

Closed Compact Report: Vanuatu Compact

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MILLENNIUM
CHALLENGE CORPORATION
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Introduction

In March 2006, the Millennium Challenge Corporation (MCC) and the Government of Vanuatu (GoV) signed a five-year, \$65.69 million compact. Through the **Transport Infrastructure Project**, the compact aimed to reduce transportation costs, and thereby reduce poverty and increase incomes in rural areas by stimulating economic activity in the tourism and agricultural sectors. This project included two activities:

- i. The **Infrastructure Activity** included civil works for the reconstruction or construction of priority infrastructure, including roads, wharfs, airstrips, and warehouses; and
- ii. The **Institutional Strengthening Activity** aimed to strengthen the Public Works Department (PWD), including the provision of plant and equipment for maintenance of the infrastructure.

Through the investment, the GoV and MCC expected approximately 14,783 people to benefit and an estimated \$83.5 million in net benefits over 20 years.

At the outset, the Transportation Infrastructure Project sought to develop up to eleven infrastructure projects on eight islands throughout Vanuatu. However, in early 2008 escalating global construction costs, currency fluctuation, and other considerations led the project to be formally re-scoped. The re-scoped investment consisted of (1) construction and sealing of two national roads, the Efate Ring Road and the Santo East Coast Road, and (2) institutional strengthening of the PWD.

By the end of the compact, the GoV spent 99.5 percent of the compact budget to develop road infrastructure designed to help poor, rural agricultural producers and providers of tourist-related goods and services.

Under the Transport Infrastructure Project, 149.7 kilometers of roads were upgraded during the compact term—92.5 kilometers of the Efate Ring Road and 57.2 kilometers of the Santo East Coast Road. This work was completed with MCC funding, complemented by a funding agreement between the GoV and the New Zealand Agency for International Development (AID) in the amount of NZD 14 million (approximately US \$9 million). As a result, the average travel time was reduced by up to 50 percent on Efate Island and up to 75 percent on Santo Island. In the first year of the compact, the GoV also increased its road maintenance fund by approximately \$500,000, and the PWD hired seven additional officers to help ensure the sustainability of the roads.

An independent evaluation of the project, completed in 2011, included a simple recalculation of the economic rate of return (ERR), and examined benefits based on reduced vehicle operating cost attributable to road improvements and increased traffic use. The evaluator's overall ERR for the compact took into account the sealing of both roads, which yielded a combined ERR of 10.3 percent. The evaluation showed that due to the traffic count in December 2010, with a projected annual traffic growth rate of 3 percent over a 20-year period, resealing of the road in the future would not be justified.

This report provides a summary of the tangible results of the compact program, documents changes in compact activities and the reasons behind them, details information on performance against targets in the monitoring plan and summarizes the results of the project's independent evaluation.

Country Context

MCC's Board of Directors selected Vanuatu to develop a compact in 2004. Vanuatu is a small island nation comprised of 83 separate islands in the South Pacific. At the time of compact signing, approximately half of the population lived in poverty and agriculture and tourism were central to Vanuatu's growth. These two sectors together employed 70 percent of Vanuatu's working population and represented almost one-third of the country's GDP. However, under-developed, substandard, and poorly maintained transportation infrastructure was a critical constraint to formal economic activity and private sector investment in the agriculture and tourism sectors.

As one of MCC's first partnerships, the Vanuatu Compact predates MCC's use of the constraints analysis in the compact development process.¹ Thus, to identify proposed projects the GoV initiated a comprehensive consultative process consisting of public forums and meetings with the council of chiefs, women's group leaders, the private sector, donor partners, NGOs, religious leaders, and government officials from Vanuatu's provinces. The lack of adequate transport infrastructure repeatedly surfaced as a priority—and even served as a barrier to meeting attendance. As a result of these consultations, the GoV chose to target its compact proposal toward improving the country's transportation infrastructure. Additional analyses were completed to determine which proposed investments would yield the greatest economic returns.

