

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

**TRANSPORT AND COMMUNICATION
INTERVENTIONS IN
THE ALLEVIATION OF POVERTY**



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INTRODUCTION

The Economic and Social Commission for Asia and the Pacific (ESCAP) recognized the need for a review of projects/programmes in the region in which transport could tangibly contribute to alleviating poverty and improving the quality of life of people living in rural areas. With a view to documenting the experiences of such projects/programmes, the ESCAP secretariat undertook a review of five case studies in countries of the region where interventions in the transport sector contributed substantially or played a catalytic role in the alleviation of poverty, and have helped to improve the quality of life in disadvantaged and/or remote communities.

The following five case studies were selected for the review: (i) the Rural Roads and Markets Improvement and Maintenance Project in Bangladesh; (ii) the Least-developed Village Development Grant Scheme in Indonesia; (iii) the Dhading Development Project and Gorkha Development Project in Nepal; (iv) the Aga Khan Rural Support Programme in Pakistan; and (v) the Medium-term Philippine Development Plan in the Philippines.

The studies comprised intensive desk research to identify and describe potential rural projects which focused on the provision of transport as a central element in alleviating poverty and upgrading the quality of life of disadvantaged groups. The desk study was supplemented by missions to the project sites to obtain first-hand information from the implementing agencies and project beneficiaries.

An international consultant was engaged to undertake field missions to the study areas in the five countries. In addition, five national consultants were recruited, one in each country, who accompanied the international consultant during the field visits to project sites, carried out the evaluation exercise, and undertook follow-up activities as required. Four of them, with the exception of the national consultant in the Philippines, also prepared

country case studies, the findings of which were consolidated by the international consultant for the present publication.

The main purpose of this publication is to identify, catalogue and describe processes which have been tried and tested, and could be replicated and/or adapted in other countries of the ESCAP region. It documents the original objectives of the projects, describes the process of implementation, including modalities, and highlights the achievements and impact of the projects/programmes, with a view to providing a basis for more efficient and cost-effective planning of transport interventions aimed at alleviating poverty in the developing countries of the region.

The ESCAP secretariat wishes to express its gratitude to the United Nations Development Programme for providing funds for this project. The secretariat also acknowledges the valuable contributions of the five national consultants: Mr. A.K. Farhad Ahmed, Bangladesh; Mr. Ir. Heru Sutomo, Indonesia; Mr. Kedar Basnet, Nepal; Mr. Shakil Ghori, Pakistan; and Ms. Victoria A. Corpuz, the Philippines towards the preparation of this publication.

ABBREVIATIONS

AKRSP	Aga Khan Rural Support Program
BAPPENAS	National Development Planning Agency
BDC	Barangay Development Council
BPS	Central Bureau of Statistics
Bupati	Head of Kabupaten
Camat	Head of Kecamatan
CDP	Community Development Program
DPUK	Kabupaten Department of Public Works
FRA	Feeder Road Type A
FRB	Feeder Road Type B
GDP	Gorkha Development Project
GoB	Government of Bangladesh
Gol	Government of Indonesia
HMG	His Majesty 's Government
IATCTP Planning	Inter-Agency Technical Committee on Transport Planning
IDT behind)	Inpres Desa Tertinggal (Programme for villages left behind)
INPRES grants.	Presidential Instruction , including a class of Gol grants.
Kabupaten	District (level II)
Kecamatan	Kabupaten administrative subdistrict
Kepala Desa	Head of Village and of LKMD
Kepres	Presidential Decree
LDC	Local development Council
LGC	Local Government Code
LGD	Local Government Division (of MLGRD&C)
LGED	Local Government Engineering Department
LGU	Local Government Unit
LKMD	Village community resilience council
MER	Monitoring, evaluation and research
MLGRD&C	Ministry of Local Government, Rural Development and Co-opeatives
MPW	Ministry of Public Works
NEDA	National Economic and Development Authority
NMT	Non-Motorized Transport
NWFP	Northwest Frontier Province
OECF	Overseas Economic Cooperation Fund, Japan
PODES	Village survey by BPS
POKMAS	Community Self groups

PPI	Productive Physical Infrastructure
RDP	Rural Development Project
Repelita	Five-year Development Plan
RHD	Roads and Highways Department
RR1	Rural Roads Type 1
RR2	Rural Roads Type 2
RRMIMP-1	Rural Road Markets Improvement and Maintenance Project
RRMIMP-2	Second Rural Road Markets Improvement and Maintenance Project 1
VDC	Village Development Committee
VIP	Village Infrastructure Project
VO	Village Organization
WO	Women's organization

BACKGROUND OF THE COUNTRIES

A. SOCIO-ECONOMIC OVERVIEW

This review covers case studies in five countries of the region which represent a wide range of situations. The main socio-economic indicators of the selected countries are given in tables 1 to 5. It can be seen that three of these five countries are very highly populated. These are Bangladesh, Indonesia and Pakistan; each of them with a population exceeding 100 million. The fourth country Nepal has only 20 million population but even there the pressure on land is quite high since only 16 per cent of the total land area can be used for cultivation. With the increasing population, the cultivated land availability has declined from 0.6 ha per capita in 1954 to 0.24 ha per capita in 1990 which is in fact far less than in some other more populated countries.

The GDP per capita is among the lowest in two of these countries, i.e. Bangladesh and Nepal. It is much higher in the Philippines and Indonesia but inequity in income distribution is quite high even in these countries, and there is still a large percentage of the rural population living close to the national poverty line in both countries.

Majority of population in these countries still live in rural areas, and are dependent on agricultural activities and small/cottage industries for their livelihoods. The role of rural economy therefore remains vital in all these countries and rural development constitutes an important part of national development.

The rural areas have generally lagged behind in terms of economic progress and social amenities. Low productivity, lack of social services, unemployment and large-scale underemployment still constitute the outstanding features in these villages. Therefore, there is a great need to raise agricultural

productivity or to create other sources of income in the rural areas.

