

# **Monitoring and Evaluation Plan**

Vanuatu Transport Infrastructure Development Program

**Acknowledged and Approved:**

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# Monitoring and Evaluation Plan

## Vanuatu Transport Infrastructure Development Program

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## Introduction

The Monitoring and Evaluation (M&E) plan is an essential and integral component of any MCC program. The Vanuatu M&E Plan serves the following functions:

- Describes the goal of the Program and explains how the MCC and MCA-Vanuatu will monitor the Project progress and benefits in order to determine whether they are achieving their intended results.
- Serves as a guide for Program implementation and management, so that MCA-Vanuatu staff, steering committee members, and Implementing Entities understand the results they are responsible for achieving.
- Details the mechanisms for quarterly and annual reporting on results to track progress and contribute information towards potential needed Program Adjustments.<sup>1</sup>
- Describes methodology for evaluating the relationship between project activities and the program's goals and objectives.

This M&E Plan is considered a binding document, and failure to comply with its stipulations could result in suspension of disbursements. It may be modified or amended as necessary only with the approval of MCC and if it is consistent with the requirements of the compact and any other relevant supplemental legal documents.

This current version represents revisions as of the "revised and updated" date listed on the cover page. The plan was revised to reflect changes in the Program that have taken place since Entry into Force (EIF), as well as updated sources of data that will provide better tracking of results.

## 1. Summary of Program and Project Activities

The overall objective of this Compact is to reduce poverty and increase incomes in rural areas by stimulating economic activity in the tourism and agricultural sectors through the improvement of transport infrastructure, which is key to economic growth and poverty reduction in Vanuatu (the "**Compact Goal**"). By focusing on one of the principal factors constraining private sector development and access to social services – namely poor roads – the program intends to reduce transport costs and improve reliability of access. By reducing transport costs, the program expects to stimulate agricultural and tourism activity in rural areas, thereby increasing incomes and reducing poverty.

Originally Vanuatu's MCA Program ("Program") consisted of two principal project activities: (i) civil works for the reconstruction or construction of priority infrastructure on eight islands, covering roads, wharfs, airstrips and warehouses (the "Infrastructure Activity"); and (ii) institutional strengthening efforts in the Public Works Department ("PWD"), including the provision of plant and equipment for maintenance of the infrastructure (the "Institutional Strengthening Activity"). However due to various unforeseen economic circumstances that drastically increased construction costs, the scope of work has been reduced to funding two road projects on the islands of Efate and Santo, and a reduced scope of institutional strengthening.

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<sup>1</sup> It should be noted that the M&E Plan is not the only tool used for program management of the Compact. The M&E Plan includes indicators to track progress at the process, output, outcome, objective and goal levels. Outcome, objective, and goal indicators help to track progress over the long-term and higher level. Process and output indicators help to track achievement of key milestones and delivery of goods and services. Several other program management components, though, provide more detailed benchmarks to track this type of progress, including work plans, construction supervisor reports, etc.

## Infrastructure Activity

MCC Funding and additional funding from NZAID will be used to rehabilitate or construct priority infrastructure (each an “Infrastructure Subproject Activity”), including:

- (i) Efate - Ring Road. Upgrade 92 km of the Ring Road on Efate, the most populous of Vanuatu’s islands, to a two-lane bitumen seal standard, with improved drainage systems; and
- (ii) Santo - East Coast Road. Upgrade the 57 km road from Luganville to Port Olry on the island of Santo to a two-lane, bitumen seal standard as far as possible and a two-lane high quality unsealed standard for any portion that cannot be sealed, including associated drainage structures.

Given funding constraints the following infrastructure sub-projects will no longer be rehabilitated using MCC funding;

- i. Santo - South Coast Road Bridges.
- ii. Malekula - Norsup Lakatoro Lits Lits Road.
- iii. Malekula - South West Bay Airstrip.
- iv. Pentecost - Loltong Wharf and N-S Road.
- v. Tanna - Whitesands Road.
- vi. Epi - Lamén Bay Wharf.
- vii. Ambae - Road Creek Crossings.
- viii. Malo - Road Upgrade.
- ix. Warehouses (Several Locations)

## Institutional Strengthening Activity

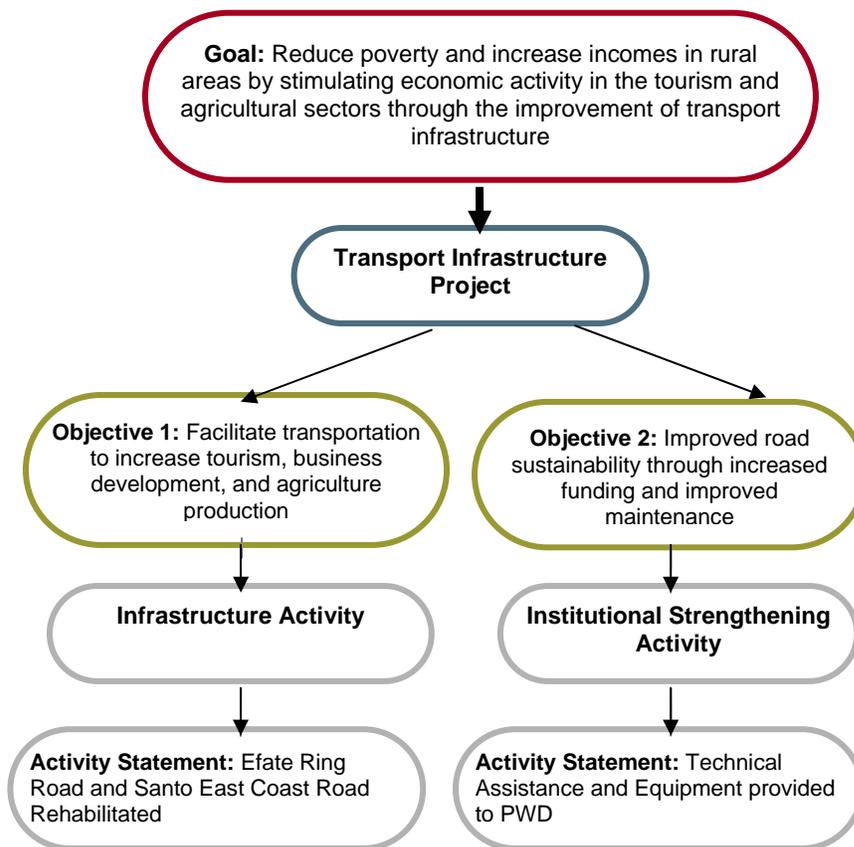
Recognizing the importance of maintenance of transport infrastructure, the Institutional Strengthening Activity will provide focused assistance to the PWD to remove key constraints that the department faces in effectively delivering maintenance and repair services. Under the Institutional Strengthening Activity, the Program also provides support for the sustainability and viability of the PWD through organizational reform and policy changes. MCC Funding will be used for:

- (i) Plant and Equipment. Provide essential plant and equipment to maintain the various transport infrastructures. MCC funding will be used to supply new equipment (value of up to approximately USD \$1.59 million) to PWD for infrastructure maintenance.
- (ii) Technical Assistance. PWD will enter into a Service Performance Agreement with the Ministry of Infrastructure and Public Utilities, by which PWD will be required to meet specific performance targets through an annual action plan utilizing an increase budget for road maintenance from the government of Vanuatu. Annual audits will be undertaken to measure PWD’s performance against the targets, which will form the basis for management accountability.