The Vanuatu Compact, its concepts, project and activity designs, and monitoring & evaluation (M&E) plans were developed prior to the full operationalization of MCC's gender and social inclusion (GSI) guidance and evidence-based approaches to compact development, as well as its current institutional commitments. It is possible that MCC's subsequent GSI and M&E processes would have resulted in a different design, especially with regards to delivering benefits to women and disadvantaged groups, as well as more robust tracking and analysis of gender and inclusion-oriented disaggregated data, indicators, and outcomes. Consequently, MCC is unable to provide an analysis or more fulsome discussion of the distributional impact of the investments and differentiated socio-economic outcomes of this compact. Read the description of MCC's current approach to [gender and social inclusion](#).

Under MCC's country ownership model, MCC's country counterparts are responsible for implementing MCC-funded programs. Partner governments establish accountable entities typically known as Millennium Challenge Accounts (MCAs) to manage the implementation of compact projects. In Vanuatu, MCA-Vanuatu (MCA-V) was created to implement the country's program.

From the beginning, the level of staffing and lack of relevant prior staff experience at MCA-V was a concern. When the compact entered into force, none of the original staff had prior management experience with large projects. The implementation phase from mid-2008 to early 2009 proved a challenge, as several staff departures meant the MCA-V staff was reduced to a team of four, with officers acting in several positions. As a small unit, it was difficult for MCA-V to take advantage of the capacity building programs offered by MCC. In 2009, an international engineer was recruited as a project manager to replace the vacant local engineer position. MCA-V only achieved full staffing in the fourth year of implementation. It would have been beneficial if the MCA-V had been fully staffed with experienced staff before entry into force. The difficulty of sourcing persons to come in at different times and with the right

set of skills caused delays and problems. To some degree, this was mitigated by outsourcing to private consultants.

The compact was governed by a Steering Committee, which served the function of a board of directors. The Steering Committee included 12 voting members and three non-voting observers. The biggest challenge to effective governance of the compact was that the Steering Committee was initially too large and made up of senior government officers who were often dealing with competing priorities. As such, committee meetings often started late or were postponed due to lack of quorum and major decisions were often hastily made. This proved unwieldy, and in the third year of implementation, the committee was reduced to seven voting members and two observers.

Ultimately, MCA-V completed the compact and served as a model and the basis for the successor entity, the Vanuatu Project Management Unit (VPMU), established by the GoV on August 29, 2011. The VPMU represented a significant transitional initiative undertaken by the GoV. It managed the defects liability period for the roads constructed under the compact, and continues to manage projects funded by other development partners, such as the Asian Development Bank, New Zealand AID, the Japan International Cooperation Agency (JICA), and Australian AID, using similar contract and project management standards.

At a Glance

- Original Amount at Compact Signing:
\$65,690,000
- Amount spent:
\$65,403,517.68

- Signed:
March 2, 2006
- Entry Into Force:
April 28, 2006
- Closed:
April 28, 2011

- 14,783² Estimated beneficiaries over 20 years
MCC considers beneficiaries of projects to be those individuals who realize improved standards of living, primarily through higher incomes, as a result of economic gains generated by MCC-funded projects.
- \$83,500,000³ Estimated net benefits over 20 years
“Estimated Net Benefits” is the sum of all projected net benefits accruing over the life of the project, typically 20 years, evaluated at a 10% discount rate. Estimates are reported in millions of US dollars in the year that the ERR analysis was completed.