Table 1. Bangladesh: socio-economic indicators

POPULATION	population (1994)	rural population	density (h/sq.km)
	118 millions	82 per cent	819
LAND AREA	land area (sq.km)	arable land (per cent)	forest land (per cent)
	144,000	65.6	13.2
GROSS NATIONAL PRODUCT	US\$ billions 26.2	US\$ 220 per capita	avg.ann. growth (85-94): 2 per cent
	agriculture	industry	services
	30 per cent	18 per cent	52 per cent
HUMAN DEVELOPMENT SITUATION	UNDP human development index (average:	food production per capita index (1979-81 =100)	life expectancy at birth (years)
	0.368	97	56.4

Source: United Nations Development Report, 1997.

Table 2. Indonesia: socio-economic indicators

POPULATION	population	rural population	density (h/sq.km)
	194.5	66 per cent	100
LAND AREA	land area (sq.km)	arable land (per cent)	forest land (per cent)
	1,950,000	9.9	58.7
GROSS NATIONAL PRODUCT	US\$ billions 174.6	US\$880 per capita	avg. ann. growth (85-94): 6 per cent
	agriculture	industry	services
	17 per cent	41 per cent	42 per cent
HUMAN DEVELOPMENT SITUATION	UNDP human development index (average:	food production per capita index (1979-81 =100)	life expectancy at birth (years)
	0.668	145	63

Source: United Nations Development Report, 1997.

Table 3. Nepal: socio-economic indicators

POPULATION	population	rural population	density (h/sq.km)
	20.9	87 per cent	148
LAND AREA	land area (sq.km)	arable land (per cent)	forest land (per cent)
	141,000	16.5	40.8
GROSS NATIONAL PRODUCT	US\$ billions 4.0	US\$200 per capita	avg.ann. growth (85-94): 2.3 per cent
	agriculture	industry	services
	44 per cent	12 per cent	44 per cent
HUMAN DEVELOPMENT SITUATION	UNDP human development index (average:	food production per capita index (1979-81 =100)	life expectancy at birth (years)
	0.347	114	55

Source: United Nations Development Report, 1997.

Table 4. Pakistan: socio-economic indicators

POPULATION	population (1994)	rural population	density (h/sq.km)
	126.3 million	66 per cent	159
LAND AREA	land area (sq.km)	arable land (per cent)	forest land (per cent)
	796,000	26.1	4.4
GROSS NATIONAL PRODUCT (1994)	US\$52 billions	US\$430 per capita	avg ann. growth (85-94): 1.3 per cent
	agriculture	industry	services
	25 per cent	25 per cent	50 per cent
HUMAN DEVELOPMENT SITUATION	UNDP human development index (average:	food production per capita index (1979-81 =100)	life expectancy at birth (years)
	0.445	118	62

Source: United Nations Development Report, 1997.

Table 5. Philippines: socio-economic indicators

POPULATION	population	rural population	density (h/sq.km)
	66.4	47 per cent	221
LAND AREA	land area (sq.km)	arable land (per cent)	forest land (per cent)
	300,000	18.4	45.3
GROSS NATIONAL PRODUCT	US\$ billions 64.2	US\$950 per capita	avg ann. growth (85-94): 1.7 per cent
	agriculture	industry	services
	22 per cent	33 per cent	45 per cent
HUMAN DEVELOPMENT SITUATION	UNDP human development index (average:	food production per capita index (1979-81 =100)	life expectancy at birth (years)
	0.672	88	67

Source: United Nations Development Report, 1997.

B. ROAD TRANSPORT NETWORK

The composition of the road network in selected countries is shown in table 6:

Table 6. Road network in the selected countries

Country	Total length of road network*	Road length by type		
		National and provincial road	Rural road	
			Km	Percentage total network
Bangladesh	120,800	5,209	115,591	97 per cent
Indonesia	342,473	79,263	263,210	77 per cent
Nepal	9,309	4,510	4,799	51 per cent
Pakistan	130,000	54,843	65,957	51 per cent
Philippines	162,325	53,000	85,200	52 per cent

Note: City and municipal roads and roads within villages not included.

In Bangladesh, the trunk and provincial network of roads is less than 5 per cent of the total network. For every km of major road there are about 20 km of rural roads. At the other extreme are Pakistan and the Philippines where there are about 1.2 km and 1.6 km of rural roads respectively for every km of major road.

The total road network densities as well as the rural road densities by area and population are shown in table 7. It may however be noted that the high density of rural roads in Bangladesh, as compared to that of Pakistan or the Philippines, does not necessarily mean better facilities to travel, which also depends on the condition of the road network.

Table 7. Rural road densities in the selected countries

Country	Rural road density		Rural road density	
	By total land area (km per km ²)	By total population (km per 1,000 people)	By agricultural land (km per km ²)	By rural population (km per 1,000 people)
Bangladesh	0.84	1.02	1.22	1.19
Indonesia	0.17	1.76	1.36	2.05
Nepal	0.07	0.44	0.21	0.26
Pakistan	0.16	1.03	0.36	0.79
Philippines	0.54	2.44	1.54	2.73

RURAL DEVELOPMENT STRATEGY

All the five countries stress the importance of rural development and have designed strategies with different emphasis given to the role of rural infrastructure. This chapter reviews the rural development strategies set up by each of the five countries, and briefly outlines their rural infrastructure programmes.

A. BANGLADESH

1. Rural development strategy

Programmes and institutions for the rural development of Bangladesh started under the Comilla model in the 1960s as the first comprehensive planning approach undertaken for the rural development of Bangladesh.

One of the four components of the model, the Rural Works Programme (RWP) aimed primarily at providing employment to the rural unemployed and underemployed and to facilitate agriculture development through physical infrastructure improvement (like roads, bridges, culverts, irrigation and drainage channels) for evacuation of agricultural surplus by integration of fragmented markets in rural areas.

Given the shortcomings of that approach - due to its emphasis on agricultural development which failed to focus on the alleviation of poverty of the rural masses, the Bangladesh Planning Commission outlined, in 1984, a new Strategy for Rural Development

The strategy conceived the need for improvement in the life of rural people by developing the economic (through infrastructure, production, employment and income) and social sectors (through education, health, sanitation, family planning

etc.).

