

Workshop Paper No 2

Rural Infrastructure and Poverty Reduction The Case of Cambodia

by

**H.E. Mr. Ngy Chanphal
Under Secretary of State, MRD**

Opportunities and Challenges

1. Cambodia is at an important crossroads in its development. Three decades of constant and, at its worst, genocidal conflict only ended in 1998, devastating much of the country's physical and social infrastructure, economic capacity, and human and social capital. This has left Cambodia as one of the world's poorest countries, with the GDP per capita of around US\$300 in 2002. Economic performance in the last few years was generally favorable, especially on the macroeconomic front. Annual real GDP growth averaged 6-7 percent, reflecting both favorable external developments relating to bilateral trade agreement with the US and large aid inflows, as well as prudent macroeconomic policies. Under political stability, private sector activities, including in the informal sector, are reported to have flourished in the urban areas. Despite five years strong growth¹, poverty remains high and human development indicators are low relative to other countries in the region.

2. In a country like Cambodia and it is presumed in most of the Asian countries, the eradication of misery and the alleviation of poverty necessarily go through social and economic development of rural areas. In Cambodia, 90% of the poor live in rural areas. For the vast majority, they rely on subsistence agriculture and access to such natural resources as forestry and fisheries. In a few works, the lack of opportunities, the extreme vulnerability of the poor, low capabilities and social exclusion could characterize poverty in Cambodia.

Development Goals and Strategy

3. The over-riding goal of the Royal Government of Cambodia during the third term (2004-2008) is to firmly and steadily build Cambodia society by strengthening peace, stability and social order, entrenching democracy, promoting respect for human rights and dignity, ensuring sustainable and equitable development, and strengthening Cambodian's social fabric to ensure that the Cambodian people are well-educated, culturally advanced, engaged in dignified livelihood and living in harmony in family and society.

4. The Government introduced a comprehensive reform agenda, known as the Rectangular Strategy 2004-2008. The Rectangular Strategy is the implementation framework for SEDPII² and NPRS³ for the third mandate of the Government. The Rectangular Strategy is an integrated structure of interlocking rectangles and the objectives of the Strategy are: (i) high economic growth and enhanced competitiveness; (ii) job creation; (iii) improved social equity; and (iv) increased public sector effectiveness. Or in short this Rectangular Strategy is for “Growth, Employment, Equity and Efficiency”.

5. The **core** of the Rectangular Strategy is **good governance** focused at four reform areas: (1) anti-corruption, (2) legal and judicial reform, (3) public administration reform including decentralization and deconcentration, and (4) reform of the armed forces especially demobilization. The overall **environment** for successful implementation consists of four elements: (i) peace, political stability and social order; (ii) partnership in development with all stakeholders, including the private sector, donor community and civil society; favorable macroeconomic and world. The Rectangular Strategy identifies the **priority sectors** as “**growth rectangles**” are: (i) enhancement of agriculture sector; (ii) private sector development and employment generation; (iii) continued rehabilitation and construction of physical infrastructure; and (iv) capacity building and human resource development. Each strategic “growth rectangle” has four sides:

Rectangle 1: *Enhancement of Agricultural Sector* which covers: (1) improved productivity and diversification of agriculture; (2) land reform and clearing of mines; (3) fisheries reform; and (4) forestry reform.

Rectangle 2: *Further Rehabilitation and Construction of Physical Infrastructure* involving: (1) further restoration and construction transport infrastructure (inland, marine and air transport); (2) management of water resources and irrigation; (3) development of energy and power grids, and (4) development of Information and Communication Technology.

Rectangle 3: *Private Sector Development and Employment Generation* covers: (1) strengthened private sector and attraction of investments; (2) promotion of SMEs; (3) creation of jobs and ensuring improved working conditions; and (4) establishment of social safety nets for civil servants, employees and workers; and

Rectangle 4: *Capacity Building and Human Resource Development*, including: (1) enhanced quality of education; (2) improvement of health services; (3) fostering gender equity; and (4) implementation of population policy.