- [Compact Agreement](#)
- [M&E Plan](#)
- [Key Performance Indicators](#)

Transport Infrastructure Project

- \$60,690,000 Original Compact Project Amount
- \$60,084,297.52 Total Disbursed

Estimated Benefits

Estimated benefits correspond to \$60.1 million of project funds, where cost-benefit analysis was conducted.⁴

		Estimated Economic Rate of Return over 20 years	Estimated beneficiaries over 20 years	Estimated net benefits over 20 years
Transport Infrastructure Project ⁵	At the time of signing (March 2006)	24.7	65,227	N/A
	Updated (July 2009)	20.7	14,783	83,514,460

Project Summary

The **Transport Infrastructure Project** aimed to increase adequate and reliable transport infrastructure services as well as overcome the impact of poor transport infrastructure on formal economic activity and investment in the agriculture and tourism sectors—two primary sources of growth and employment in Vanuatu. The project sought to benefit poor, rural agricultural producers and providers of tourist-related goods and services by reducing transportation costs and improving the reliability of and access to transportation services. The project consisted of two principal activities: The Infrastructure Activity and the Institutional Strengthening Activity.

The **Infrastructure Activity** (original budget \$54.47 million; total disbursed: \$58.33 million) originally included civil works for the reconstruction of priority transport infrastructure on eight islands, covering roads, wharfs, airstrips, and warehouses. The eleven sub-projects included:

1. Efate island – Upgrade 90km of the Ring Road;
2. Santo island – Upgrade 70km of the East Coast Road from Luganville to Port Orly;
3. Santo island – Upgrade South Coast Road Bridges (5);
4. Malekula island – Reconstruct 11km of the Norsup Lakatoro Lits Lits Road;
5. Malekula island – Upgrade South West Bay Airstrip;
6. Pentecost island – Construct the Lolong Wharf and Upgrade of North-South Road to Wharf;
7. Tanna island – Reconstruct the Whitesands Road;
8. Epi island – Upgrade Lamén Bay Wharf;
9. Ambae island – Reconstruct Creek Crossings on 50km Road section;

10. Malo island – Upgrade 15km of Roads; and
11. Warehouses (for produce and freight storage) on five islands: (i) Ambae island (Lolowai), (ii) Epi island, (Lamen Bay) (iii) Pentecost island (Loltong), (iv) Malo island (Nunuka), and (v) Malekula island (South West Bay).

Following initial delays in program implementation, in early 2008 the bids received for the design and construction of all sub-projects came in at approximately three times the project budget. MCC, the GoV, and MCA-V recognized that rising construction costs, changes in currency exchange rates, and delays in mobilizing implementing entities and contractors limited MCA-V's ability to implement the Infrastructure Activity within its allocated budget and timeline. MCC and the GoV considered several options for restructuring the program. Ultimately, the Infrastructure Activity was re-scoped to eliminate nine of the original 11 sub-projects and focus on the construction and sealing of two high priority national roads: the Efate Ring Road (92.5 km, comprised of five road segments: Klehnm's Hill, Tanoliu, Takara, Pang Pang, and Rentabao) and portions of the Santo East Coast Road (57.2 km, comprised of four road segments: Rubbish Dump, Matevulu, Kole, and Hog Harbour). To further support this work, the GoV signed a funding agreement with New Zealand AID in June 2009 to provide NZD14 million (equivalent to US \$9 million). The commitment and partnership resulted in both roads being constructed and sealed with an asphalt surface treatment five months ahead of the compact end date.

The compact was completed prior to MCC's adoption of the IFC Performance Standards and the MCC Road Safety Policy, but nonetheless the MCC Environmental Guidelines (2006) required the completion of Environmental and Social Impact Assessments (ESIA), Environmental and Social Management Plans (ESMPs) and Resettlement Action Plans (RAP), and the implementation of these plans to protect the sensitive island environment and its people. The ESIA, ESMPs and RAPs were developed for the Efate Ring Road and the Santo East Coast Road and were implemented in a satisfactory manner. Public consultation and disclosures were completed as part of the ESIA and RAP process.

The Infrastructure Activity also included the introduction of community-based road maintenance and road safety improvements for both roads. The compact supported an evaluation of road safety needs to guide the development of road safety interventions, including engineering solutions, education, and enforcement. These interventions were subsequently implemented as a part of the infrastructure developed under the compact.