The strategy emphasizes the need for inclusion of the following three components in the design of rural development projects: (a) physical infrastructure including roads, storage and markets; (b) irrigated agriculture, minor drainage and flood control works; and (c) production and employment programmes for the rural poor.

Lastly, in 1995, the Planning Commission of Bangladesh, stressed in Perspective Development Plan for the Country (1995-2010) four goals to meet the developmental problems of Bangladesh: (a) Poverty alleviation; (b) Productive employment generation; (c) Income growth; and (d) Human resource development.

To achieve the above goals, two approaches were considered; the first one relied on direct interventions in areas such as human resources development, education and health etc.; the second one privileged interventions through the different sectors of the economy.

The Perspective Plan recognized that the development of agriculture and physical infrastructure such as roads, markets and storage etc. could not have sufficient impact on poverty alleviation. Therefore, it emphasized the need for the adoption of a specific institutional and target group approach to rural development.

2. Rural infrastructure programme

As a predominantly rural country, infrastructure plays a vital role in supporting economic growth in Bangladesh. Some of its most important components include transport and electrification.

Table 8 extracted from the Annual Development Plan (1997-1998) gives an indication of the magnitude of the various

rural infrastructure programmes.

Table 8. Bangladesh: allocation of funds for rural infrastructure

Sub-sector	Responsible agency	Funds allocated (in million)	
		Taka	US\$
Rural road network (feeder road type B (FRB) and Rural Roads type 1 and 2 (RR1 and RR2), rural markets	Local Government Engineering Department (LGED)	7,933 ^a	184 ^a
Water supply and sanitation (rural)	Department of Public Health Engineering (DPHE)	1,297	30
Rural electrification	Rural Electrification Board (REB)	5,456	127
Health (rural)	Directorate of Health	2,912	68
Education (rural)	Ministry of Education	6,797	158
TOTAL		24,375	567

^a As well as from LGED-funded projects, projects funded by other ministries but executed by LGED are included.

The rural roads sector received the largest share of the rural infrastructure credit (32 per cent). It highlights the great emphasis placed by the Government on rural transport infrastructure for the development of rural areas.

Two other elements of infrastructure, vital to the

development and performance of rural areas, are irrigation and the availability of convenient and reliable short and long term storage for perishable crops.

In Bangladesh, the Government has given a high priority to the rehabilitation of the rural road network making the programme of Rural Development Projects(RDP) certainly the most extensive in Asia. At the same time the Government has managed to finance with its own national budget and the support of international lending agencies as well as bilateral donors what is required to set up an effective and integrated rural road network.

The rural transport infrastructure programme in Bangladesh can be characterized by the following main features:

(a) A "two-tier model" is in place for management of roads with the responsibility shared between two different agencies: (i) Roads and Highways Department (RHD) under the Roads and Railways Division of the Ministry of Communications responsible for the national and arterial roads; and, (ii) Local Government Engineering Department (LGED) under Local Government Division (LGD) of the Ministry of Local Government Rural Development and Cooperatives (MLGRD&C) responsible for feeder and rural roads except Feeder Road Type - A.

(b) An innovative strategy for rural development introduced in 1984, the Growth Centre Approach, recommended the construction of all-weather roads connecting the Growth Centres with the arterial road network and development of Growth Centre Markets in order to establish an improved and sustainable rural transport and trading infrastructure.

(c) The Government now recognizes the importance of rehabilitation and maintenance of rural transport infrastructure, and for the fiscal year (FY) 1996-1997, a substantial fraction (6 per cent) of the Annual Development Programme (ADP) was allocated to LGED for the rural road and growth centre

programme: Taka 6.9 billion (US\$156 million) out of the total revised ADP of Taka 117 billion (US\$ 2.7 billion). The importance given to rural infrastructure programmes under the responsibility of LGED¹ is also evident from the following table 9 which shows that LGED got 38 per cent of the combined budgets of RHD and LGED for the FY 1997-1998.

Table 9. Bangladesh: comparative budget allocation for 1997-1998

	Roads and highways department (RHD)		Local government engineering department (LGED)	
	Million taka	US\$ million ²	Million taka	US\$ million ²
TOTAL	10,870.5	253	6,770.8	157
Network covered	National highways : 2,539 km Regional highways: 2,670 km Feeder road type A : 10,008 km Total : 15,217 km		Feeder road type B: 15,524 km Rural roads class 1: 41,782 km Rural roads class 2: 48,327 km Total : 105,653 km	

² Currency of Bangladesh is taka : US\$1 00 = 43 Takas (July 1997).

Since 1998 Bangladesh has implemented 15 different rural development projects (RDP), some of these spread over the entire country, and were completed by LGED with financial assistance from aid-agencies. LGED is also currently carrying out five additional national programmes which are the fully funded

¹ The recognition of the importance of maintaining the rural road network can be seen by the resources allocated for the Fy 1996-97 for routine and periodic maintenance which was Taka 1,300 million. It nearly matched the request submitted by LGED for Taka 1,451 million (\$ 36 million).

by the Government, focusing also on rural infrastructure development.

According to the World Bank, the total cost of all on-going projects is about US\$1.3 billion equivalent, of which the infrastructure component (roads and markets and related technical assistance) are about US\$1.1 billion equivalent.

A joint review of the 1984 strategy for rural development was undertaken by the International Development Agency (IDA) and the Government prior to the formulation of a new Rural Infrastructure Strategy. The review found that in terms of physical progress, the projects collectively achieved only about 30 per cent of national targets for 1995 fixed 10 years ago.² The reasons given were: (i) the ambitious nature of targets which were not matched by the resource availability; and (ii) the slow start of many projects due to the learning process in building up institutional and contractor capacities for efficient implementation.³

After reviewing resource requirements with resource availability, the study set up a "realistic scenario" for the next 10-year horizon (1995-2005) with the following physical targets: (i) 80 per cent of existing and additional FRBs to be upgraded to full bituminous-surfaced standard, including bridging all gaps, replacing all damaged structures, and repairing all poor structures; (ii) 10 per cent of RR1 roads to be upgraded to WBM standard; (iii) 60 per cent of gaps on RR1 and RR2 roads to be bridged, 60 per cent of damaged structures replaced and 60 per cent of poor structures to be repaired; (iv) 50 per cent of

² In 1984, the targets for physical infrastructure development for the next decade (1985-95) were as follows: improvement of 6,440 kms of FRBs, construction of 152,500 meters of bridges/culverts and improvement of 1,400 Growth Centre (GC) Markets.