## Program Logic

The following Program Logic represents the basic outline of the Program and the expected causal links between the Project Activities and the Program Objectives and Goals.

**Figure 1: MCA-Vanuatu Program Logic**



## 2. Program Impact

### Economic Impact

The economic impact of the compact was estimated by forecasting the probable economic value-added benefits of each project relative to the costs, as encapsulated in the economic internal rate of return (ERR).

The original ERR for the overall program was estimated to be 24.2%, calculated based on the sum of all costs and benefits over a 20-year time horizon, for all original planned sub-projects. Only benefits that could reasonably be expected to generate quantifiable economic returns (increases in value-added) were included in the analysis. Costs and benefits were estimated using the best available data. Conservative assumptions were made when hard data was scarce or unavailable. As such, the resulting base case ERR projections can be considered reasonable estimates of the expected economic impact of the projects.

As noted previously, however, the Program underwent considerable re-scoping in early 2008, due to cost increases identified as project planning got underway. As a result of the re-scoping of the program, only two sub-projects remain in the compact, the Efate Round Island Road and a portion of the Santo East Coast Road. In addition, the updated estimated costs for those projects

increased from the original estimate. Consequently, it was necessary to re-calculate the ERRs for each one, to ensure that they were still economically viable within the required cost-benefit threshold.

**Table 1: Revised Economic Internal Rate of Return**

Project	Updated Projected EIRR
Efate: Round Island Road	15.2%
Santo: East Coast Road	28.5%
Program Total	20.7%

The same ERR assumptions -- presented in Annex 1 -- and model used for the original calculations were used for the updated rates of return. The only parameters that were changed were the estimated costs. Despite the higher cost, rates of return for both projects remained robust and well above the minimum required threshold.

### Benefits

Expected benefits for each project were identified and quantified by estimating the induced value added impact of (i) reduced transport costs; and (ii) improved reliability of access on economic activity in the tourism and agriculture sectors. The full range of quantifiable benefits and means of estimation for the civil works subprojects are summarized in Annex I: Methodology for Economic Benefits Calculations. In addition, PWD operations and maintenance cost savings were considered as providing a national benefit in estimating the program ERR, but were incorporated into the analysis using estimated amounts; consequently, it may be difficult to measure these benefits over the course of the Compact against specific baseline values. Baselines for other key benefits in tourism, roadside enterprise development, traffic counts, household income, including basic household agriculture production and economic activity have been established, and follow-up data will be collected at the end of the Compact for comparative purposes. The M&E Plan has been developed to establish the extent to which expected benefits are achieved.

### Beneficiaries

The primary beneficiaries of the proposed projects fall into the following two broad categories:

- Providers (and laborers) of tourist-related goods and services (hotels, airlines, tour companies, shops, restaurants, artisans and others that are orientated to tourist clientele)
- Local producers (landowners; existing and potential lessees of land; processors of primary produce) and inhabitants of remote communities with limited access to social and other services

In the original ERR and beneficiary calculations, a growth rate of 15% a year, once construction was completed, was assumed for the tourism sector. Based on that, as well as employment data from 2000 from the National Tourism Development Office, an original target estimate was calculated of 280 additional formal sector jobs and 25 new locally-owned businesses *each year*, impacting the lives of over 1,300 people<sup>2</sup>. This number was then revised in 2008 based on several factors. First, data from the MCA-sponsored Tourism Income and Expenditure Survey, whose baseline data collection took place in 2007, was used to update the tourism employment baseline numbers.<sup>3</sup> The tourism employment growth rates were then calculated using an

<sup>2</sup> Assuming five people per household.

<sup>3</sup> According to the 2007 tourism survey, it is estimated for the updated baseline that there are 2968 FTE tourism jobs on Efate and 427 FTE tourism jobs on Santo.

estimated rate of 8.25% for Efate and 8.8% for Santo, which are based on GDP growth rate estimates from 2008 by the International Monetary Fund and the Asian Development Bank, adjusted for the assumption that the tourism sector will benefit disproportionately in growth.<sup>4</sup>

It should be noted, too, that the total number of beneficiaries could be higher depending on the spillover impact of tourism activities on agriculture, fishery and construction sectors, but could not be measured.

The number of beneficiaries due to increased agricultural production is more difficult to estimate. Based on a reasonable estimated catchment area of the road projects – comprising the villages nearest to the roads and most likely to benefit from them – the revised estimated number of beneficiaries is about 21,000 people. About 14,000 of those beneficiaries are on Efate, and about the remaining 7,000 beneficiaries are on Santo. These are poor, rural inhabitants living near and using the roads to access markets and social services, such as schools and health centers. This revised estimate has decreased from the original estimate of 65,000 rural beneficiaries. The revised estimate consists of the full original estimates of the Efate Ring Road and the Santo East Coast Road, as the scope of these projects remained unchanged. (The Santo East Coast Road will be fully completed due to funds from both MCC and NZ AID, and the total number of original estimated beneficiaries will remain the same.) The beneficiary estimates for the other sub-projects have been eliminated from the total estimate, as they will no longer be completed with MCC funds.

The two remaining projects should still have substantial impact on nearby populations, however, as the limited road network in the rural areas means that rehabilitating these roads will play a critical role<sup>5</sup> in funneling goods to the major markets. Moreover, given that 67% of the working population<sup>5</sup> generates only small quantities of cash from the sale of goods, long distances and high transport costs do have a significant impact on their ability to increase cash income. Furthermore, without cash income, rural residents are unable to pay for productivity-enhancing social services, such as school fees or health services. Therefore, while the catchment area is an imperfect measure of the number of beneficiaries due to increased agriculture production, it can be considered a reasonable approximation.

In terms of how these individuals in the targeted project areas benefit from the road work, two key survey efforts will track the impact. The Household Income and Expenditure Survey (HIES) will look at how the projects influence changes in agricultural production, marketing of agricultural goods, and any shifts in quantities of agricultural products consumed for subsistence purposes to sold for cash income. In addition, the baseline Roadside Enterprise Survey, and its follow-up, the National Statistics Office's formal and informal sector surveys, will track changes in growth of businesses and markets along the roads, including agricultural businesses.

## **Risks**

The following are possible risk factors that could affect the Program's ability to meet its expected goals, objectives, targets, and timelines.

### Tourism Industry Risk

Growth of the tourism sector is important for realizing the expected benefits of this program. The tourism sector, however, is influenced by many factors, some within the Government of Vanuatu's (GOV) control and some outside. In its favour, several factors support tourism growth in Vanuatu.

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<sup>4</sup> The tourism employment growth rates represent a mean growth rate, based on a combination of slow and rapid growth scenarios. Those slow and rapid growth scenarios were, in turn, based on a counterfactual (without-project) assumption of a basic growth rate of 3.8% in the sector. The counterfactual growth rate is based on recent (2008) downward adjustments to Vanuatu's GDP growth forecast by the IMF and the ADB. The IMF has revised its growth forecast to an annual average of 3.75%, or about 60% of the growth rate estimates for the same time period that was put out in previous years. The ADB's 2009 growth rate estimate is 2.9%.

<sup>5</sup> Sixty-seven percent of the economically active population are considered to live predominantly off subsistence activities.