The **Institutional Strengthening Activity** (original budget: \$6.22 million; total disbursed: \$1.75 million) aimed to provide focused assistance to the Public Works Department (PWD), which was responsible for maintaining the country's national road network, including the two MCC-funded roads, by removing key constraints that the institution faced in effectively delivering maintenance and repair services. The activity also aimed to provide support for the sustainability and viability of the PWD through organizational reform. The initial scope of this activity included:

- Provision of plant and equipment to maintain road and airstrip infrastructure in order to facilitate enhanced sustainability and maintenance of infrastructure assets; and
- Technical assistance for the development of annual PWD action plans for maintenance and repairs and annual audits of PWD performance.

The PWD additionally requested budget support to fund incremental costs incurred as a result of project administration during the compact period. MCC and MCA-V agreed to fund new positions or secondments (detailees) that were not established Vanuatu Government Public Service Commission positions. The new positions, within the Engineering Support Unit (ESU), were established in an attempt by MCA-V, MCC, and the Ministry of Infrastructure and Public Utilities to strengthen the capacity of the PWD.

As part of the compact, PWD was required to meet specific performance targets established in an annual action plan for effective delivery of road maintenance and repairs. Performance was measured through annual audits to gauge PWD performance against targets. The GoV's policy interventions did not adequately address expectations of the PWD's ability to maintain all roads, including the two new roads funded by the compact, despite the increase in funding and technical capacity over the compact term. Road maintenance was hampered by frequent government and ministerial changes, political interference, the lack of and retention of qualified engineers, the lack of road maintenance plants and equipment, and the perceived lack of funding. While these problems were more intrinsic to PWD, there were questions about the stability of the ESU to function within the PWD to utilize expertise gained. This was a lost opportunity which may have impacted the scope of PWD's ability to carry out road maintenance.

Therefore, in 2008, funds earmarked for the Institutional Strengthening Activity were not utilized and were reallocated to the Infrastructure Activity due to (i) the GoV's failure to meet certain performance targets under the PWD annual action plan, (ii) the revised scope of the Infrastructure Activity, and (iii) the PWD's capacity to absorb technical assistance and capacity building efforts.

Despite the reduction in scope, the activity accomplishments as a result of the technical assistance provided to PWD included:

- Recruitment and training of new ESU staff, consisting of an engineer, three site supervisors, two environmental and social impact officers, and an administrative officer;
- Recruitment of a new manager for compact responsibilities;
- Establishment of two road maintenance crews; and
- Engagement of a road assessment and maintenance management consultant to:
 - improve the inventory of roads;
 - identify and develop systematic inspections, maintenance management plans, and budgets for road asset maintenance;
 - promote strategic use of increased government funds for maintenance following construction; and
 - advise on legislative reforms for road sustainability and safety.

By the end of the compact the Institutional Strengthening Activity also provided over \$1 million in plant and maintenance equipment for the PWD, the introduction and training of nine community-based road maintenance crew members in procedures for maintaining and sealing roads and use of equipment, permanent hiring of seven trained ESU employees to further ensure sustainability of the compact investments, and hiring and training of 167 full-time workers to support future PWD manpower requirements. Road condition surveys, as part of the PWD action plan, were also conducted to establish baseline road conditions on the Efate Ring Road and portions of the Santo East Coast Road in order to

measure against performance targets. In 2011, in support of the sustainability of the compact-funded roads, the GoV also increased their national road maintenance budget commitment from \$5 million to \$5.5 million.

Evaluation Findings

One performance evaluation was undertaken for the Transport Infrastructure Project. The evaluation used the Highway Development and Maintenance (HDM-4) model ⁶, and was completed in 2011.

The analysis examined whether the road upgrades for the Santo East Coast and Efate Ring Roads:

1. Reduced road roughness
2. Increased traffic volume
3. Decreased vehicle operating costs.

Data for the HDM-4 analysis was collected before road sealing in 2008 and after road sealing in 2010. Key findings from that analysis are presented below and additional details can be found in the [Vanuatu Road Evaluation Brief](#).

