scale of the problem, crossover adjustments applied in the impact analysis can mitigate this threat by providing estimates of the impacts for communities that would not get lines without the MCC interventions.

	As of December 2011, MPR did not feel that this risk was substantial enough to warrant any mid-course corrections on the T&D evaluation, including sample sizes for the intervention and comparison.

Next Steps. Endline data collection should occur between August and November 2014, allowing for an exposure period of over 1 year, with final results expected by mid-2015. The Endline study will include Kigoma region.

1.2.3 Kigoma Solar

As of March 2013, the Kigoma Solar project is in advanced stages of implementation. This activity involves installing solar modules and other electric systems in 45 schools, 130 health facilities, 45 markets, 60 fishing boats, and marketing household solar systems for commercial purchase, all in the Kigoma region of Tanzania. Given the high level of coverage of the program in the two targeted districts and the associated challenge of identifying an appropriate counterfactual, a *performance evaluation* was chosen for this project.

In March 2013, MCA-T contracted a consultant (Abel Busalama) to conduct a *performance evaluation* of the activity.

Research Questions. The evaluation of the Kigoma Solar Project will seek to answer the following questions:

i. How well was the program implemented? (include analysis of Project scope, timing, costs, and public perceptions)
ii. What type the challenges were encountered during implementations
iii. How well has the solar energy approach addressed the energy needs of the beneficiary population?
iv. What are the outcomes of the program on solar energy access use and costs as well as productivity income etc.?
v. How sustainable are the outcomes?
vi. What lessons can be learned from the experience of the program?
vii. Was the project successful in catalyzing investments in the energy sector in Kigoma? If not what conditions will needs to be in place for the pilot to encourage additional investments

In addition to the above, the evaluation design and subsequent data gathering activities will address the following key research questions on outcome, objectives and Compact Goal:

i. Has the Kigoma Solar Project contributed to an improvement in electricity service coverage across different customer types?
ii. Has the Kigoma Solar Project contributed to an improvement in the quality of electricity available, across different customer types?
iii. Has the Kigoma Solar Project contributed to an increase in consumption of electricity, across different customer types?
iv. Has the Kigoma Solar Project contributed to an increase in investment in economic activities across different customer types?
v. Has the Kigoma Solar Project contributed to an improvement in human capital accumulation across different customer types?
vi. Has the Kigoma Solar Project contributed to a reduction in poverty across different customer types, as measured by household income per capital?

The evaluation will also contribute to measuring whether or not the Project was cost effective, analyzed through re-estimated economic rates of return, comparisons to original estimates, and assessment of differences

Evaluation Design. The performance evaluation will rely significantly on primary data collection using qualitative and quantitative surveys conducted with PV system end users (e.g. schools, health centers, market sellers, fishermen, and households). The study will mainly employ a before-and-after comparison for analysis, however will try to identify similar comparison groups that did not receive PV installations, where possible. Baseline data collection will take place after installations have already taken place and will therefore rely on recall data to establish a pre-intervention baseline.

Risks to Evaluation Design. Given that the evaluation is starting after project implementation, there is a risk that the evaluator will not be able to establish accurate baseline levels of indicators of interest. The evaluator will rely on recall data from survey respondents, however this is vulnerable to errors and bias.

Next Steps. Baseline data collection will take place from June to July 2013 and the report is expected by September 2013. Endline data collection will take place in 2015 to allow for at least a 1-year exposure period and may be combined with the Kigoma T&D data collection effort that will be taking place that same year in order to minimize data collection costs. Final results are expected in late 2015 or early 2016.

1.3 Water Sector Project

The Water Sector Project consists primarily of increasing the production capacity of the Lower Ruvu water treatment plant and both increasing production capacity and improving water quality

at two water treatment plants in Morogoro. Social Impact (SI) was contracted to lead the *impact evaluation* activities for this project.

1.3.1 Lower Ruvu and Morogoro

Research Questions. The evaluation of the Water Sector Project will seek to answer the following questions:

i. Does the MCC investment lead to better quality and more reliable water at the population level?
ii. Does access to better quality, more reliable water lead to increased household income through (i) lower prices paid for water as sources of water change, (ii) less time spent getting water so more time can be spent elsewhere, and (iii) fewer days spent ill or caring for ill family members and away from production?
iii. Does access to better quality, more reliable water lead to better health outcomes, in particular, a reduction of diarrhea among children under 5 years and of water-related disease?
iv. Was the Project cost effective, analyzed through re-estimated economic rates of return, comparisons to original estimates, and assessment of differences

In addressing the key questions above, the evaluation should also address:

i. Differences in impact of the program, by gender, age, and income, when practicable.
ii. Unintended results of the program (positive and negative);
iii. Lessons learned applicable to other similar Projects.