From a national perspective, the country has managed to attract credible investors such as Warwick Hotels and Pacific Blue. From an external perspective, Vanuatu is poised to capture a larger share of the Pacific market from other declining destinations, such as Bali and Fiji. If these trends were to continue, higher benefits than what has been projected can be expected. Alternatively, if these trends were to reverse, as a result of exogenous shocks such as the global financial crisis that began in 2008, there will be an adverse impact on the projected benefits of the program. The reversal of these trends could be induced by changes in government commitment to tourism development or exogenous shocks. Hence, development of the tourism sector will be closely monitored by MCA-Vanuatu over the course of the program.

#### Additional Cost Over-Run Risk

The Program already has undergone a re-scoping due to higher estimated costs than those that were available at the time of the Program's initial preparation. It is possible that additional price increases will occur due to rising fuel prices, higher equipment and labour costs due to higher demand, rising prices of other materials, and other factors. Such possible changes could result in additional necessary re-scoping.

In a small island economy such as Vanuatu's, a large foreign aid program such as the MCA Compact stands to have a substantial influence, and a significant restructuring of the program could have reverberations at the macroeconomic level. The Asian Development Bank's 2006 Asian Development Outlook, for example, cited the MCA Program as a significant economic factor in its assessment of Vanuatu, noting that the 11 initially planned transport infrastructure sub-projects were expected to contribute to expansion in the construction sector, in particular, and to the tourism and agriculture sectors to a lesser extent. Considering that these three areas are among the largest contributors to the country's GDP, their growth over the next few years could be lower than predicted due to a reduction in scope of the project. A reduced geographic reach of the program may also hinder the improvement in transport access and reduction in transaction costs necessary to improve the ability to do business in Vanuatu and contribute to economic growth.

#### Timing and Schedule Risk

The current timeline for completion of all projects is ambitious and tight. Any delays in execution of various activities could result in an overall delay in completion that poses a risk for completing all works by the compact end date in April 2011.

### **3. Monitoring Component**

The M&E Plan measures the results of the Program using quantitative, objective and reliable data ("Indicators"). Each Indicator has one or more expected results that specify the expected value and the expected time by which that result will be achieved ("Target"). The M&E Plan will measure and report on four types of Indicators, where applicable. First, the Compact Goal Indicators (each, a "Goal Indicator") will measure the impact of the Program on the incomes and poverty levels of Ni-Vanuatu who are affected by the Program (collectively, "Beneficiaries"). Second, Objective Indicators (each, an "Objective Indicator") will measure the final results of the Projects in order to monitor their success in meeting the Objectives. Third, Outcome Indicators (each, an "Outcome Indicator") will measure the intermediate results of goods and services delivered under the Project in order to provide an early measure of the likely impact of the Projects on the Objectives. Fourth, Project Activity Indicators and Process Milestones (each, an "Activity Indicator" and "Process Milestone") will measure the delivery of key goods and services in order to monitor the pace of Project Activity execution.

It should be noted that the current monitoring component has been revised substantially from its original to reflect both the significant changes in the Program since EIF as well as the availability

of more suitable metrics to measure Program progress and results. The monitoring framework described in the following sections outlines all of the current indicators and targets in the above categories. Changes – along with the reasons for them – are summarized in *Annex II, Summary of Indicator and Target Changes*.

## Goal Indicators

The Goal for the project is to alleviate poverty by increasing economic activity and the incomes of men and women in rural areas through the amelioration of transport infrastructure. Three indicators will be used to measure the program goal: (a) the change in cash income, used to measure the extent of income earned through participation in the formal economy, (b) change in poverty, as indicated by an improved standard of living above the most basic needs poverty line, and (c) change in employment in the tourism sector.

**Table 2: Goal Indicators**

Compact Goal: Reduce Poverty by Increasing Economic Activity and the Incomes of Men and Women in Rural Areas through the Amelioration of Transport Infrastructure								
Goal Indicator	Definition	Unit of Measurement	Frequency of Reporting	Source				
Cash Income Per Capita - Efate (Round Island Road)	Average Cash Income Per Capita, of population living in the project catchment area	USD (\$)	Baseline and Year 5	Household Income and Expenditure Survey				
Cash Income Per Capita - Santo (Port Olry Road)	Average Cash Income Per Capita, of population living in the project catchment area	USD (\$)	Baseline and Year 5	Household Income and Expenditure Survey				
Poverty Rate - Efate	The proportion of households living below the national Basic Needs Poverty Line (BPNL), in the project catchment area	%	Baseline and Year 5	Household Income and Expenditure Survey				
Poverty Rate - Santo	The proportion of households living below the national Basic Needs Poverty Line (BPNL), in the project catchment area	%	Baseline and Year 5	Household Income and Expenditure Survey				
Increased Tourism Employment - Efate	Number of additional tourism jobs created	#	Baseline and Year 5	Tourism Income and Expenditure Survey				
Increased Tourism Employment - Santo	Number of additional tourism jobs created	#	Baseline and Year 5	Tourism Income and Expenditure Survey				
Compact Goal: Reduce Poverty by Increasing Economic Activity and the Incomes of Men and Women in Rural Areas through the Amelioration of Transport Infrastructure								
Goal Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Income Per Capita - Efate	USD (\$)	\$1,291	2006					\$1,617
Cash Income Per Capita - Santo	USD (\$)	\$2,122	2006					\$2,711
Poverty Rate - Efate	%	37.7%	2006					31.2%

Poverty Rate - Santo	%	14.6%	2006					7.3%
Increased Tourism Employment - Efate	#	2968	2007					3000
Increased Tourism Employment - Santo	#	427	2007					500

The updated cash income and poverty indicators and targets were developed following the 2006 HIES, which had been previously identified as a source for updated baseline data, and the accompanying poverty analysis that was conducted after the survey. Using the 2006 HIES, Vanuatu developed more reliable measures of cash income, and also established a national poverty line, defined as the "Basic Needs Poverty Line". Consequently, baseline poverty and income measures that had not been previously available were established, which will provide a much-improved measure of high-level Program results.

The HIES will be repeated in 2011, the final year of the Compact, to estimate the actual rise in income and reduction in poverty of targeted beneficiaries over the life of the compact.

The updated tourism employment indicators and targets were developed using a combination of data from the 2006 HIES and the 2007 tourism income and employment baseline survey. The tourism survey will be repeated in 2010-2011.

Both the 2010-2011 HIES and follow-up of the tourism survey will provide relevant end-of-compact follow-up data on the Goal indicators to measure progress against the baselines and targets.

### Objective Indicators and Outcome Indicators

The Objective and Outcome Indicators (with associated targets) that will be used to monitor the success of the two subprojects are outlined below. The indicators selected were based on the relative weight of benefits identified in the economic evaluation of each subproject and the practical means by which data on the indicators can be collected. Given that expected behavioral change associated with the implementation of the Program is not expected until after project completion, none of the objective or outcome indicators are linked to disbursements.