Importance of Transport for Cambodia’s Development

6. Road transport is the dominant mode of transportation within Cambodia, accounting for 65 percent of all passenger traffic, and 70 percent of all cargo traffic with rail and river transport sharing the rest⁴. The road network covers about 38,700km, encompassing approximately 4,200km national or primary roads, 3,600km provincial or secondary roads and 31,000km of rural or tertiary roads and strategic roads. The roads

have a large number of bridges, about 4,000 on national highways alone. The highest class of primary roads, the national highways, extends from Phnom Penh to provincial capitals and the main access points to the country. Lesser national roads connect provincial capitals and connect to minor border crossings and important domestic centers. The secondary (provincial) and tertiary (rural and strategic) roads serve local transport needs. The road network was mostly built before 1960. The general design standards thus cater to lighter than current loads, with many existing bridges designed for gross vehicle road weights of 10 tons, well below the current standard of around 20 tons.

7. Most of the road network is dilapidated and large parts of the country are effectively isolated during the wet season. Road condition surveys in 2002 characterized that 25 percent of the network as being in good or fair condition, 40 percent as being in poor condition, and 28 percent as being in bad condition. 6 percent of the surveyed network is under reconstruction or rehabilitation. The un-rehabilitated sections of the road network are characterized by cracks, ruts, potholes, edge failures and pavement failures. It is estimated that at least half the primary road network and nearly all the secondary and tertiary roads are in need of urgent repair, rehabilitation or reconstruction. The RGC recognizes that the poor state of the country's road infrastructure poses a significant hindrance to economic development and emphasizes the urgency of reestablishing the country's transport infrastructure.⁵ Transportation networks are the arteries that connect all corners of the Kingdom of Cambodia and thereby transform the country into an integrated economy. Moreover, physical infrastructure plays a pivotal role as the "locomotive of economic growth," significantly contributing to poverty reduction and the alleviation of the people's hardships. Effective transport, as a complementary input to nearly every aspect of rural activity, is an essential element of rural poverty reduction⁶

Building physical infrastructure

8. Insufficiency of infrastructure assets is not just a symptom of poverty, but is also a cause of it. Communities with access to rural transport infrastructure assets are better able to exploit market and social opportunities to generate income, obtain a better quality of life, and achieve a sense of psychological well-being. Rural transport infrastructure is a key to expanding economic opportunities for poor people is to help build their asset base. Infrastructure improvements are for:

- Creating opportunity for Poor;
- Facilitating empowerment of Poor, and
- Enhancing social security of Poor.

9. Through improving community assets such as rural water supply and sanitation facilities and small-scale irrigation facilities, rural environment improved to promote healthy farm-based working forces for rural economic development and active commercialization process in rural areas. The rural development programs, through livelihood improvement projects, facilitate promoting income-generation and

employment opportunities such as rural credits, home-based and farm-based production improvements, vocation~ trainings, and market place improvements. Through rice-bank establishment household-based food production, agricultural and live stock development, an diversified crop production system improvements enhance food security.

Rehabilitation and Construction of Physical Infrastructure

10. Thus, the Royal Government will continue to accord high priority to the rehabilitation and reconstruction of transport networks, including bridges, road railroads, seaports, and airports that link all parts of the country and link Cambodia to neighboring countries and the rest of the world. The objective is / create a convenient, comprehensive, safe, effective and price-efficient transport network that facilitates trade, promotes tourism and rural development an ensure Cambodia's economic integration into the region and into the world, while especially serving the interests of national defense. Therefore high priority will be given to the further building of rural roads, coupled with measures o road maintenance to ensure continuing transport services and travel safety. The Royal Government will further its efforts in the rehabilitating and developing of railroads and promoting rail transport of bulk and heavy goods. Civil aviation will be further enhanced to ensure the significant contribution of civil aviation services to economic growth, especially in boosting tourism.