Evaluation Design. In 2012, SI presented a design for the Water sector *impact evaluation*, which uses a rigorous, quasi-experimental methodology combining a difference-in-differences (DD) approach with generalized propensity score matching (GPSM), also called continuous propensity score matching. Generalized propensity score matching is an extension of traditional propensity score matching (PSM) techniques, and facilitates the evaluation of continuous rather than binary treatment. For example, since the Water intervention is expected to result in an across-the-board increase in water availability for urban populations in Dar es Salaam and Morogoro, it is more appropriate to measure the differential impact of the project on households with differing levels of access, rather than no access vs. access. The evaluation will consist of household surveys, water quality testing, and qualitative surveys with key informants. In March 2013, MCA-T contracted EDI to conduct the baseline survey data collection for water sector. The firm started data collection in Morogoro in April 2013 and the baseline survey for both Morogoro and Lower Ruvu will continue from May to August 2013.

Risks to Evaluation Design. The main risk to the Water evaluation stems from the changing project completion timeline, particularly in the case of the Lower Ruvu project. In order for the

Lower Ruvu upgrades to be put into effect, the GoT must finish building a new transmission main that will carry water from the plant to Dar es Salaam. This work is expected to be completed by February 2014, however it is possible that it may be delayed until mid-2014 or even into 2015. This poses challenges for timing the Lower Ruvu baseline data collection, as we want to collect data as close to start of the intervention as possible, in order to capture the most accurate baseline and to mitigate the risk of respondent attrition between baseline and follow-up surveys. MCA-T is working closely with the Water Sector to monitor progress in both Morogoro and Lower Ruvu and adjust data collection timelines accordingly, where possible.

Next Steps. The baseline report is expected by December 2013. The timing of endline data collection will depend on when the projects are completed. Morogoro data collection is expected between April and August 2015, to allow at least a 1-year exposure period. Lower Ruvu data collection will be delayed until at least 1 year after the transmission main has been completed and the increased water flow from the project has gone into effect. If the transmission main construction is delayed beyond June 2014, an additional short baseline survey may be required in Lower Ruvu, shortly before the new completion date, to get updated information on water access and health indicators. This is because certain indicators of interest may have changed between the original baseline data collection time period and the start of the actual intervention, which could bias impact estimates.

1.4 Gender Integration Program

The purpose of the Gender Integration Program (GIP) is to ensure that MCA-T-funded interventions in the infrastructure sector facilitate unbiased access to opportunities and benefits awarded to women, men, female and male youths, the disabled, and other stakeholders. Through this program, training was conducted with skill-based groups (SBGs) located in project areas, that were expected to benefit from MCA-T infrastructure projects. This training was intended to improve the skills of SBGs and prepare them to advantage of MCA-T project benefits. The focus was to enhance the capability of the group leaders, particularly to impart leadership skills, entrepreneurship skills, proper group funds management skills, and hygiene and sanitation education. In November 2012, MCA-T contracted an individual consultant (Stella Manda) to conduct a *performance evaluation* of the GIP training.

Research Questions. There are two components to the study: (1) Evaluating the implementation and impact of the GIP training, and (2) Understanding the benefits that SBGs expect to experience as a result of Compact projects. The associated research questions include:

i. What are the perceptions and recommendations of the GFPs and the SBG leaders for the GIP and the GIP training?

ii. How did the GIP and the GIP training at the different levels and for different exposure periods; contribute to improvements (achievement) in SBG skills (as groups, leaders and individuals)?
iii. What are the main characteristics of the GFPs, SBGs, SBG Leaders and SBG Members?
iv. What is the current level of services available to the SBGs and their male and female members with respect to MCA-T investments?
v. What impacts do the SBG leaders (both trained and non-trained) anticipate will result from the MCA-T investment (Transport, Energy, Water)?
vi. How can SBG members maximize the benefits from the investment? What challenges do they think they will face in order to maximize benefits?

Evaluation Design. The SBG *performance evaluation* is designed to be a mostly qualitative study of the effectiveness of the GIP trainings and the expectation of benefits from the MCA-T projects among targeted SBG members. It will rely on SBG member perceptions of the GIP training to assess the program's impact and document expectations of project benefits. The study will involve focus group discussions and key informant interviews with SBG members, district Gender Focal Points, and other local stakeholders. The qualitative data about project benefits and expectations gathered through this study will complement the ongoing sector-specific evaluations. The study will utilize just one round of data collection, since the GIP trainings have already been implemented and since separate evaluations of the projects themselves are already taking place.

Risks to Evaluation Design. Given that there is no baseline for the SBGs prior to the GIP training, it will be difficult to accurately assess the effectiveness of the training. However, since this is a performance evaluation focusing on qualitative information, it is already understood that the magnitudes of impact will not be estimated. Instead, the study will provide a rich set of qualitative data that will provide insight into how beneficiaries view both the trainings and the anticipated utility of the MCA-T projects. As such, there is minimal risk to the evaluation design.

Next Steps. Data collection will take place between April and June 2013 and final results are expected by August 2013.