**Table 3: Objective and Outcome Indicators**

Objective 1: Facilitate Transportation to increase tourism, business development, and agriculture production				
Objective Indicator	Definition	Unit of Measurement	Frequency of Reporting	Source
Number of New Hotel Rooms Constructed - Efate	Number of new hotel rooms constructed (cumulative)	#	Annual	Vanuatu Tourism Office, Vanuatu Hoteliers and Resort Association, Vanuatu Provincial Tourism Offices
Number of New Hotel Rooms Constructed - Santo	Number of new hotel rooms constructed (cumulative)	#	Annual	Vanuatu Tourism Office, Vanuatu Hoteliers and Resort Association, Vanuatu Provincial Tourism Offices
Number of International Tourists (per annum) - Vanuatu	Number of International Tourist, per International arrivals (per annum)	#	Quarterly	National Statistics Office

Outcome Indicator	Definition	Unit of Measurement	Frequency of Reporting	Source				
Traffic volume (average annual daily traffic ) -Santo: East Coast Road	Total daily average number of vehicles on the road	#	Baseline, Year 4, Year 5	MCA-Vanuatu and PWD				
Traffic volume (average annual daily traffic ) -Efate: Ring Road	Total daily average number of vehicles on the road	#	Baseline, Year 4, Year 5	MCA-Vanuatu and PWD				
Days road is closed (number per annum) - Efate: Ring Road	Number of days project road segment is closed to traffic and not passable	#	Baseline and Year 5	MCA-Vanuatu and PWD				
<b>Objective 2: Improved road sustainability through increased funding and improved maintenance</b>								
Objective Indicator	Definition	Unit of Measurement	Frequency of Reporting	Source				
Share of road length in "Fair" Condition (percent) - Total	"Fair" condition is defined as being able to drive the road at a speed of 46 km per hour or greater	%	Baseline, Year 4, Year 5	MCA-Vanuatu and PWD				
Share of road length in "Fair" condition (percent) - Efate	"Fair" condition is defined as being able to drive the road at a speed of 46 km per hour or greater	%	Baseline, Year 4, Year 5	MCA-Vanuatu and PWD				
Share of road length in "Fair" condition (percent) - Santo	"Fair" condition is defined as being able to drive the road at a speed of 46 km per hour or greater	%	Baseline, Year 4, Year 5	MCA-Vanuatu and PWD				
<b>Objective 1: Facilitate Transportation to increase tourism, business development, and agriculture production</b>								
Objective Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5
Number of New Hotel Rooms Constructed - Efate	#	0	2005				200	400
Number of New Hotel Rooms Constructed - Santo	#	0	2005				70	140
Number of International Tourists (per annum) -Vanuatu	#	61,453	2005	65,755	70,358	75,283	84,170	87,743
Outcome Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5
Traffic volume (average annual daily traffic ) -Santo: East Coast Road	#	920	2008				950	1000
Traffic volume (average annual daily traffic ) -Efate: Ring Road	#	860	2008				900	950
Days road is closed (number per annum) - Efate: Ring Road	#	9	2008					0

Objective 2: Improved road sustainability through increased funding and improved maintenance								
Objective Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5
Share of road length in " Fair" <sup>6</sup> Condition (percent) - Total	%	30%	2008					80%
Share of road length in " Fair" condition (percent) - Efate	%	9%	2007					80%
Share of road length in " Fair" condition (percent) - Santo	%	94%	2008*					80%

\* The road condition survey on Santo was conducted immediately after routine maintenance. This meant that the road condition was in a better condition enabling the driver to drive at speeds of 46km per hour and above.

## Activity Indicators and Process Milestones

Project Activity Indicators and Process Milestones measure the delivery of key goods and services in order to monitor the pace of Program execution. These indicators were recently refined as part of this revision to reflect more meaningful metrics tied to the project implementation plans.

**Table 4: Activity Indicators and Process Milestones**

Infrastructure Activity				
Activity Indicator	Definition	Unit of Measurement	Frequency of Reporting	Source
Kilometers of Roads Upgraded - Total	Kilometers of Roads Upgraded	Km	Quarterly	Works Contractor and Supervisory Engineer
Kilometers of Roads Upgraded - Efate - Ring Road	Kilometers of Roads Upgraded	Km	Quarterly	Works Contractor and Supervisory Engineer
Kilometers of Roads Upgraded - Santo - East Coast Road	Kilometers of Roads Upgraded	Km	Quarterly	Works Contractor and Supervisory Engineer
Process Milestone Indicator	Definition	Unit of Measurement	Frequency of Reporting	Source
% Completed (Financial - % of dollars disbursed against total contract amount) Contract for 121 Km	% of total works completed	%	Quarterly	Works Contractor and Supervisory Engineer
ESA Reconnaissance Survey & Scoping Report Completed		Date	Once, when completed	Environment and Social Assessment consultant
ESA and EMP for Efate Completed		Date	Once, when completed	Environment and Social Assessment consultant

<sup>6</sup> It was agreed that the road conditions were to be measured on comfortable speed meaning that comfortable was subjective and depended on the age, type and condition of vehicle and the attitudes of the driver and passenger. Fair condition is defined as being able to drive the road at a speed of 46 km per hour or greater

ESA and EMP for Santo Completed		Date	Once, when completed	Environment and Social Assessment consultant
Access to all quarry sites		Date	Once, when completed	MCA-Vanuatu
Quarry pricing and payment system in place		Date	Once, when completed	MCA-Vanuatu
Construction Design-Build Contract Signed		Date	Once, when completed	MCA-Vanuatu
Project Program Completed		Date	Once, when completed	MCA-Vanuatu
Quality and Safety Plans Completed		Date	Once, when completed	MCA-Vanuatu
Efate RAP Completed		Date	Once, when completed	MCA-Vanuatu
Santo RAP Completed		Date	Once, when completed	MCA-Vanuatu
Final Design Complete, Efate (all sections)		Date	Once, when completed	MCA-Vanuatu
Final Design Complete, Santo (all sections)		Date	Once, when completed	MCA-Vanuatu
Earthworks Initiated - Efate		Date	Once, when completed	MCA-Vanuatu
Earthworks Initiated - Santo		Date	Once, when completed	MCA-Vanuatu

#### Institutional Strengthening Activity

Activity Indicator	Definition	Unit of Measurement	Frequency of Reporting	Source
Annual PWD Score	Composite score out of 40 for all the 8 KPI	#	Annual	MCA-Vanuatu

#### Infrastructure Activity

Activity Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5
Kilometers of Roads Upgraded - Total	Km	0				10	70	121
Kilometers of Roads Upgraded - Efate - Ring Road	Km	0				10	70	92.5

Kilometers of Roads Upgraded - Santo - East Coast Road	Km	0				0	0	32
Process Milestone Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5
% Completed (Financial - % of dollars disbursed against total contract amount) Contract for 121 Km	%	n/a	n/a				50%	100%
ESA Reconnaissance Survey & Scoping Report Completed	Date	n/a	n/a			8-May-08		
ESA and EMP for Efate Complete	Date	n/a	n/a			30-May-08		
ESA and EMP for Santo Complete	Date	n/a	n/a			30- May-08		
Access to all quarry sites	Date	n/a	n/a				Dec -09	
Quarry pricing and payment system in place	Date	n/a	n/a				Jun-09	
Construction Design-Build Contract Signed	Date	n/a	n/a			8-May-08		
Project Program Completed	Date	n/a	n/a			12-Jun-08		
Quality and Safety Plans Completed	Date	n/a	n/a				Dec-09	
Efate RAP Completed	Date	n/a	n/a			Mar-09		
Santo RAP Completed	Date	n/a	n/a			April -09		
Final Design Complete, Efate (all sections)	Date	n/a	n/a				Jun-09	
Final Design Complete, Santo (all sections)	Date	n/a	n/a				Aug-09	
Earthworks Initiated - Efate	Date	n/a	n/a			Oct-08		
Earthworks Initiated - Santo	Date	n/a	n/a				May- 09	

**Institutional Strengthening Activity**

Activity Indicator	Unit of Measurement	Baseline	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5
Annual PWD Score <sup>7</sup>	#	14	2008†				20	40

†The poor result for 2008 reflects the late release of funds by the Department of Finance as a result of low cash flow and PWDs lack of submitting proper proposals to the DoF for funding. This also reflects the lack of understanding by PWD personnel on how to record the various KPI.