Road Extension and Condition:

- Prior to the intervention, the condition of the unpaved coral roads was very poor—with erosion gullies and deep depressions—equivalent to an international road roughness index of 15.
- Following the double surface dressing, the road condition improved to a smoother surface with only minor depressions—equivalent to an international road roughness of 3.

Traffic Volume:

- Traffic volumes increased between 5 percent and over 300 percent from 2008 to 2010 across various road segments after the roads were sealed.

Vehicle Operating Costs and Sustainability:

- Three and four-axle trucks accrued 70 percent of the total vehicle operating cost savings.
- The analysis reports an economic rate of return of 10.3 percent when considering the full package of road segments, though this was largely driven by higher economic rates of return for road segments with greater than 400 annual average daily traffic counts.

MCC noted the lessons that came from the [Vanuatu Road Evaluation Brief](#), many of which build on the implementation lessons noted below:

- Although not relevant for the Efate Ring Road given engineering requirements for a uniform design standard, segment-specific analysis is important when considering a road investment as it may not be cost-effective to upgrade every segment of the road.
- It is critical to incorporate sensitivity analysis into ex-ante cost-benefit analysis to understand what level of risk MCC is taking in its assumptions about key parameters, such as traffic counts.

- For future MCC road investments to produce the highest return for the largest number of beneficiaries, the investments should be identified through an analysis of the relevant road network that assesses key criteria, such as current traffic volume and road roughness.
- Collect accurate baseline data to properly document traffic volume and road roughness.

The findings from this evaluation also contributed to MCC learning in the transport sector, as detailed in the “[Lessons from MCC’s Investments in Roads](#)” (2017) publication in MCC’s [Principles into Practice](#) series.

Key performance indicators and outputs at compact end date

Indicators	Baseline (2006)	Actual Achieved (2011)	End of Compact Target (2011)	Percent Complete ⁷
Kilometers of Efate Ring Road Completed	0	92.5	92.5	100%
Kilometers of Santo East Coast Road Completed	0	57.2	57.2	100%
Number of International Tourists per Annum	61,453	90,062	87,743	109%
International Roughness Index ⁸ : Efate Ring Road	17.5	3.0	3.5	104%
International Roughness Index: Santo East Coast Road	22	3.0	3.5	103%
Average Annual Daily Traffic – Efate: Ring Road	85	305	98	1692%
Average Annual Daily Traffic – Santo: East Coast Road	307	381	355	154%
Number of Days	9	0	0	100%

Indicators	Baseline (2006)	Actual Achieved (2011)	End of Compact Target (2011)	Percent Complete ⁷
Efate Ring Road is closed per year				
Kilometers of Efate Ring Road under cyclical maintenance community contracts issued by PWD	0	52.9	92.5	57%
Kilometers of Santo East Coast Road under cyclical maintenance community contracts issued by PWD	0	14.4	57.2	25%
PWD Efate Ring Road maintenance crew members (4) trained and certified in sealed road maintenance procedures and equipment	Not applicable	9-May-11	28-Apr-11	Completed
PWD Santo East Coast Road maintenance crews trained in sealed road maintenance procedures and equipment	Not applicable	28-Apr-11	29-Apr-11	Completed

Explanation of Results

By the compact end date, 52.9 kilometers of 92.5 kilometers of the Efate Ring Road (57 percent) and 14.4 kilometers of 57.2 kilometers of the Santo East Coast Road (25 percent) were maintained under cyclical

maintenance community contracts. This was due to the GoV's limited financial capacity to fund road maintenance. However, after the compact end date and under the leadership of the GoV, new community contracts were progressively executed as road sections were certified for takeover and crew members completed related road maintenance training. MCC received notice that as of January 1, 2012, all contracts for the Efate Ring Road and the Santo East Coast Road were signed by PWD and fully funded by the GoV.

Compact Changes

Due to escalating global construction costs, currency fluctuations, and delays in mobilizing implementing entities and contractors, the Infrastructure Activity was restructured in early 2008. The Efate Ring Road (92.5 kilometers) and the Santo East Coast Road (57.2 kilometers) became the focus of the restructured compact.

