

# Formulating Rural Road Policy and Strategy in a Developing Country Environment with Key Stakeholders including Academic Institutions

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**Abstract** — *There is overwhelming evidence indicating strong positive links between improved rural access and poverty reduction; and, that improving access contributes towards the achievement of a number of Millennium Development Goals (MDGs), which are a central feature of development policy. The development of rural roads is considered to be one of the key options to improve the rural access. However, the absence of comprehensive and coherent rural roads policy and strategic direction leads to ad-hoc planning and decision making, resulting in wasted, poor and underperforming investments. This was the case in Cambodia, which is one of the poorest countries in the world. This lack of effective direction has discouraged the investment in the sub-sector by both the government and development partners. In year 2005, the Ministry of Rural Development of the Royal Government of Cambodia embarked on the development of the rural road policy and strategic plan. This exercise posed a number of challenges including (i) identification of the key issues; (ii) absence of reliable physical, social and economic data; (iii) involvement of stakeholders in the process; and, (iv) integration of the policy and strategy messages into the Engineering University curriculum. This paper discusses the process of the formulation of the Cambodian Rural Road Policy and Strategic Plan. It highlights the process of identification of main issues for improving rural access by developing low volume roads. It provides examples of the policy directions and how these directions have been used in the formulation of the strategic plan. It explains the analysis process which needed to take into account the lack of data availability. The paper also highlights the involvement of the academic institutions in the development and dissemination of the outputs including the updating of the relevant policy and strategy related course module that is being taught as a part of the under-graduate level engineering curriculum. It finally details the lessons learned in this process.*

**Index Terms** — *development, rural access, roads, policy, strategy*

## INTRODUCTION

Cambodia is a poor country with a per capita Gross National Income of US\$ 320, and poverty is pervasive. Approximately 90% of the Cambodian population (12 million) live in rural areas, and poverty reduction in the country will largely depend on the reduction of rural poverty and inequality [1]. There is overwhelming evidence that the provision of roads, in particular rural roads, that improve rural access, is a critical factor in reducing poverty in rural areas ([2]-[9]). Most rural roads in Cambodia (over 80%) are in a poor condition. Studies show that the transport burden on rural Cambodians is substantial and the supply response is inadequate ([10]-[11]). Better access will help to reduce this burden, enabling improvements in the socio-economic wellbeing of the rural population. Economic evaluations of rural road projects in Cambodia indicate high economic internal rates of return, and rural road investments can contribute to the achievement of a number of the Cambodia Millennium Development Goals ([12]-[15]).

Roads in Cambodia are divided into three broad categories: national, provincial, and rural. The rural roads consist of tertiary and three categories of sub-tertiary roads. While the Ministry of Public Works and Transport (MPWT) is responsible for the National and the Provincial roads, the Ministry of Rural Development (MRD) is responsible for the Tertiary and Sub-tertiary roads.

In late 2005 MRD started the development of a strategic plan for rural roads. The purpose of this plan was to set out the long-term direction and framework for rural road development and management. It was assumed that the plan would help in undertaking a consistent, coherent and unified approach to the rural roads programme. The plan is providing a sound basis on

which MRD can strengthen its capability to plan, design, construct, maintain and manage rural roads in a sustainable way; and the government can determine appropriate and complementary funding and other support for the rural road sub-sector. The strategic plan development process was completed in August 2006. The plan identified seven important issues to be addressed by MRD, the first of which was the updating of the policy for rural roads. Consequently, MRD has updated the rural roads policy. MRD is now processing the updated policy for official government approval. With both clear policies and strategies in hand, MRD is in a better position to effectively manage their rural road responsibilities.

This paper: Presents summarily the process of the development of the rural road policy and strategic plan including the main challenges faced; Highlights the main issues that were considered in the development of the policy and strategy; Provides examples of the policy directions and how these directions have been used in the formulation of the strategies; Explains how the academic institutions were involved in the development and dissemination of the outputs including the updating of relevant modules for inclusion in the under-graduate level engineering curriculum; and, Identifies the lessons learned in this process.