It should be noted that the specific methodology and standards for the audits of PWD performance are still subject to final review and agreement and it is possible that some of the details of the indicator may be subject to changes as the audit approach is further developed.

## 4. Evaluation Component

### Final Evaluation Methodology

The impact of the Program will be measured using the “before/after” methodology, i.e. collecting data prior to and following implementation of project activities. This strategy was selected because the islands and communities in Vanuatu are heterogeneous, making it difficult to establish a credible counterfactual, i.e. a group of individuals who in the absence of the Program would have had outcomes similar to those who were exposed to the Program. This heterogeneity is exacerbated by the large geographic area of the country, widespread settlement, and generally low population density. The before/after methodology will not be able to take account of the changes that would have occurred even without the new infrastructure. To address this as much as possible, the evaluation will use quantitative and qualitative analysis to develop a richer understanding of cause-effect relationships and program impact.

At this time, MCA and MCC recognize that it is possible that the data from the 2010 Household Income and Expenditure Survey may not be available far enough in advance to the Compact end date in April 2011 to be fully utilized in the final evaluation. Furthermore, MCC does not currently have a policy in place to complete evaluations that are not able to be finished under management of MCA for reasons such as this. However, MCC is currently developing an approach to this issue. This section will be revised further, following the finalization of MCC policy on this.

### Objectives

The evaluation component of the M&E plan will attempt to measure the extent to which the program contributes to poverty alleviation and economic growth and test key assumptions made in the economic analysis. As such, the objectives of the evaluation component will be to assess the:

- Role of transportation infrastructure on agricultural production and sales and development of businesses in the project areas ( which will be based primarily on the:
  - Roadside Enterprise Survey and NSO formal and informal sector surveys;

<sup>7</sup> A system of scoring each performance indicator against the target for the year, and then combining these scores is recommended. The 8 key performance indicators are taken from the PWD Service agreement and reflect the Key Performance Indicators contained within it. It seems reasonable to score the performance against the indicator target set for each year. The proposed system gives a maximum score of 40 for the indicator, with each KPI accruing points according to the compliance with the annual target for that KPI, from 50% compliance upwards

- Monitoring data (e.g. traffic volumes and tourism activity); and
- Household Income and Expenditure Survey (2006 & 2010).
- Impact of the roads on the tourism economy (including income, tourism expenditures, and tourism employment levels), which will be based on the:
  - Tourism Income and Expenditure Survey (2007 and 2010);
  - Visitor arrival data; and
  - Other tourism data, such as number of new hotel rooms, if available and considered reliable.
- Impact of transport infrastructure on household income and poverty in Vanuatu, based on the:
  - Household Income and Expenditure Survey (2006 & 2010).
- To the extent possible quantitative information for the impact of transport infrastructure on access to schools, healthcare, and other social services, based on the:
  - interpretation of the results of the HIES (2006 & 2010);
  - possible ad-hoc surveys of villages in the catchment areas of the projects through stakeholder consultations; and
  - stakeholder evaluation of vulnerable groups such as plantation workers, women's group, youth groups and the disabled.

## Activities

Evaluation activities will comprise two parts:

(a) Final Evaluation, as described above. MCA-Vanuatu will procure and engage an independent consultant(s) (though MCC may elect to engage an additional such person on its own) to conduct an evaluation that is to be submitted to MCA and MCC one quarter prior to the end of the Compact in draft form and by the end of the Compact in final form. The Final Evaluation must at a minimum (i) evaluate the efficiency and effectiveness of the Project activities; (ii) seek to establish the causal relationship between the Projects and the compact goal; (iii) thoroughly address the three evaluation objectives identified above; (iv) determine if and analyze the reasons why the compact goal was or was not achieved; (v) identify positive and negative unintended results of the Program; (vi) provide lessons learned that may be applied to similar projects; and (vii) assess the likelihood that results will be sustained over time.

(b) Ad Hoc Evaluations. Given that construction is not expected to be completed until the 5th year, observable results due to the program are not expected until near the end of the compact. As such, a mid-term evaluation of interim results has been deemed inappropriate in the context of this compact. Ad-hoc may be used during the compact to address specific questions or concerns raised during implementation that have not been covered by planned surveys or studies. Ad hoc or interim evaluations or special studies of Projects, Project Activities, or the Program as a whole may be sought by MCC prior to the expiration of the compact term. MCA intends to conduct some ad hoc stakeholder evaluations and consultations in late 2009 and in 2010.

## 5. SURVEYS

The following is a summary of the surveys that will be undertaken to provide requisite data and information for the Monitoring and Evaluation Components:

- **Accommodation Survey.** It was originally intended that a routine monthly survey of a sample of hotel and bungalow accommodation would be done by the National Statistics

Office (NSO) for major establishments in Port Vila, Santo, and Tanna. The sample was planned to cover the majority of available rooms in Vanuatu, and will be updated from time to time as necessary. The survey was to collect room-night and bed-night occupancy rates. However because of difficulties in getting good responses from the hotel owners, it was agreed that occupancy rates be eliminated from the list of indicators and M&E Plan.

- **Household Income and Expenditure Survey (HIES).** The HIES is conducted by the NSO, and will provide the basis for measuring the extent to which the Goal for the project of increasing formal personal income and reducing poverty is achieved. The survey will explicitly account for income from agricultural activities (as distinct from salaries/wages paid by employers) and will have a higher rate of sampling of project beneficiary groups to ensure statistical validity. The 2006 iteration of the survey provided baseline data. MCA-Vanuatu will fund and coordinate with NSO implementation of a follow-up survey in 2011, to measure end-of-compact and post-compact results.
- **Road-side Enterprise Survey.** A special survey was conducted by MCA-Vanuatu in 2008 create a census of all businesses along the two project roads. The survey captured the type, size of business, gender of owner and time period in operation. It will be important to track business development along the roads, as the rise in the number of business establishments will provide a secondary indicator of the impact of the road projects on prompting commercial activity.
- **National Formal and Informal Sector Surveys.** To track business development at the end of the compact and compare with the ex-ante information captured in the Road-Side Enterprise Survey, MCA-Vanuatu will provide funds to the NSO to incorporate this information collection into their National Formal and Informal Sector Surveys in 2010. The entire sample of businesses along the two project roads will be included in the total samples of these surveys, and NSO will adjust the questionnaires to capture additional information relevant to tracking the impact of the compact.
- **Tourism Surveys and Expenditure Study.** This survey, contracted by MCA-Vanuatu to a private firm, captures and estimates baseline and end-of-compact data on tourism expenditure, tourist behavior pattern, tourism employment, and other impacts of the tourism industry on the Vanuatu national economy, such as contribution to GDP. The baseline survey was conducted in 2007, and the follow-up survey will be conducted in 2010 and 2011.
- **Traffic Count Surveys.** MCA-Vanuatu and the PWD will work together to conduct baseline and follow-up traffic counts on the project roads, using automated traffic counters. This work also will include an Origin and Destination survey on a select sample of vehicle. Surveys are undertaken for seven days at each location during different times of the year so that fluctuations in demand by day of week and time of year can be taken into account and to ensure statistical significance given the generally low levels of traffic. As there is little traffic at night, each survey will be undertaken for a 12 hour period. Follow up surveys will be conducted during the dry season of 2009 (May-September 2009), the wet season which should be late 2009 and early 2010 (December 2009 – March 2010) and the dry season of 2010 (May-September 2010) and the wet season which should be late 2010 and early 2011 (December 2010-March 2011).
- **Road Condition Survey.** A survey of road conditions will be conducted to monitor change in road conditions, as well as performance of PWD. The survey will assess the condition of the road through a visual assessment of its condition and how fast it is possible to drive on the road under certain consistent conditions, holding other factors constant. The condition of the road will be measured on comfortable speed which will be subjective and depend on the age, type and condition of the vehicle and the attitudes of the driver and passenger. Baseline values have already been collected for the Efate and

Santo roads. At least one follow-up will be conducted, and possibly more depending on the construction timeline. It should be noted that the approach for conducting this survey may be subject to change as the methodology and approach continues to be reviewed.