MINISTRY OF RURAL DEVELOPMENT

11. The objectives of the Ministry of Rural Development (MRD) are *t* alleviate poverty in rural Cambodia and to improve the quality of life of run people through coordination, cooperation and implementation of Integrate Rural Development programs and projects, particularly rural road rehabilitation, construction and maintenance, rural water supply, rural health care & sanitation, community & rural economy development and ethnic minority development. The MRD's role is as enabling institution. It seeks *t* improve access to rural infrastructure, particularly rural transportation and water supply, to improve access to rural finance and credit schemes, to promote sustainable natural resources management and stimulate rural community development through realizing the RGC's policies on governance, implementing through the decentralization and de-concentration of government functions.

12. The main elements of rural development strategies are to: (i) embrace both social and economic dimensions; (ii) pay special attention to disadvantage and vulnerable groups; (iii) be participatory, attempting to identify the most urgent felt needs of the population in order to reflect these in the balance of the program, and to involve the population directly in the activities of planning, improvement, development and maintenance; (iv) will be based on a diagnosis of the development problems and consideration of the development processes in each local area; and (v) require a substantial decentralization of organization and management of development efforts.

ACHIEVEMENT (1998-2003)

13. In response to the needs in rural areas, MRD is very active among keys priority ministries to implement the RGC's policies and programmes **to improve** the living conditions of the rural people nationwide, especially in rural remote areas. During the first and second mandate of the RGC, and depending of the types of funding sources, MRD is a key implementing agency and executing agency as well as coordinating and cooperating counterpart and working closely with NGOs and IOs as key development partners for a total of 27 major programmes and projects worth about US\$516 million. The sources of funding is divided into: 1/- Grants (34%) and 2/- Loans (66%). The application of funding is in the form of Technical Assistance (2%), Rural Infrastructure Rehabilitation (34.3%), Integrated Rural Development (31.6%) and in Food-Aid (32.1%). Note that others NGOs and IOs who didn't sign with MRD are excluded from this statistic. From 1998 to 2003, MRD have achieved:

14,230 km Rural Roads (5,230km with laterite capping), 1,867 (23,311 linear meters) Bridges, 5, 619 Culverts, 40,500 points wells, 679 km dikes, 452km canals, 1,848 reservoirs, 6,412 ponds, 1,414 classrooms, 16 rural markets, 30 million workdays employment have been generated from various rural infrastructure projects, and other activities in community development, training, capacities building, such as establishing Villages Development Committees and training members of VDC, food security and nutrition activities and private contractors development, rural credit schemes (rice bank, in-kind bank, village revolving credit and saving etc...)

14. **Accessibility Improved** - With the rehabilitation and construction of more than 14,000 km of roads, many social services providers (health, credit, skills training, literacy and extension services) have been reached the rural areas providing basic services needed for the remote areas, where previously was not accessible. The mobility of the rural people has been improved and the rural people have more opportunity to participate in their own development. The opportunity to participate in farming and non-farming activities has been encouraged. Followings are some of the findings that have been done before and after the road construction. The results of the impact socio-economic studies in the roads project areas proved that rural infrastructure did contribute to reduce poverty in rural areas.

15. **Rural Social Transformation⁷** - Road improvement changes in the rural status of the poorest. Percentage of people who get married is 50.8%, while unmarried are only 17.6%. The divorced ratio is declined from 25% in 2002 to 18% in 2004. The increase of married couple is a result from a better off on the individual household income. As for

the decline of divorced ratio is a result of good accessibility of road because those who work in growth centers or towns can easily return home during the day. The enrolment in primary and secondary education increased by almost 10% higher than 2002. This change is a result of both road access and improvement in school enrollment. Time to reach health care center reduces by 33% (from 1 hour to 20 mm.) resulting the decline the death rate by 15% in two years. Health care services can now accessible to remote areas providing vaccination, health preventive care especially to women and children. The rehabilitation of roads has created good opportunities for a greater social interaction among the community, development agencies, as well as various extension workers. It opens door for interaction between different groups of people to exchange ideas, and transfer technical know-how in the rural areas. The rehabilitation of roads has been an instrumental in increasing the mobility of the rural farmer and local employment. The average income for a rural family within the studied areas family received about US\$15 per month in 2004 as compared to about US\$5 in 2002. Two reasons, which fostered the increase are the improvement of agricultural production and off-farm employment. As for the savings of net income shows significant increase since the road completion. It varies upon the fertility of the areas and availability of local employment. The average family saving increases from 9% in 2002 to 35% in 2004. About 5% of people interviewed reported to have invested theirs savings with local business.