³ See Bangladesh Rural Infrastructure Strategy Study, The World Bank, April 1996.

unimproved GC markets to be improved; and (v) All jetties serving GCs to be improved.

B. INDONESIA

1. Rural development strategy

In the mid-1960s, the scope of development problems in Indonesia was so vast and easy to define that almost all policy decisions were best made at the national level. For example, in the key fields of education and health there was a clear need for basic services in every village throughout the archipelago. Having made great progress in meeting basic needs the Government of Indonesia now seeks to ensure that even the poorest citizens can benefit from development gains.

The country's development approach put a strong concern on integration, promotion of the spirit of working together (*gotong royong*) and full use of the national resources. The Indonesian concept of development includes four elements: (a) Process: to change the way of thinking from traditional to a more modern living; (b) Method to promote local ideas and methods to make use of local resources; (c) Programme: to put priority on the improvement of standard of living - materially as well as spiritually through education, health, agriculture, small scale industry, cooperative, environment and village infrastructure improvement; (d) Movement: to promote and channel the benefits of development down to the villages.

In order to prevent large disparities between regions and within the population, eight ways to ensure equality have been identified: (a) meeting the basic needs especially: food, clothing and housing; (b) access to education and health services; (c) distribution of revenue or surplus; (d) access to working opportunities; (e) access to opportunities for setting up business; (f) participation in the development process especially for the young generation and women; (g) spreading geographically the fruit of development; (h) to obtain justice for all.

In that context, the Government of Indonesia has set up a comprehensive programme of assistance to poor rural areas. This programme of assistance includes funds channelled through (a) the regular budget, the DIP programmes which provide regular resources to provinces and districts to enable them to undertake their own development programmes; (b) funds channelled through direct interventions, the INPRES from Instruksi President or Presidential Instructions which are grants made to lower levels of government by the national level¹.

It is in that context that an Instruction of the President of the Republic of Indonesia regarding the "Intensification of Efforts to Alleviate Poverty", was promulgated in 1993 (Presidential Instruction 5/1993)

2. Rural infrastructure programme

The Presidential Instruction 5/1993 considers that: (a) to promote efforts to alleviate poverty in less-developed communities in a sustainable manner it is necessary to integrate sectoral and regional programmes; (b) to mobilize community forces and funds it is necessary to mount a special programme; (c) the alleviation of poverty would involve various government agencies and communities and would demand careful coordination; concluded that (d) that in view of the above points it is deemed necessary to issue a Presidential Instruction on the Intensification of Efforts to Alleviate Poverty hereinafter referred to as the Programme Inpres Desa Tertinggal (IDT) or the Presidential Instruction Programme for Less-developed Villages.

The IDT approach constitutes a strategy for the implementation of comprehensive and integrated efforts for the alleviation of poverty by "encouraging a structural change from within the community. The approach is programme-based and

¹ An Inpres (President Instruction) is from time to time introduced which direct ministries and local authorities to speed up the implementation of a national objective

multi-faceted rather than project oriented" (Gunawan Sumodiningrat).

Since its creation in 1994, the term Programme Inpres Desa Tertinggal has been used to describe the entire village-level poverty alleviation effort⁵. One of its main components is the Village Infrastructure Programme (VIP) which addresses the lack of infrastructure as one of the major constraints in the development of villages.

Three principles are guiding the process of developing rural infrastructure: (a) Balanced role between the government and the village: Government provides grants, village communities take part in the implementation. Apart from that they may have their own projects while the government will offer assistance and guidelines. (b) Dynamic and sustainable: Programmes should be sustainable from one objective to the next one to eventually reach the long term goal; (c) Comprehensive, integrated and coordinated: The projects should touch all aspects of life and must be integrated amongst areas or sectors and between government programmes and community initiatives. Coordination is required in the implementation of projects.

⁵ There are at least eight related INPRES (President Instruction) related to rural development (1) Village Development Support, (2) Kabupaten Development Support, (3) Province Development Support, (4) Elementary School Support; (5) Health School Support; (6) Reforestation; (7) Market; (8) Road Improvement

C. NEPAL

1. Rural development strategy

The Eighth Plan (1992-1997) identified a host of measures for fighting against poverty in Nepal. Among the main themes were poverty alleviation, agricultural intensification and diversification, development of rural infrastructure, employment generation and human resource development, public administration reform, and better monitoring and evaluation of planned projects. The Eighth Plan emphasized that rural development programmes should focus on improving the income and quality of life of disadvantaged groups; development of backward areas, creation of community infrastructure and decentralization of authority to local government by maximizing people's participation. To that end, the Eighth Plan included a number of programmes: Infrastructure development through the poor, employment and skill development, social communication, control of population growth, technology development, labour export and food security through the expansion of food for work programme, integration of hills and terai markets, regional food storage, etc.

Despite the proliferation in their numbers, none of these "integrated rural development projects" had been able to seriously address the problems of the rural poor. Similarly, little of the elaborate poverty alleviation planning done by the National Planning Commission had actually been translated into action.

Rural development has remained the focus of the Ninth Plan (1997-2002). One of its priority objectives is to raise the living conditions of the rural population by combating poverty, disease and illiteracy. In that context, the main orientations of the Plan are: (a) improving the socio-economic conditions of people living in rural areas in order to achieve self-reliance; (b) maximizing people's participation in rural development works in order to create a base for sustainable development; (c) developing basic infrastructure in rural areas; and (d) reducing

regional and ecological imbalances.

2. Rural infrastructure programme

The Eighth Plan stressed the urgent need for improved rural infrastructure, in particular in the two priority sectors of rural electrification and rural roads.