Given the subjectivity of the survey and the poor condition of the roads a criteria is set for the various km per hour categories. In areas were vehicles traveling under 20km per hour it is assumed that the road is in very poor condition. Travelling above 20 up to 45 km per hour is considered poor and driving above 46 up to 65km is considered fair. Travelling above 65km per hour is considered good.

**Table 5: Road Condition categories**

<b>KM per Hour</b>	<b>category</b>
Under 20 km/h	Very Poor
20 to 45 km/h	Poor
46 to 65 km/h	Fair
66 to 85	Good
Over 85	Excellent

## 5. Implementation

### Roles and Responsibilities

As the entity accountable to the GOV and MCC, MCA-Vanuatu will be responsible for managing the implementation of the monitoring and evaluation plan, including all data collection and reporting activities. MCA-Vanuatu responsibilities as they relate to M&E fall into the following tasks:

- Orientation, Management and Consolidation of Primary Data: Before beginning implementation of individual Projects or Project Activities, MCA-Vanuatu will orient staff of supporting agencies and Implementing Entities on how performance will be measured, and will provide any necessary training or technical assistance to comply with the M&E Plan. MCA-Vanuatu will collect data from implementing agencies and review comments and suggestions from stakeholders and Project Managers. MCA-Vanuatu will undertake some M&E surveys itself, but will generally arrange for others to do this work.
- Procurement and Oversight of Consultants for Special Studies and Surveys: MCA-Vanuatu will engage and oversee independent international consultants to develop, conduct and/or provide technical assistance for specials surveys and studies, including but not limited to, the Final Evaluation, and Tourism Survey and Studies.
- Information Management: All data related to the compact, including but not limited to financial information, surveys, studies, materials, papers and computer records, will need to be stored with secure access to MCA-Vanuatu and MCC as and when required. Since the Vanuatu program is just a small program all its data are managed through Microsoft Excel Spreadsheets and Microsoft Access. Some of the data are managed by the NSO.

- Data Quality: MCA-Vanuatu will regularly assess the quality and timeliness of data submitted by implementing agencies and will provide recommendations to improve quality and compliance. MCA-Vanuatu has engaged the services of an independent international consultant as the Data Quality Auditor. The first audit was done in 2007 and it is expected that another audit will take place in mid 2009 and the final audit be done in 2011. MCA-Vanuatu will implement recommendations of the Data Quality Auditor within three months of the audit or provide justification for non-compliance when recommendations are not followed.
- Data Reporting and Outreach: MCA-Vanuatu will be responsible for reporting on program performance to MCC, MCA-Steering Committee and stakeholders. As such, MCA-Vanuatu will directly participate in the monitoring of program activities through site visits, reviews of project reports, and beneficiary feedback. MCA-Vanuatu reports will present and interpret the data on program performance, identifying issues and, where necessary, remedial measures.

### **Disaggregating Data by Gender, Age, and Income**

Given that this program aims to provide public goods for the benefit of communities, rather than individuals, it is difficult to identify individual beneficiaries. Nevertheless, as practicable, reporting on the following indicators will be disaggregated by gender, age, and/or income:

- Cash income, disaggregated by sex of head of household
- Tourism jobs created
- Owner of Road-side Business Establishment

In addition, the questionnaires for the 2006 HIES were revised substantially to obtain more gender-disaggregated information and to provide more insight into intra-household dynamics. Data from both the 2006 and 2011 HIES should be able to help provide insight into some of the program impacts along gender lines.

### **Reporting**

MCA-Vanuatu shall follow current approved MCC reporting guidelines, as posted on the MCC website ([www.mcc.gov](http://www.mcc.gov)) and provided by the agency to MCA units. Quarterly and annual reports, Indicator Tracking Tables, and an M&E work-plan will be submitted according to schedules and formats outlined in such guidance.

All data collected in surveys should be reported in a form that can be made publicly available, such as on the MCA-Vanuatu website. This will primarily involve meeting privacy and confidentiality conditions whereby data cannot be linked to individual people or small localized groups. This data, and all associated progress reports, including those relating to survey design and analysis and reports of the Data Quality Auditor, should be made available on the project's website.

### **Data Quality Reviews**

MCA-Vanuatu will provide capacity building services to implementing agencies to ensure pertinent and reliable data is collected for program monitoring and evaluation. In addition, MCA-Vanuatu will conduct onsite, ad-hoc, data audits to check for consistency and reliability of data received from implementing agencies. Data audits will be conducted by MCA-Vanuatu more frequently during the beginning of the program and less frequently as data quality improves.

In addition, an independent consultant (Data Quality Auditor) has been engaged to review the quality of the data gathered through the M&E Plan to ensure that data reported are as valid, reliable, and timely as resources will allow. The objective of the data quality review will be to

verify the quality and the consistency of data across different implementation units and reporting institutions. The data quality reviews will also identify strategies for improving data quality when applicable.

The Data Quality Auditor has entered into an Auditor/Reviewer Agreement with MCA-Vanuatu. The Data Quality Auditor will perform three audit reviews throughout the duration of the program. The first audit took place in 2007 and the second audit will take place in 2009 with the final review in 2011.

## **Approval Procedures**

MCA-Vanuatu will need to seek approval from MCC with regard to the M&E Plan as follows:

- MCA-Vanuatu will seek MCC's approval prior to engaging consultants, contractors or other government agencies to undertake surveys, studies or audits per the current, approved MCC Procurement Guidelines.
- MCA-Vanuatu will submit any proposals for change to the M&E Plan to MCC for approval prior to making any changes to the Plan.
- MCA-Vanuatu will follow any other requirements outlined in MCC's approval procedures, as they relate to M&E activities.

## **M&E Risks**

M&E Plan implementation risks include the following:

- MCA-Vanuatu fails to initiate surveys as scheduled, which can be addressed through sound project management;
- survey design is poor, which can be addressed by ensuring that the Data Quality Auditor is used effectively to review survey designs prior to implementation, surveys are approved by MCC prior to implementation, and surveys are repeated if the Data Quality Auditor identifies problems with implementation;
- data collection quality is low, which can be addressed by ensuring clear specification of data to be collected, training of enumerators, and quality controls on data entry and checking;
- budgetary allocation for each survey is insufficient to effectively carry out the survey; and
- surveys are unable to identify tangible changes or causal links between the project and projected outcomes.

It is considered that the first three of these risks can be controlled with sound and timely management. Subject to this, the fourth risk will not result from poor survey and analytical practices. Rather, it will reflect the fact that confounding factors make it difficult to isolate and attribute project impacts.