16. **Summary of Key Findings (January 2002)⁸** - *The following is an extract from a Socio-Economic Impact Assessment of rural roads in the project areas that was done in November 2001:*

- *Among 288 households interviewed, 129 household have changed or added their money earning works after completion of roads because it has been easier to transport their products to the market center. After roads construction, the survey recorded that the incomes were twice as high as the 4 year values prior to road construction.*
- *The total family income was higher during 2 .3 years after road construction than during the 4 years before construction.*
- *Households reporting to have savings increased between the period before and after road construction. Money saved by household member rose up to 30.2% for male and 25.73% for female. More than 50% of respondents said they previously used tile whole day to get to the market. But, currently, it is just 2 hours only, so that they have a lot more time to do other work.*
- *Local people are more aware of the activities of various NGOs and governmental agencies in their areas after the improvement of roads. Many stakeholders said that among those organizations existing in the area, health workers and governmental extension workers were now visiting their areas as roads communication had improved.*
- *The improvement of roads has been instrumental in increasing the mobility of the rural farmer amid labour force and the women, who were previously confined to their*

own locality. A large number of village people were able to move away from their villages in search of employment.

- Road improvement has been particularly helpful for encouraging female literacy. Previously, female students were afraid of being harassed on their journeys to and from school, whereas now they can easily walk without fear because the roads are always busy. They can also travel by taxi motorbikes to the school.
- Improvement of roads has opened doors for interaction between different groups of people to exchange ideas, and transfer technical advances in the rural areas.
- The improvement of roads has created opportunities for greater social interaction between beneficiaries (workers, farmers and their businessmen, or taxi car and motorbike drivers) and development agencies and health extension workers.
- Concerning the commune elections which will be held next year, farmers say they get instructions from National Election Committees; this opportunity had never been possible before road improvement because nobody would travel to remote areas.
- Exchanges of information from one village to another have been observed after the road has been rehabilitated.
- The farmers agreed that road improvement was of great assistance in mitigating the effects of natural disaster. The road has played an essential role as a dam or dike and culvert structures have been constructed to drain water in time and effectively.
- Many credit agencies from NGOs have been able to access areas due to the road improvement, which was not possible in the past. Government officials as well as members of parliament have been able to access areas by passing the roads during flood period.
- Farmers and businessmen were very much aware of the increasing price of land after the road improved. The price of agricultural land had nearly doubled during the last few years after the road improvement, particularly land by the road side.
- The number of students in schools has increased after rehabilitation of roads; the girls are going to high schools. Before they would only attend up to primary level (class 2 amid 3,).
- Meeting with the people, they agreed that their access to health services increased after the road improvement. Most of the beneficiaries claimed that women from their locality were visiting health centres more frequently.
- The number of thieves and kidnapping has decreased. Apparently, there are always more people on the roads so that thieves are always scared of being caught.
- Rehabilitation of road created employment opportunities for the unemployed local labourers. After road construction, the specific communities have created their own regulation and planning, especially groups of road maintenance, water users associations, health care groups. Those groups are mainly led by the chief of village or commune.
- Roads have opened up many opportunities for various new jobs. In many growth centres, or workshops for repairing motorcycles and bicycles, are being established, which have created employment opportunities for a large number of unemployed

local people.

PRIORITY ACTIONS PLAN

17. **Improving Rural Livelihoods** . The improvements in the areas of land, water, agriculture, forestry and fisheries and transport would be expected to contribute to improvements in other aspects of poverty, through better access to basic services. There are also important links between actions in other areas, including decentralization and rural livelihoods. Improved rural livelihoods depend also on reduced poverty in other dimensions. Poor health, poor education, lack of agriculture, infrastructure and low productivity lead to poverty. Primary health care is very crucial for rural people. MRD works to promote more health education in rural areas, in close cooperation with Ministry of Health.