## MAIN CHALLENGES

The formulation of rural road policy and strategies in a least developed country is highly challenging. Recently in Cambodia challenges included:

- **Identification of key issues:** What are the key issues that should be considered?
- **Absence of reliable data:** What approaches should be used when relevant physical, social and economic data are scarce?
- **Involvement of stakeholders in the process:** How should the stakeholders effectively be involved in the process?
- **Integration of the policy and strategy messages into the academic curriculum:** How should academia be appropriately involved in the process and what outputs are relevant for integration into the university engineering curriculum?
- **The approval process and dissemination of the documents:** How should MRD be helped in the approval process how should MRD disseminate the documents to those who need to be informed?

## METHODOLOGY

### Main approach

Figure 1, outlines the process approach that was used in the development of the Cambodian rural roads policy and strategy. The approach involves a number of activities including brainstorming, group discussions, stakeholder consultations, and drafting and finalizing documents. The process was guided by a Working Group (WG) led and appointed by MRD. A consultant team facilitated the process. The team provided support to MRD in summarising the outputs from brainstorming and discussion sessions, data analysis and writing the documents. There were a total of 12 main steps in the process:

- **Step 1: Formation of the Working Group (WG)** - This is an important starting point. The WG was officially appointed by MRD. The WG was crucial to the process, by leading and enhancing eventual ownership of the policy and strategy.
- **Step 2: Development of vision and goal statements and identification of key issues** - The process of developing the policy and strategic plan started with an agreement on a vision of what MRD wanted the rural road program to achieve. This was distilled to become the development objective. The WG identified the key issues that the policy and strategy needed to address to achieve the objective. A number of brainstorming and discussion sessions were held with the WG to identify these issues. The issues were then organised into four broad categories (programming and planning, financing, sustainability and institutional).
- **Step 3: Collect, assess, and analyze data relevant to key the issues** - The availability of relevant and reliable data was one of the main difficulties faced. For instance, Cambodia does not have a comprehensive rural roads inventory. Only a partial inventory covering four provinces out of the total 20 provinces was available. Road inventory data is crucial in choosing a number of the strategic directions such as the resource requirements, network improvement rates, etc. This prompted the collection of data from the rest of the provinces but on a limited scale. The collected road network length and condition data had to be extrapolated in order to estimate the overall network size and condition. The data were then analysed and the information generated from the analyses was used in the elaboration of issues and in the generation of strategic options.