At the end of the Eighth Plan, hydro-electricity accounted for 1 per cent of the country's energy consumption, petroleum and coal for 8 per cent, fuelwood for 68 per cent, agricultural residuals for 15 per cent and animal dung for 8 per cent. It is clear that if the rural sector is to play a leading role in the development of Nepal, then there must be a large increase in power-generating capacity in Nepal. Unfortunately, Nepal is in the midst of an acute power shortage, with no immediate end in sight. Presently, only the main towns and their urban peripheral areas are connected to the electricity supply. In that context and in order to better address the needs of the rural areas, the Nepal Electricity Authority (NEA) has recently set up a separate Directorate for Rural Electrification with the Small Hydropower Department under this Directorate. A promising area of rural electrification which has the support of the government is private micro-hydropower installations.

One of the objectives of the Eighth Plan was to connect all districts with motorable roads (22 districts still have no road access) and highlighted the urgent need for improved rural infrastructure, especially accessibility to isolated parts of the country. Roads, in fact, have already received considerable emphasis in Nepal. Significant commitment and efforts at the local level have led to impressive results in improving rural access with allocations of about Nrs 45 million (US\$80,000) per district per annum. Most of these achievements have shown a real level of commitment at the local level and recognition of the economic effects of rural roads. These efforts could have produced better results if the available resources had been utilized more efficiently.

In Nepal, the Government aims at developing an extensive programme of rural roads. However, the estimated requirements are far beyond the capacity of the country. The question arises as to what extent Nepal can finance the required programme and what are the major changes in the institutional structure which have to take place in order to build such a large programme of roads including rural roads.

The construction of roads has been one of the major development concerns of the HMGN Government. Between 1956 and 1993 the road network expanded from 624 kilometres to 9,534 kilometres, the average being 240 kilometres per year. The rate was somewhat over 350 kilometres per year in the 1980's.

At the same time some evidences showed that roads did not have as much economic impact as was expected. Further 75 per cent of the network was in poor to fair conditions because of poor maintenance, according to an assessment made by the World Bank in 1993. In fact, large sections of roads are virtually not usable.

In addition to poor maintenance, the concern of different development partners is that the roads are too expensive when compared with the expected benefits. The rate of return on road transport investment in Nepal is significantly lower than in other developing countries. The reason is not only that the construction and maintenance costs of roads are exceptionally high because of the difficult terrain, especially in the hills, but also because the growth of traffic is much less than expected.

(a) High costs of construction

The high costs of the construction is certainly the case for the roads constructed through contractors and jointly financed by donor countries, international lending agencies and HMGN. It is for this reason that an alternative solution had been pushed forth by the government i.e. the construction of roads through local governments with people's participation.

Construction and maintenance costs could be significantly reduced by involving local beneficiaries in the contribution of voluntarily or partially paid labour and using simple technology that is easily understood by the local people. Moreover, local people by participating in the rehabilitation of flood and landslide damaged rural infrastructure, could feel an ownership towards the infrastructure and be willing to take responsibility for its maintenance.

The results of some of the projects constructed with local participation, however, were disappointing. Although such roads were cheaper, they had been mostly built without adequate planning, finance, technical support and supervision, not to mention of an ignorance of the environmental aspects.

(b) Low growth of traffic

One key reason to the low volume of traffic on the national road network is the fact that the surrounding grid of feeder agricultural roads is in most cases almost non-existent. The experts who have prepared the "Nepal Agriculture Perspective Plan" (NAPP) in 1995⁶, consider that the construction of a grid of connecting agricultural roads around all existing trunk and district-level roads is essential to agricultural growth and, indeed, to an increase of the volume of traffic on these trunk roads which will help raise their economic rates of return. The NAPP has estimated that Nepal needs about 6,300 km of additional rural roads which need to be constructed in the first ten years of the plan; first to complete the grid of agricultural roads around the existing trunk and district road network and then to provide the same network of agricultural roads around the 22 new district roads still to be constructed.

⁶ "Nepal Agriculture Perspective Plan" prepared for National Planning Commission and Asian Development Bank by Agricultural Projects Services, Kathmandu, and John Mellor Associates, Washington, June 1995

That goal which would mean providing roads at more than twice the rate of the 1980's, is obviously exceedingly difficult to reach without major changes in the institutional structure for building agricultural roads. However, it is the single most urgent task in the NAPP strategy because of the importance of rural roads. The NAPP has also estimated the cost at 12.2 billion Rupees or US\$251 million. This cost does not include the cost of linking the 22 districts that do not have district roads to headquarters, an important national objective which will require an additional 1,800 km of roads at an estimated cost of Rs 13.2 billion or US\$265 million (Eighth Plan). The estimates also do not include the budget and administrative provision which must be made to bring the trunk and district road system up to the standard to meet the needs created by the agricultural road network. For only the construction of the agricultural roads, not to mention the maintenance costs, the average annual investment is estimated at Rs 822 million which is equal to nearly two thirds of the annual national budget for roads during the period 1988-1991.

D. PAKISTAN

1. Rural development strategy

Rural development in Pakistan has not kept pace with the rapid progress and change that has characterized the advancement of urban areas. This lag is both material and qualitative and is visible in general poverty, unemployment, lack of health, educational and social amenities as well as communication facilities⁷.

The various programmes of rural development that have been undertaken specifically to address these issues have had a history of mixed results that goes back to the Community Development Programme in the fifties, the Rural Works

⁷ Economic Survey 1993-1994 Government of Pakistan Finance Division

Programme in the sixties, the Integrated Rural Development programme, the Peoples Works Programme and the Local Government System of the seventies.

In 1985, the Five Point Programme was launched and in 1989 the Peoples Works Programme; in 1991 the Tameer-e-Watan Programme was started. These efforts have represented the various approaches that have evolved over time to accelerate the pace of rural development.

2. Rural infrastructure programme

The main features of the Government's agenda for rural development include the provision of rural infrastructure, health and education facilities, village electrification, water supply and sanitation, and farm-to-market roads.

Village electrification is one of the core areas of Government's priorities. Significant improvements have been made in this regard, with 48,320 electrified villages in the country, which is 99 per cent of the total of 49,000 villages.