While careful supervision will control the risks, significant and targeted technical assistance will be required during the first year of the compact. The current extent and quality of data collection by government agencies in Vanuatu (including the NSO, PWD and provincial governments, all of which are central to data collection for the current project) is inconsistent. This reflects limited staffing and capacity that limits the agencies' ability to identify data needs, implement data collection, and process and interpret data. In this environment, it will be important to provide appropriate support to address this. Hence, MCA-Vanuatu will receive targeted technical assistance to ensure that surveys are planned well in advance of their projected implementation date and to facilitate survey design. MCA-Vanuatu, supported by the Program Steering Committee, will be responsible for the effective implementation of data collection when it is

covered by MCA-Vanuatu project funds and for ensuring that other government agencies are able to fulfill their obligations with regard to data collection.

## 6. Budget

The cost of the M&E program is estimated at \$1,067,000 (see Table 6). The costs have been derived on the basis of a detailed examination of necessary resources and unit costs for each component. All line items are rounded up to the nearest thousand dollars, include a contingency of 20 percent, and allow for projected inflation. The cost of the program is equal to about 2 percent of the cost of physical works. Most expenditure occurs towards the end of the project, reflecting the cost of the HIES and evaluation-related studies.

**Table 6: M&E Estimated Budget (US\$, projected current prices)<sup>1</sup>**

Component	2006	2007	2008	2009	2010	Total
<b>Special Surveys and Studies</b>						
Accommodation Survey			630			630
Household Income Expenditure Survey	97,595	-	-	-	510,405	608,000
Formal & Informal Sector Survey	-	-	1,579	-	13,421	15,000
Tourism Survey and Studies*	-	-	-	-	-	-
Tourism Statistics†	-	-	-	2,000	2,000	4,000
Traffic Count Survey	-	-	4,720	4,000	22,280	31,000
Subtotal (Special Surveys and Studies)	97,595	0	6,929	14,685	556,791	676,000
<b>Monitoring and Evaluation Commissioned Studies</b>						
Data Quality Audits	-	53,873	-	18,239	47,888	120,000
Final Evaluation Study	-	-	-	-	217,370	217,370
Subtotal (M&E Commissioned Studies)	0	53,873	0	18,239	247,888	320,000
<b>Information Management</b>						
Database, reporting systems and manuals	-	-	-	9,000	9,000	18,000
MCA-Vanuatu site visits			686	26,129	26,185	53,000
Subtotal (Information Management)	0	0	686	35,129	35,185	71,000
<b>TOTAL</b>	<b>97,595</b>	<b>53,873</b>	<b>7,615</b>	<b>68,053</b>	<b>839,864</b>	<b>1,067,000</b>

(1) Based on forecast inflation of 2.5 percent per annum.

\* AusAID fund the tourism survey

† Allocation to fund tourism related statistics especially number of new hotel rooms

**Table 7: M&E Procurement Plan<sup>1</sup>**

Procurement	Consultant Task Summary	Procurement Year(s)					Approx. Budget	Notes
		06	07	08	09	10		
MCA Database	Design and maintain/update database for storing data and generating reports, design data collection and reporting manuals						\$18,000	
Road-side Enterprise Survey	Provide TA on survey design and implementation.						\$8,000	
Investor Survey	Design, administer, and analyze data.						\$18,000	
Tourism Studies and Surveys	Develop methodology for quantifying the impact of tourism on the economy. Design surveys to collect necessary data. Provide TA/oversight to agencies implementing the surveys (NSO/VTO) and/or hire and train enumerators. Analyze data. Write report.						\$170,000	In addition to the consultant, approximately \$120,000 is budgeted to fund survey implementation by NSO. The Vanuatu Tourism Office should be involved in the study design and conclusions.
Final Evaluation	Design methodology. Collect additional data as required. Analyze data. Write report.						\$180,000	In addition to the consultant, approximately \$35,000 is budgeted to fund additional data collection by local agencies (e.g. NSO).
Data Quality	Audit Data Quality. Provide ad-hoc Technical Assistance to MCA-Vanuatu on survey proposals and TORs.						\$120,000	Must be independent of all other consultant contracts to ensure independence. It is assumed that as data quality improves, the time requirements on the data quality auditor will diminish.
HIES	Provide Technical Assistance for NSO on survey design, implementation and analysis.						\$80,000	In addition to the consultant, approximately \$430,000 is budgeted for survey implementation by NSO.

The majority of the tasks will occur  
 Selected tasks will occur

(1) Procurements may be combined with approval by MCC. The Data Quality Procurement, however, cannot be combined with another other procurement action.

# Annexes

## Annex I: Methodology for ERR Calculations

### Introduction

The economic assessment of the proposed subprojects has been done in accordance with best practices and using the best available data as a basis for defining and valuing costs and benefits.

Especially with respect to benefits, a great deal of judgment has had to be applied. In many cases hard data are scarce or simply unavailable – partly because of weaknesses in the country's statistical base and partly because the benefits are by their nature conjectural.

Therefore people close to the realities of each subproject were widely consulted. The resulting estimates are based on reasonable assumptions and those assumptions are presented clearly.

### Costs

Costs are relatively straight-forward and have been estimated in two ways:

- Where design specifications were available, design assumptions were reviewed and in some cases estimated quantities and costs updated.
- In the case of a changed design or a new subproject, fresh estimates were made using estimated quantities based on concept designs and rates developed based on previous contracts in Vanuatu.

### Benefits

MCC's goal is poverty alleviation through economic development, therefore in identifying benefits we have focused on enhanced production and value added – ie, additions to GDP. In this regard the key contributions that the proposed projects make are (a) reduced transport costs and (b) improved reliability of access.

The full range of benefits identified are summarized in the following table and discussed in detail below.

**Table 8: Methodology for Economic Benefits Calculations**

Nature of benefits	Specific Benefits and Means of Estimation		
	Road Projects	Wharf Projects	Airstrip Projects
Induced agricultural production	Additional production of principle cash crops (kava, copra, taro) that would be induced by lower transport costs, fewer road closures, and more reliable shipping or air services. Estimates were based on conservative percentage increases above current production levels of products most sensitive to transportation bottlenecks.		
Induced fisheries production		Additional tonnage and value of marine products that would be induced by more frequent and/or more reliable shipping or air services. Estimates were based on conservative percentage increases above current production levels.	

Nature of benefits	Specific Benefits and Means of Estimation		
	Road Projects	Wharf Projects	Airstrip Projects
Reduced loss/damage to cargo	Inadequate infrastructure causes, directly or indirectly, damage and total loss of cargoes. Reported examples include broken eggs and bottles transported on bad roads; kava shrinkage when vessels are delayed; loss through mishandling at wharves or inadequate wharf side storage; and loss of perishable cargoes, such as marine products when flights are delayed or cancelled. Reasonable estimates (~1%-2% of current levels of production) were considered restored added value as a result of improvements in the quality of transport infrastructure and reliability of services.		
Reduced vehicle/vessel costs	The HDM model was used to predict road user costs for different road surface qualities given current levels of traffic, and hence quantify the benefits of road improvements.  Reduced vehicle operating costs was assumed to generate an additional 15% increase in traffic, with unit benefits being equal to half those enjoyed by normal traffic.	The hourly cost of vessel operation was applied to the estimated time savings attributable to wharf improvements.	
Reduced Closures	Where roads suffer periods of closure, benefits will include restoration of lost trips and/or avoidance of longer detours.		Increase in Air Vanuatu's revenue as a result of fewer flight cancellations due to flooding. Estimated as revenue lost when flights are cancelled and passengers demand refunds (i.e. are not rescheduled). Airstrip improvements restore that value.
Relieving passengers of wasted land/ sea journeys to the airstrip			By the time a flight is known not to be landing, passengers are often already on their way to the airstrip. Estimates have been made of the frequency and cost of such wasted trips.
Induced tourist expenditure	Poor transport infrastructure constrains private investment in tourist services, tourist numbers, and access to spending opportunities. The proposed projects, together with other infrastructure and policy improvements, will induce development of tourist accommodation, encourage longer stays and increase average daily expenditure. Each project is examined on its own merits and specific benefits are identified. Factors are applied in recognition that improved roads, wharves and airstrips are not the only contributors to tourism development.		