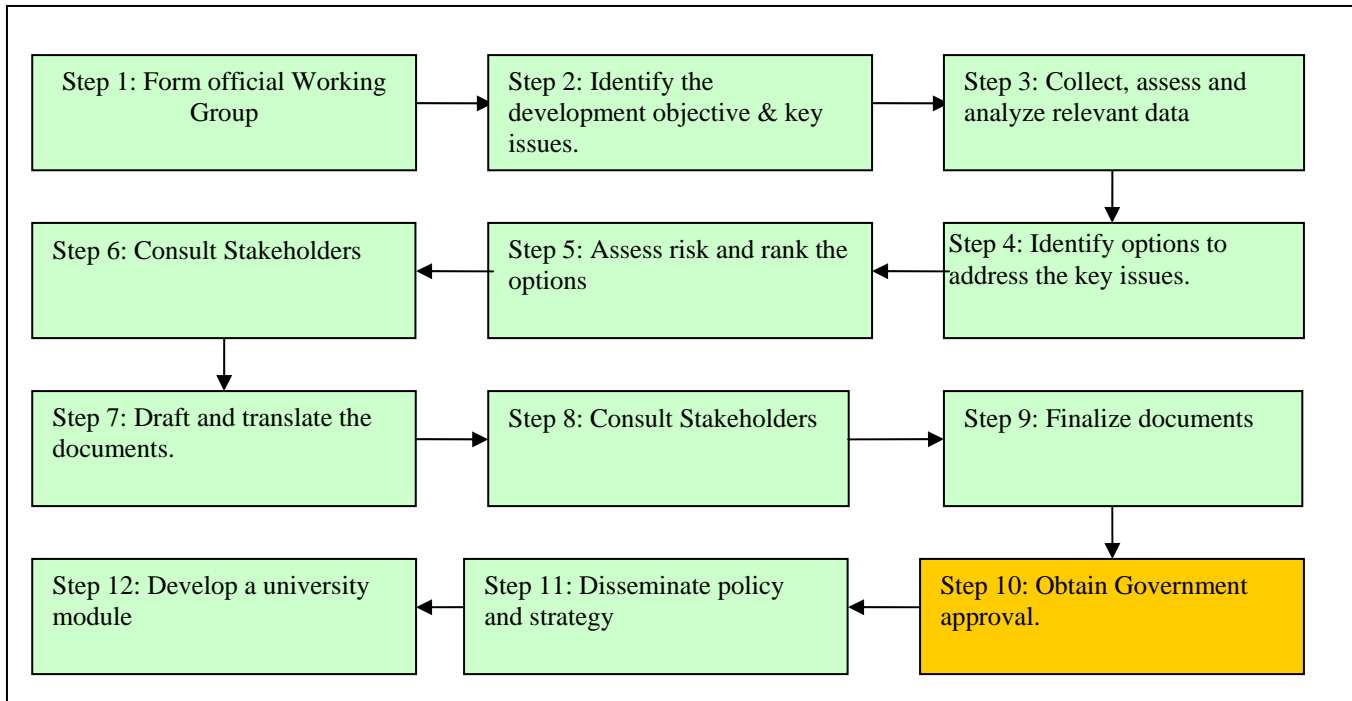


FIGURE 1

DEVELOPMENT PROCESS FOR THE RURAL ROADS POLICY .AND STRATEGY

- **Step 4: Identify options to address the key issues** - This step involved the generation of multiple options that could be used to address the key issues.
- **Step 5: Assess the risk and rank the options** - At this point the options including the advantages and risks of each option were examined, and ranked accordingly. Also the potential constraints and obstacles linked to four areas (financial, institutional, legal and technological) were assessed.
- **Step 6: Stakeholder consultation** - Stakeholder consultations were an integral part of the process. Stakeholders included both internal (e.g. officials of provincial offices) and external (e.g. other ministries, development partners, academia, civil society representatives etc.) people. These Stakeholders were consulted, both formally and informally, throughout the process.
- **Step 7: Draft the documents** - At this point, the policy and strategy documents were drafted and circulated to the stakeholders.
- **Step 8: Stakeholder consultation** - The draft documents were the basis for a final round of stakeholder consultations.
- **Step 9: Finalize the documents** - The stakeholder comments on the draft documents were incorporated into the final documents.
- **Step 10: Government approval** - One of the main problems faced in developing countries is that even if the policy or strategies are developed they are often not formally promulgated. This has also occurred in Cambodia. For instance, two previous rural roads policy documents (1999 and 2002) were prepared, but were not taken forward for Government endorsement. The approval process can be daunting because it is often cumbersome and lengthy requiring a high level of effort and patience. This problem prompted the development of a roadmap to help guide the approval process. The roadmap elaborates the steps that are required along with the identification of the officials responsible for the process within a time-frame.
- **Step 11: Dissemination of the Policy and Strategy to the stakeholders**- It is common that Ministries will not follow up and disseminate the policy and strategy to the stakeholders, which is crucial for their effective uptake, once they are approved. In this case a dissemination strategy was developed as a part of the policy and plan development process.
- **Step 12: Inclusion of appropriate aspects of the policy and strategy within the university engineering curriculum**- This step involved updating the related course module for under-graduate engineering students. This was done with active participation from the course lecturers.

## VISION, GOALS AND ISSUES

The vision statement formulated by MRD in relation to the rural roads policy is:

**”Every Person** living in rural Cambodia will have year-round access to basic needs, economic and social facilities, services and opportunities.”

TABLE 1  
IDENTIFIED ISSUES.

Category	Issues
Programming & planning	<p><b>Road inventory</b> – km of rural roads, their conditions, type etc.</p> <p><b>Investment prioritisation</b> – prioritisation of the improvement and maintenance investments.</p> <p><b>Network improvement rate</b> – at what pace the roads should be developed?</p> <p><b>Inter-modal integration</b> - how the road transport should be integrated with other modes (especially with water transport modes)</p> <p><b>Rural road design standards</b> - to what standards the roads will be developed?</p> <p><b>Rural transport services</b> – what are the roles of transport services (buses, mini-buses etc.) in the rural mobility improvement?</p> <p><b>Gender</b> – gender issues in rural roads</p> <p><b>Environmental consideration</b> – environmental issues in the development and maintenance of rural roads</p> <p><b>Road safety</b> – safety issues in rural roads</p> <p><b>HIV/AIDS</b> – HIV/AIDS and other infectious diseases issues linked to road development.</p>
Financing	<p><b>Stakeholder participation</b> – how stakeholders participation can be ensured in the development and management of rural roads?</p> <p><b>Overall funding</b> – what levels of funding will be required for the development and maintenance of rural roads?</p> <p><b>Improvement versus maintenance funding</b> - how the funds between improvement and maintenance be divided?</p>
Sustainability	<p><b>Organising and implementing maintenance</b> - how the maintenance operations would be organised and implemented.</p> <p><b>Vehicle overloading control</b> – how overloading on roads will be controlled?</p> <p><b>Involvement of private sector in road development and maintenance</b> - What would be the roles of the private sector in the development and maintenance of roads?</p> <p><b>Use of local resource based technologies</b> - how the local resources best be used in the development and maintenance of rural roads?</p>
Institutional	<p><b>Monitoring and evaluation:</b> how to measure and assess the performance of rural roads projects and programmes?</p> <p><b>Delegation of responsibilities to local government</b> - how local governments best be involved in the development and management of rural road?</p> <p><b>Institutional capacity development at the national and provincial levels</b> - what institutional capacities exists at the national and provincial levels and how best they can be developed?</p> <p><b>Communication and coordination</b> - what would be the best communication and coordination mechanism for the management of rural roads?</p>