Water Supply and Sanitation: An ongoing Strategic Investment Plan (SIP) to provide rural areas with clean drinking water and sanitation is financed by World Bank, CIDA, other donor agencies and the Government. The Project is for eight years (1992-93 to 1999-2000) and executed through the Public Health Engineering Department (85 per cent of the budget) and the Rural Development Department (15 per cent of the budget). For the drinking water component, Rs.19 billion had been allocated for five years (up to June 1998). With completion of the programme, about 70.50 per cent of rural population will have access to clean drinking water and proper sanitation services will be available to about 31.51 per cent.

Rural transport infrastructure: An on-going Farm-to-Market Roads Programme to improve mobility in rural areas is financed by the Asian Development Bank, USAID and the Government of

Japan. The project has three phases and the last one is expected to be completed by June 1998. At the end of the project, about 5,000 kms of farm-to-market roads will have been constructed in 32 districts for a total cost of Rs.12 billion, in addition to testing improved techniques/work methods for rural road works and maintenance.

E. PHILIPPINES

1. Rural development strategy

Two main documents constitute the backbone of the rural development strategy in the Philippines :

(a) The Philippines 2000 which envisions an improved quality of life for all the Filipinos through a balanced and sustainable economic growth with the empowerment of people. The basic policy behind the vision is that the benefits of development should be for the many and not just the few. In its quest for a better life for the disadvantaged sectors of society, this administration recognizes that economic growth without social equity is unacceptable; and social justice without an enlargement of the economic pie is unsustainable³.

(b) The Medium-Term Philippine Development Plan (MTPDP) for 1993-1998 which outlines the basis for all development activities to be undertaken by the Government during the corresponding planning period provides the integrating mechanism for all socio-economic reforms and human development initiatives that the Government is pursuing. The objective of the MTPDP is to transform a still largely agricultural economy into a newly industrialized one and to reduce poverty from 39.2 per cent in 1991 to 30 per cent by 1998.

The lack of distributive social justice or inequity is the core

³ see Major Policy Directives in the Implementation of the Social Reform Agenda Integrating Framework for anti-poverty initiatives

reason for rural poverty in the Philippines. Growth is one answer to poverty alleviation, but studies project that if the country were able to sustain a five per cent growth rate, it would still take 10 years for the average poor to cross the poverty line if no efforts were made to redistribute incomes and resources.

The reduction of inequity is the other solution. This refers to the inequitable access to basic services, productive assets and income-earning opportunities. The greater inequity is observed between rural and urban areas. The need is to find a balance between the delivery of basic services in relation to the need to improve infrastructure facilities so households can directly access basic services and livelihood opportunities.

In the MTPDP the strategy for poverty alleviation programme gives priority to the localization of social services and infrastructure in depressed areas. Lack of access to land or low farm productivity are compounded by poor transportation and infrastructure facilities and poor access to markets.

2. Rural infrastructure programme

It has been the declared policy and strategy of the Government that basic transport infrastructure will be identified and provided to ensure the integration of depressed communities into the mainstream of economic development.

In the Infrastructure Programme of the Government, quite a number of transport projects like roads, ports and airports involving billions of pesos are targeted for implementation over the 1993-1998 plan period. Their trickle down effects may contribute towards attaining human development and poverty alleviation goals, but may not adequately address the accessibility and the mobility requirements of the majority of the Filipino especially the most needy sectors of society.

Assessing the challenges for infrastructure support during the period 1996-1998, the MTPDP stresses the point that as the

economy expands towards the countryside more pressure for infrastructure support is expected. At the same time , it recognizes that a promising area for poverty alleviation is infrastructure development.

The next three years require an even faster pace of infrastructure development on three fronts : (a) providing for the primary needs of the population such as reliable and adequate water supply, shelter, health facilities and transportation; (b) providing transport support facilities for the productive sectors to meet the requirements of agriculture, fishing, regional agro-industrial centres and tourism (c) ensuring access to depressed communities in order to allow their geographical and economic integration. In particular, it highlights that better rural roads make it easier for the poor to gain access to markets of goods and services and to source of productive inputs, as well as to social services and alternative employment.

In the Philippines it was found that the density of rural roads have a substantial impact on farm output and use of inputs such as fertilizer and tractors. Yet, 40 per cent of provincial roads and 50 per cent of barangays roads are in such a poor condition that they cannot be maintained any longer and must be rebuilt or abandoned. It is estimated that 50 per cent of the barangays lack all weather roads, significantly delaying hauling in the rainy season.

In view of these and in order to reinforce the role of infrastructure in addressing the population 's basic needs particularly of the poor, National Economic and Development Authority (NEDA) in cooperation with Inter-Agency Technical Committee on Transport Planning (IATCTP) has launched a study to establish a planning framework that will guide in the identification, prioritization and selection of basic transport infrastructure and services and recommend strategies, mechanisms, sources of financing and institutional arrangements for their implementation.

REVIEW OF THE FIVE CASE STUDIES

The present chapter reviews the five case studies selected by ESCAP covering the objectives, the socio-economic background, the key features and the outcomes.

Two of these programmes which have been implemented by NGOs include the AKRSP Productive Physical Infrastructure (PPI) in Pakistan and the DDP/GDP Local Road Programme (LRP) in Nepal. Two other case studies were part of national programmes which were implemented under the responsibility and control of the central government - the Rural Roads and Markets Improvement and Maintenance project (RRMIMP) in Bangladesh, and local government - The Least -developed Village Development Grant Scheme (*Impres Desa Tertinggal - IDT*) in Indonesia respectively. The fifth case was the Medium Term Development Strategy in the Philippines which lists key measurable targets included in the rural infrastructure sector but does not design special projects to achieve the desired goals.

A. BANGLADESH

1. The Rural Roads and Markets Improvements and Maintenance Project (RRMIMP)

The RRMIMP originated from a government request to have donor funding for a rural roads and markets programme in the north-western part of Bangladesh.