By the end of the compact, a portion of the Institutional Strengthening Activity was re-scoped due to the GoV's inability to meet certain milestones related to the implementation of effective policies and procedures that would have supported efficient road maintenance fund management. The activity budget was reduced, and funds were reallocated to the Infrastructure Activity.

Coordination and Partnerships

Following the results of the bidding process in February 2008, which indicated a shortfall of compact funds, the GoV solicited additional funding from the New Zealand AID. In June 2009, the GoV signed a funding agreement with New Zealand AID to provide NZD14 million (equivalent to US \$9 million) in additional funding support which contributed to completing the construction and sealing of both roads. The continued commitment and partnership resulted in all major construction of the re-scoped project being completed five months ahead of the compact end date.

Conditions Precedent

Key Compact Component(s)	Major CP or Policy Reform	Rating Met on Time/Deferred/Waived
Infrastructure Activity	Community Maintenance Contracts: Establishment of Maintenance Contracts with community representatives (with rural villages)	Met
Infrastructure Activity	MCA-Vanuatu provides evidence that any required resettlement action plan has been completed and implemented in accordance with WB Involuntary Resettlement Policy (OP 4.12), in a manner acceptable to MCC	Met
Institutional Strengthening Activity	PWD Performance Contract: The Government, via appropriation, will allocate adequate budgetary increase in Government funds for road maintenance.	Met
Institutional Strengthening Activity	Prior to disbursement in Quarter 4 of Year 1, the PWD Service Performance Contract shall be executed and in full force and effect	Met
Institutional Strengthening Activity	PWD Performance Contract: PWD compliance with Service Performance Contract and annual action plan of the previous year.	Met

Lessons Learned

At the time of the development and implementation of the Vanuatu compact, many of the practices and policies that currently govern MCC's compact development and implementation had not been developed. MCC currently applies a more rigorous approach and continues to refine its approaches in its commitment to enhance transparency and focus on results. The learning captured in the closed compact reports and MCC's newer Star Reports helps to inform MCC's evolving practice to refine and strengthen its own model and development guidance. Through the implementation of the Transport Infrastructure Project, MCC noted the following lessons. These lessons were identified at the end of the compact in 2011, and are framed within this context:

Conduct enhanced due diligence in order to more accurately estimate project costs. Detailed design, rather than preliminary design, should be used to estimate project costs. This is particularly important for construction work on islands or in difficult terrain as all construction materials have to be hauled in and the rubbish needs to be managed with extra care. In the Vanuatu Compact, costs were significantly underestimated and there was insufficient contingency. This contributed to the two-year delay early in the compact implementation period and the inability to complete the original scope of the compact.

Incorporate varying levels and types of analysis to gauge ERR risk. When considering a road investment, segment-specific analysis should assess the benefits and cost of improving an entire road versus different segments, based on traffic and road conditions for each segment. Just as road designs should incorporate sensitivity analysis into the cost benefit analyses, MCC's investments in evaluations should consider sensitivity analyses to determine whether costly evaluation data collection activities are warranted in terms of improved results accuracy. And finally, to further improve evaluations, it is critical to collect accurate baseline traffic data to understand how the levels and composition of traffic change after road improvements.

Staff expertise must meet the position requirements. MCA staff must have the appropriate qualifications to implement the program in accordance with MCC standards and international best practices. MCA-V struggled to recruit staff with international project management and relevant contract experience. It is imperative for MCC to provide the necessary oversight of the accountable entity's recruitment process to ensure that all hired staff have the necessary skills and experience to implement the program.

The composition of compact governance bodies should be carefully considered. The compact started off with a Steering Committee that was too large (twelve voting members and three non-voting observers), and this proved unwieldy and problematic. When it was reduced to seven members with a quorum of four, this situation was improved. MCC should ensure that the composition of the steering committees or board of directors is well represented and dedicated, while keeping the number of representatives reasonable.