18. **Rural Roads and Transport Improvements** Rural roads are the key priority for progress in rural areas. Rural road construction leads to increased agricultural production, either by increasing the land under cultivation or by intensifying existing land use to take advantage of expanded market opportunities. Rural roads also consolidate links between agricultural and nonagricultural activities in rural areas and between rural and urban areas. Access to education, health care and water is often a question of opening up rural areas by constructing feeder roads with connections to urban centres. The MRD uses Integrated Rural Accessibility Planning (IRAP) to identify the roads and rehabilitates and maintains roads using Labour Based Appropriate Technology (LBAT). LBAT has proved to be a technically viable and economically competitive option for rehabilitating physical infrastructures. LBAT is important as it emphasizes the use of local resources. Accordingly, LBAT significantly benefits the local population as it generates substantial employment and income, all of which are RGC priorities. Key features in this policy is the use of LBAT, decentralized implementation authority, purpose-designed for rural infrastructure works, people participatory approach, sound financial management and full involvement of the private sector. During the period of the project implementation more than 200 local contractors have been involved, 36 local contractors have been trained and about 1,000 civil works contracts have been awarded.

19. Operation and Maintenance of Rural Infrastructure. As of September 2004, 14,230 km of rural road had been rehabilitated, but only 5,230 **km of** rehabilitated road was capped with laterite. Out of 5,230 km of roads, only 1,400 km has been maintained regularly as routine and periodic. Therefore about 4,000 km of rural roads that have been rehabilitated do not have funds for maintenance. Maintenance defined as activities that keep the wearing course, shoulders, slopes, drainage facilities and all other structures and property within the road margins as near as possible to their as-constructed condition is a priority.

20. One significant achievement in road maintenance in Cambodia is with the Tertiary Road Improvement Programme and Flood Repair Programme⁹ (TRIP/FRP - KfW/MRD

/WFP). As of August 2004, the total length of roads were completed by TRIP/FRP is 1,412km. These roads are located in 80 communes of 22 districts in 6 provinces. TRIP adopted the lengths-person system, whereby routine maintenance is carried out manually by villagers (as lengths-person) selected from the community during the construction. The lengths-person is contracted to maintain a short section of road and is provided with a selection of hand tools and a regular stock of laterite for road repairs. The main cost for routine maintenance is the allowance paid to lengths-person approximately US\$13.5 1km/month. Other main costs are the payment of counterpart supervisory staff and the provision of laterite stocks along the roads. The TRIP maintenance scheme commenced in March 1997 and continuing until the completion of TRIP III (February 2005). Currently, there are 833 villagers maintaining 909 km of completed roads TRIP/FRP. Another 318km were handed over to provincial authorities and through community support for maintenance. A Pilot Scheme for routine maintenance by commune councils was started in September 2003 for 3 communes and is now expanded to 2 more communes (total 185km). In this approach, an agreement between PDRD¹⁰ and commune councils was signed that technical training, hand tools and laterite are provided by TRIP and PDRD to each communes and TRIP's maintenance fund is provided to commune councils for their own maintenance and supervision. Commune council will select their own road maintenance group and make payment at their discretion as agreed upon.

21. Road Maintenance Management System (RMMS) Since 1996 until September 2004, MRD in cooperation with other partners have completed the construction and rehabilitation of well over 5,000 kilometers of rural roads with laterite surfacing. Under current MRD's Rural Infrastructure and Rural Development programs through various loans (i.e. ADB, World Bank) and grants (i.e. KfW, WFP) as well as from Government's Priority Action Programs (PAP), it is expected by 2005, MRD will be able to achieve another 2,000 km and will be added to the rural road inventory to a total of about 7,000km. Roads are being rehabilitated through various projects and now require maintenance to preserve the investment made by the government.