### The Mission statement is:

“To efficiently develop and manage sustainable rural transport infrastructure, modes and services. More specifically:

- Rural access will be efficiently developed and managed to ensure optimal economic returns on investment; connectivity to higher order transport infrastructure; benefits to society; and the use of local resources.
- Rural access will be sustainable in economic, social and environmental terms.
- Land and water rural transport infrastructure will be complementary to improve mobility and access of rural women and men.
- Rural transport modes and services will be affordable, equitable, dependable and safe.”

## POLICY AND STRATEGY EXAMPLES

The policy and strategy identify 21 issues. The following is an example of the option selected for the issue linked to the road inventory:

### Policy Objective

- To have a reliable database of the rural road network and related infrastructure to enable informed decision making.

### The policy direction

- It will be a top priority of MRD to complete the Cambodia-wide rural road and related infrastructure inventory.

- b. Efforts to capture the spatial and attribute data in an electronic database will continue. Each rural road will be categorised and assigned a unique identification number.
- c. IRAP/GIS units at MRD headquarters and PDRD offices will be expanded and strengthened for the effective management of the rural infrastructure database.

## Strategy

### Strategic options considered

- **Option 1:** start the development of a complete rural infrastructure inventory immediately, including that of roads, building on the experience gained during the implementation of the Integrated Rural Accessibility Planning (IRAP)/Geographic Information System (GIS) project.
- **Option 2:** progressively develop a complete rural infrastructure inventory under different rural infrastructure projects as done in four provinces under NRDP.

The chosen option is Option 1. The reason for choosing Option 1 being that the information on the network size and conditions is one of the essential requirements for any sensible road planning system. The level of barriers that have been identified in implementing Option 1 is: **Financial:** medium; **Institutional:** medium; **Legal:** low; **Technological:** high

### UPDATING OF A MODULE FOR AN ACADEMIC COURSE

In developing countries often the academia is not directly involved in government development initiatives and therefore, the teaching staff and students are not aware of the government policies and strategies. One of the major issues in the development of the rural roads related strategic plan and policy was the involvement of the academia and incorporation of the outputs into the university curriculum. The university faculty is considered one of the stakeholders and was involved in consultations, both formal and informal, throughout the policy and strategy development process. The existing module on the development policies of MRD, which is taught as a part of the Rural Engineering Course, has been updated to include the main features of the rural roads strategic plan and policy in consultation with the relevant faculty.

### MAIN LESSONS LEARNT AND CONCLUSIONS

A number of lessons were learnt, including:

- The “process” approach, that facilitates effective stakeholders involvement at all stages and hinges on taking decisions through discussions and debates, was found to be effective. Formalizing of the involvement of ministry officials in the WG was crucial in the process. This not only helped in the identification and exploration of the issues, but also promoted the eventual ownership of the outputs.
- The problems linked to the lack of adequate and reliable data can be overcome. One of the main challenges is the scarcity and quality of existing data. In certain instances it may be necessary to collect crucial primary data.
- Inclusion of university faculty as stakeholders helped in renewing the links between the University and MRD. The updating of the policy related course curriculum has been found to be a suitable way to disseminate the policy messages among the future private and public sector engineers.
- Assisting the ministry in the formal promulgation of the policy and strategic plan is an important activity in a country like Cambodia.

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