(a) Project area

The project covered eight districts in the north-western part of Bangladesh (Rajshahi, Natore, Nawabganj, Noagoan, Pabna, Serajganj, Bogra and Joypurhat). The project area had a population of 13.2 million (mid-1985) and an average density of 730 persons per sq. km. About 70 per cent of all farm holding were less than one hectare. It remained economically and socially

disadvantaged in particular because of its isolation due to absence of roads. Agriculture and associated trading and processing activities constituted the major part of the rural economy in the project area.

The region was the main producer of rice with a productivity of 2 tonnes/ha. Sugarcane and fruits (mangoes and bananas) were the next two main sources of income for the region. Production of fish from inland waters was also an important activity. The annual catch of fish was estimated at 40,000 tones. In addition, there were many cottages industries. One of the most significant in terms of rural marketing and trading was handloom weaving. According to rough estimates, there were about 150,000 counts of handlooms in the area. It meant that handlooms weaving of cloth was a particularly important rural income generating activity.

(b) Project objectives

The RRMIMP approved by IDA in 1998, started in FY1988-89. Designed as an experimental project in many respects, with an implementation period of 7 years, it was completed in FY1996-97. The overall development objective of the RRMIMP was to promote rural development through the reconstruction, upgrading, and maintenance of Feeder Road type B (FRBs), Growth Centre (GC) markets and construction of structures (culverts, bridges) on rural roads.

The main components of the project were :

(i) improvement, maintenance and upgrading of 500 kms. of FRBs;

(ii) construction of 3,700 running meters of structures on rural roads (culverts, small bridges);

(iii) improvement of infrastructure in 65 GCs.

(c) Key features

The key features of the RRMIMP were the rehabilitation of the rural road infrastructure in conjunction with the improvement of physical facilities at selected important rural markets designated as Growth Centres (GC). The aim was to stimulate the development of the rural economy by enhancing the efficient operations of the rural transport and trading network.

The roads selected for rehabilitation were exclusively the Feeder Roads type B (FRBs) also called "growth-centre-connecting roads". By definition, they were to connect selected growth centres in sub-districts (thana) to thana headquarters or to the nearest road maintained by the Roads and Highways Department (RHD). The FRB network in the RRMIMP was estimated at a total length of 1,307 km..

The GC markets constituted the nodes of the trading network and were to act as the focal points and catalyst for rural development. In the project area, 280 markets (known as hats) had been identified as potential GCs : one GC market per 46,500 persons and per 63 sq.km land area. More than half of these GCs⁹ were located on FRBs.

The Local Government Engineering Department (LGED) which belongs of the Ministry of Local Government, Rural Development and Co-operatives (MLGRD and C) was in charge of implementing the project. Civil work was executed by local contractors who were awarded contracts of small size (2-3 km with contract values not exceeding US\$ 100,000) and provided with LGED equipment on rent.

⁹158 Growth Centres are located on a FRB, 57 on a FRA and 64 on a main road

(d) Outcome

The RRMIMP has fully achieved all its physical and most of its institutional objectives, within the original cost estimates. The project investments have also made significant economic impact in removing rural mobility and marketing constraints, and shown high economic returns from completed components. The project has been very successful in establishing good quality standards for road construction with local materials and expertise through trial programmes, which are now being replicated nationally, and also resulting in the enhancement of capacities of LGED and local consultants and contractors¹⁰.

The RRMIMP costed about US\$98 million¹¹ and was jointly financed by the Government of Bangladesh (13.5 per cent), the World Bank through the IDA (63.4 per cent), Switzerland through the Swiss Agency for Development and Cooperation (SDC) (8.6 per cent) and the Federal Republic of Germany through KfW (14.5 per cent).

(e) Lessons from the experience

A recent review of the RRMIMP was undertaken jointly by IDA and LGED. Its main conclusions and recommendations were to: (a) put more emphasis on user/community participation in planning, implementation and monitoring and in funding; (b) promote coordination in the use of complementary modes of

¹⁰ Bangladesh - Rural Infrastructure Strategy Study (The World Bank April 1996).

¹¹ This sum has covered also project support activities like consultancy services for design and supervision and monitoring, project staff, vehicles and equipment and office and laboratory facilities in the project area, the construction of new LGED Headquarters building, and the rehabilitation of some 650 kms. of flood-damaged roads and structures on those roads

transportation with reference to river jetties to better integrate inland water transport and road transport; (c) continue with training and equipment support to small contractors and at the same time to increase contract sizes to enhance contractors output and efficiency (compared to average 2-3 km contract now); (d) take early action on land acquisition with suitable compensation procedures; (e) greater emphasis on field-level training and implementation of maintenance programmes; (f) overhaul rural market management and leasing systems to improve efficiency and increase revenue; (g) strengthen the financial status of local bodies (Union Parishads) in ensuring sustainability of infrastructure; (h) promote intervention not only in transport infrastructure but also in transport services, especially for the improvement of Non-motorized Transport (NMT), in order to derive full benefit of the investment in rural transport infrastructure; (i) promote investment in road structures in particular on rural roads RR1 and RR2; (j) initiate the bidding process for appointment of design and supervision consultants before the projects start to avoid delays in their implementation.

A follow-up project - RRMIMP 2 has now been designed which incorporates the main conclusions of the review of RRMIMP. The same eight districts are covered¹² to pursue similar objectives to help increase rural employment and incomes and reduce rural poverty by establishing an improved, sustainable

¹²In addition The project area of RRMIMP-2 covers 14 districts. Apart from the eight Districts of RRMIMP-1, RRMIMP-2 will cover six additional districts of Greater Dhaka (Manikganj, Munshiganj, Narayanganj, Gazipur, Narshigdi and Dhaka)

rural transport and trading infrastructure¹³. Three new components have been introduced in RRMIMP 2 which give a new dimension to the project. These are:

(i) Construction of drainage structure on rural roads (RR): in order to remove gaps which force closure of roads in rainy season and block smooth flow of traffic in fair season, the project will construct about 6,000 culverts and small bridges (31,600 linear meters) mainly on existing RR1 and RR2.

(ii) Rehabilitation/construction of river jetties (ghats): for the improvement of inland water transport (IWT), which through country boats remains most important for the movement of rural people and goods. Most of the jetties selected for improvement serve GC markets, and their improvement will contribute to the integration of the water/road transport and trading network.