22. It is essential that a Road maintenance Management System (RMMS) is established at both MRD and provincial levels to ensure that the investment in the rural road network is preserved. It will also allow funds for maintenance to be obtained based on actual needs and for all expenditures to be accounted for as being used to maintain the rural road network. The RMMS will ensure that funds are used on identified maintenance activities, in order to keep all rehabilitated roads in a trafficable condition. It will also give MRD and MEF¹¹ the reassurance that funds are actually needed by the recipients and will be fully accounted for on completion of the maintenance works. The Rural Roads Inventory and Maintenance System (RRIMS) would be the main tool for allowing them to integrate and manage all rural roads activities nationwide. The Rural Road Management and Maintenance System (RMMS) provide a system of compiling the road inventory and condition and to facilitate a predictive rather than reactive maintenance

regime thus providing an enhanced standard of maintenance. An inventory and data collection on the condition of more than 200Km of roads in each province have been surveyed including culverts and bridges and stored in the PDRD's database. The pilot scheme for rural road maintenance structures have been established in 8 provinces (6 provinces of RIIP¹² and 2 EFRP¹³s provinces), with the formation of the District and Commune Road Maintenance Committees. A total of 200 km of rural roads in eight provinces have been maintained as pilot to test the functionality of the RMMS and the effectiveness of the road maintenance structures, mechanism and procedures that have been established.

23. Clean Drinking Water and Environmental Sanitation . Despite abundant groundwater resources, access to potable water and environmental sanitation is limited in Cambodia. MRD is implementing a rural water supply development plan that will provide clean water to an estimated 3.8 million rural people by the end of 2005. The target for the year 2005 is to increase the clean water supply from 29 percent (2.8 million people) to 40 percent (3.8 million people) of the rural population. This would make it possible for almost 1 million more rural people to access clean water.

24. Expansion of small scale irrigation . About 75.6% of the total cultivated area is fully dependent on rainwater, but given the temporal variability of rainfall patterns crop production is often threatened by drought, so that the production of supplementary crops is not possible. Although Cambodia has attained food self-sufficiency, food security remains a goal to be achieved. Irrigation plays a key role in the efforts to achieve this goal, which is part of the overall national goal of poverty reduction through socio-economic development. It is estimate to be only 19.5% of the cultivated area in Cambodia is recognized as received irrigation:

- 12.5% wet season supplementary irrigation for rained lowland rice,
- 5.8% supplementary irrigation for dry season flood recession rice, and
- 1.2% irrigation of dry season lowland rice.

25. These irrigated areas (19.5%) currently produce approximately 31.4% of the total rice production of Cambodia. Rehabilitating and constructing small-scale irrigation systems, as part of integrated rural development, is one of the MRD responsibilities. To help implement these projects, the local community is required to bear some costs. Project operation and maintenance by local communities is encouraged and promoted by the MRD. To ensure effective allocation and use of irrigation water, operation and maintenance should be managed by villagers through water user groups and associations.

26. Promoting Agriculture Development . Majority of Cambodia population (85 percent) is living in rural areas and depending mostly on agriculture for their livelihoods. Their livelihood has mainly revolved around agriculture and natural resources use and management. Over the period 1993-001, agriculture was the major sector of the

economy, which on the average hared 46.4 percent in the total of GDP. During that period agricultural crops hared 45 percent, animal production 14 percent, fisheries 30 percent and)forestry 10 percent in the agricultural GDP.

27. The MRD programme to facilitate agricultural development consists of the development plan promoting integrated household food security programmes. This includes provision of technical advice, training and other assistance to farmers to improve agricultural practices and cut production costs and alternative crops with increased yield, downstream processing of farm products, animal husbandry, and small-scale aquaculture and creating alternative energy sources. In summary, income-generating activities will be actively promoted among rural households. Food Security in rural areas is a mandate of TRD. As such the MRD will conduct pilot activities to encourage communities) establish their own self-managed, private cooperative for food security. Village Development Committees would manage these cooperatives, which will establish rice banks, family garden demonstration plots, promote appropriate technologies and cooperative shops, as well as set up markets. These activities Till complement those of MAFF in promoting agricultural production. The pilots will be run in the villages selected on the basis of poverty-oriented criteria.

Ngy Chanphal
Under Secretary of State
Ministry of Rural Development 18 October 2004