Thoroughly assess the institutional capacity of implementing entities to absorb support. Institutional capacity should be assessed and strengthened early in the compact process. The planned policy interventions did not adequately take into account the limited ability of the PWD to maintain all road

infrastructure in Vanuatu, including the two MCC-funded roads, despite the increases in the funding, availability of equipment, and technical capacity that were instituted over the five years of the compact. PWD's performance was hampered by frequent government and ministerial changes, lack of adequate road maintenance plant and equipment, insufficient government funding, unqualified engineers, high turnover, limited institutional capacity and policy reforms, and poor management and planning. MCC should carefully consider establishing targeted conditions precedent and deadlines to enable course corrections that can address institutional weaknesses early. Given the late recognition of this problem, the MCC and MCA-V agreed to reallocate funds from the Institutional Strengthening Activity to the Infrastructure Activity as the PWD did not meet the required conditions or perform according to what was agreed upon in the compact.

Take advantage of the capacity built beyond the life of the compact. The GoV took advantage of the capacity developed by the MCA-V in project implementation and contract management by establishing the VPMU, the successor entity, which opened its doors in August 2011, based on the MCA-V model and core staff. The VPMU oversaw the remainder of the defects period with the road contractor, managed some important bridge repairs on Santo and Efate, and continues to oversee additional projects funded by other donors.

Collect and maintain data for future project design and monitoring. Vanuatu faced an issue common in many of developing countries with baseline data and information difficult to find or nonexistent. In the early stages of compact development, MCC should encourage country counterparts to gather the necessary data needed to establish baselines. MCA-V was able to work through relevant agencies to obtain vital background information and build on this to create its own M&E Plan and Indicator Tracking Table to monitor and track information for the purposes of the project. Government agencies' ability to gather, manage, disseminate, and utilize data to inform future project design and implementation is critical.

Endnotes

1. Beginning in 2009, MCC began undertaking constraints analyses based on the Hausmann, Rodrik, and Velasco diagnostic method in the preliminary analysis phase of each compact.
2. The number of beneficiaries was revised downwards from 65,227 following the re-scoping of the compact in 2008. The revised calculation was based on a catchment area of 5 km, while the original calculation included beneficiaries that lived beyond the 5 km catchment area. At compact closure, no other beneficiary analysis was reported.
3. MCC did not estimate closeout ERRs for this compact. The reported number corresponds to a 2009 re-scoping ERR analysis. The validation of this ERR is limited considerably due to a lack of documentation on the cost-benefit analysis model and supporting materials.
4. MCC did not produce a closeout ERR. The ERR reported here and the net benefits are documented in a re-scoped July 2009 document. MCC's publicly available ERR analysis was conducted by an independent evaluator in lieu of a closeout ERR. Please see the "Evaluation Findings" section for details on the publicly available ERR.
5. At the time of compact signing, the project was comprised of two activities and eleven infrastructure sub-activities under the Infrastructure Activity. During implementation, this activity was restructured to only include two sub-activities—the Efate Ring Road and the Santo East Coast Road. This report assumes that, in accordance with practice followed at the time, the project ERR was estimated combining the Institutional Strengthening and Infrastructure Activities.
6. The Highway Development and Maintenance (HDM-4) and Road Economic Decision (RED) models are MCC's standard tools to evaluate roads. Both models take into account vehicle operating cost savings and time savings as part of a decision-making tool for road investments.
7. MCC uses the following formula to calculate Percent Complete for all numerical indicators, $(\text{Actual} - \text{Baseline}) / (\text{Target} - \text{Baseline}) * 100$
8. International Roughness Index (IRI): Roughness is a measure of the irregularity of the road surface. It affects the operation of a vehicle (safety, comfort and speed of travel) and costs of operation through vehicle wear, fuel consumption and the value of human and asset time spent in transit. This affects the economic evaluation of proposed road maintenance and upgrading expenditures.

Reducing Poverty Through Growth