Nature of benefits	Specific Benefits and Means of Estimation		
	Road Projects	Wharf Projects	Airstrip Projects
Induced expenditure by foreign residents	On Efate and Santo only, the proposed road improvement will intensify the existing trend towards subdivision and development of land for residential purposes. The great majority of lessees are foreigners, a proportion of whose spending in Vanuatu represents a benefit.		
Local value added contribution of construction	The cost for each of the civil projects was broken down into foreign and local components. Wages paid to locally-hired labourers and local purchasing of selected inputs for construction contributes directly to the Vanuatu economy. Therefore, it was assumed that 50% of the local component of construction costs, approximately \$10 million over the life of the program, will directly benefit locally-hired labourers and businesses.		

Generalized assumptions applicable to all subproject ERRs:

- Default growth rate for benefits – 3% (IMF projection)
- Tourism growth rate applied to tourism benefits– 7% (WTTC projections)
- Economic conversion factor – 1.0
- Annual Inflation – 3% (2002-2003)
- Exchange rate – 108 vatu/USD
- Time horizon – 20 years
- Tourism expenditure factor (percent of tourism expenditure that benefits the local economy) – 72% (based on Fiji estimate)
- Local Value Added construction factor (percent of local construction costs that directly benefit the local economy through worker wages and local purchases) – 50%
- O&M Maintenance cost was excluded from individual project ERRs to avoid double counting because it was treated in the national maintenance strengthening ERR.

These assumptions will be monitored and updated over the course of the compact.

## Annex II: Summary of Indicator and Target Changes

**Table 9: Summary of Indicator and Target Changes**

Indicator	Type of Change	Date	Reason for Change
Cash Income Per Capita (Efate and Santo)	New Indicator	January 2009	Indicator has been revised to cover only the Efate and Santo project areas; additional project areas that were originally included in this indicator have been removed because those projects have been eliminated as part of the 2008 Compact restructuring. In addition, the Year 5 targets for this indicator were updated, based on the 2006 Household Income and Expenditure Survey data. (The original estimates were from 2000 data, and were highlighted as subject to change pending updated survey data.)
Poverty Rate (Efate and Santo)	New Indicator	January 2009	This indicator was added, following the creation in 2008 of a national poverty line in Vanuatu, known as the Basic Needs Poverty Line (BNPL). The current BNPL is based on the 2006 HIES data. When the original M&E Plan was prepared, Vanuatu did not have a national poverty line estimate, so a proxy indicator based on the minimum wage was used. The BNPL is a more appropriate indicator to look at program impact on poverty. Furthermore, using the BNPL will make the MCA-Vanuatu program monitoring more consistent with larger national efforts.
Fraction of individuals with monthly cash income less than minimum wage (20,000 Vatu)	Retired	January 2009	At the time this indicator was included, Vanuatu did not have a national poverty line, so this was deemed the next best proxy. With the 2006 HIES, a Basic Needs Poverty Line was developed, which is a substantially-improved method for measuring poverty levels.
Increased Tourism Employment (Efate and Santo)	Revised Baseline and Target	January 2009	A new baseline was established with data from the 2007 Tourism Income and Expenditure Survey. Targets were also revised to take into account the project re-scoping, as well as the updated

			data.
Number of Tourists Per Annum – Malekula and Tanna	Retired	January 2009	The Tanna and Malekula sub-projects will no longer be completed under the compact, so tracking results on these islands is not necessary.
Number of International Tourist Per Annum - Efate	Retired	June 2009	This will be eliminated as the number of international tourist will be captured.
Number of International Tourist Per Annum – Santo	Retired	June 2009	Due to limited number of flights to Santo and the fact that most visitors transit from Vila meant that it is unreliable to calculate the number of tourist travelling to Santo per annum
Number of Hotel and Bungalow Bed-Nights Occupied	Modified	January 2009	Indicator modified from Hotel and Bungalow Bed Nights to Room Nights, to reflect data collection realities in that it is possible to track room-night occupancy, but not as feasible necessarily to fully track the number of beds occupied within those rooms.
Number of Bed-Nights – Tanna and Malekula		January 2009	The Tanna and Malekula sub-projects will no longer be completed under the compact, so tracking results on these islands is not necessary.
Number of Room Nights Occupied (per annum) - Efate	Retired	June 2009	Poor response to the questionnaires meant poor data therefore it is no longer necessary if the data is unreliable.
Number of Room Nights Occupied (per annum) - Santo	Retired	June 2009	Poor response to the questionnaires meant poor data therefore it is no longer necessary if the data is unreliable.
Airfreight uplifted from SW Bay, Malekula		January 2009	Malekula sub-project will no longer be completed under the compact, so this indicator is no longer necessary
Cargo shipped from Loltong Wharf, Pentecost		January 2009	The Loltong Wharf sub-project will no longer be completed under the compact, so this indicator is no longer necessary
Traffic volume, Santo South Coast Bridges, Malekula Lits Lits Road, and Pentecost North-South Road		January 2009	These sub-projects will no longer be completed under the compact, so these indicators are no longer necessary
Days the Road is Close – Santo South Coast Bridges, Pentecost North-South Road		January 2009	These sub-projects will no longer be completed under the compact, so these indicators are no longer necessary
Number of SW Bay Malekula flights cancelled due to		January 2009	This sub-project will no longer be completed under the compact, so

flooding			this indicator is no longer necessary
Time at Wharf (hours/vessel)		January 2009	Wharf projects will no longer be completed under the compact, so this indicator is no longer necessary
Damaged Cargo (Tons/Year)		January 2009	Warehouse projects will no longer be completed under the compact, so this indicator is no longer necessary
Warehouse Revenue (% of operating costs)		January 2009	Warehouse projects will no longer be completed under the compact, so this indicator is no longer necessary
Kilometres of Roads upgraded, Malekula, Malo, Pentecost, and Tanna		January 2009	These sub-projects will no longer be completed under the compact, so these indicators are no longer necessary
Number of River Crossings Constructed		January 2009	These sub-projects will no longer be completed under the compact, so these indicators are no longer necessary
Airstrip meters upgraded at SW Bay, Malekula		January 2009	This sub-project will no longer be completed under the compact, so this indicator is no longer necessary
Number of maritime wharves reconstructed		January 2009	These sub-projects will no longer be completed under the compact, so these indicators are no longer necessary
PWD Budget as a percent of transport revenue collected		January 2009	Based on the content of the Implementing Entity Agreement and the Service Performance Agreement with PWD, this indicator is no longer relevant