¹³The main project components of RRMIMP-2 are (i) improvement of 575 kms of FRBs and construction of bridges and culverts on other FRBs not selected for full improvement under the project, (ii) implementation of a planned routine and periodic maintenance system for the LGED road network in the project area covering all FRBs and important RR1s, (iii) construction of about 6,000 culverts and small bridges (about 31,600 linear meters) on existing rural roads (mainly RR1 and RR2s) nationwide together with ancillary earthworks to make about 10,500 kms of rural roads passable year round, (iv) improvement of 136 Growth Centres of which 14 are expected to be Union Parishad (UP), (v) rehabilitation/construction of 41 priority river jetties, or river ghats in the project area to improve landing/unloading facilities for country boats, (vi) pilot programme to improve safety and efficiency of Non-Motorized Transport - particularly rickshaws and rickshaw vans - which are extensively used in the country for movement of goods and passengers in rural areas, (vii) institutional and human resource development for improvement of technical and managerial capacity of LGED, local Government agencies, local construction industries (viii) implementation support including technical assistance for design, supervision, monitoring and evaluation of the project.

(iii) Pilot programme to improve Non-Motorized Transport (NMT): for the improvement of NMT (rickshaw-vans, cycle-rickshaws, bicycles and bullock carts) which play an important role in rural transport system in Bangladesh, the pilot component will focus on the development and introduction of improvements in their design, by making trial runs through user-groups to further improve designs through their feed back; and on undertaking measures to stimulate the provision of credit for the purchase of improved vehicles.

RRMIMP 2 started in 1997 has an implementation period of five years. The project is expected to be completed by the end of 2001 at a cost of US\$192 million with joint financing from the Government of Bangladesh (23 per cent), the IDA (69 per cent) and the Swiss Agency for Development and Cooperation (8 per cent).

B. INDONESIA

1. The Least-developed Village Development Grant Scheme

Since its creation in 1994, the term "least-developed village development grant scheme" or *Inpres Desa Tertinggal* (IDT) has been used to describe the entire village-level poverty alleviation programme. It is a national programme being implemented under the direct supervision of the President.

(a) Project area

Indonesia, the world's largest archipelago nation, extends some 5,000 km across the equator and comprises several thousands islands; the more important of these are Java, Sumatra, Kalimantan and Sulawesi. The distribution of population and economic activities is very uneven. High population densities, smallholder agriculture and a relatively well developed market economy are found on the islands of Java, Bali and Lombok and in some parts of Sumatra and Sulawesi.

The exact number of people living in true absolute poverty is unknown but is thought to be small in comparison with those living on or near the official poverty line. Whilst those in absolute poverty must be given immediate assistance, the latter group also requires serious attention. The group includes the subsistence farmers and the people that make a meager living from the informal sector in urban areas and basically live on the verge of economic disaster. Figures provided by the Central Bureau of Statistics highlight the scope of the problem. Nearly 26 million people were considered living below the poverty line⁴¹ in 1993 with 8.8 million being urban poor (34 per cent) and 17 million being rural poor (66 per cent).

On the island of Java, 60 per cent of the country's population live on 6 per cent of the total land area with population density over 800 people/km². The island accounts for 70 per cent of the irrigated agriculture and 75 per cent of the output from industrial sector, but remains the home of one half of the poor people in Indonesia; including 6.3 million urban poor (43 per cent) and 8.2 million rural poor (57 per cent).

Sumatra, the home of 20 per cent population of Indonesia accounts for 5 million total and 3.7 million rural poor. The total number of poor people living outside Java and Sumatra amount to 6.2 million with 5 million rural poor. Although they are smaller in number, the degree of their poverty in terms of general standard of life is worst.

Altogether there are about 67,500 villages in Indonesia. In 1996, 28,376 of these were classified by the Central Bureau of Statistics as left behind villages (42 per cent) making them eligible for an IDT grant. The number of left behind villages for Java were 6,329 (26 per cent) and for Sumatra the number of left

⁴¹ The poverty line is defined as the number of rupiah per month per capita. A distinction is made between urban and rural poor which varies with in each project and by province. In 1993 the range was between 24,000 rps - 40,000 rps for urban poor and 15,000 - 29,000 for the rural poor

behind villages was 8,999 (44 per cent). The number of IDT villages outside Java and Sumatra is thus higher despite fewer people living below poverty line in those areas.

(b) Project objectives

The main thrust of the IDT are the villages which in the past have been somehow "left behind" in the national development. The objective is to reduce the disparities between villages by targeting the poorest people in the villages and reducing disparities between individuals. In order to raise their standard of living, the IDT programme provides an initial working capital for a group of people¹⁵ together with guidance and technical assistance to identify activities within the village which can open up new undertakings and productive job opportunities.

Since the lack of infrastructure was found as a major constraint to the development of the villages, therefore, the government decided that additional grants should be allocated to finance rural infrastructure which directly supported the development of activities and the improvement of welfare as well as the enhancement of the mobility of people in the less-developed villages. The infrastructure identified included construction of rural roads, bridges, wharfs, and clean water facilities.

The new programme, designed to support substantial infrastructure development projects in the less developed villages, was termed as the 3PDT programme (*Proyek Peninkkam Prasarana Desa Tertinggal*) or Village Infrastructure Programme (VIP). Its objectives were to, (a) improve access to market village

¹⁵ The term IDT refers to a revolving grant given to a group of poor families to promote income improvement through economic activities and collaboration amongst group members.

products and to reduce isolation of villages; (b) improve the health conditions of poor villagers and to provide them with working opportunities; (c) increase management capability of institutions and promote public participation; (d) improve village community skills for the planning, execution and maintenance of infrastructure; (e) enhance the assets of the villagers.

(c) The Village Infrastructure Programme (VIP): key features

(i) Villages categorized as "left behind" were selected on the basis of a socio-economic survey that used three basic indicators and no less than 27 variables including village facilities and potentials (10 variables), housing and the environment (8 variables) and population characteristics (9 variables).

(ii) Under the 3 PDT programme, the allocation was Rp 120 million per village or cluster of villages (US\$40,000). The minimum population to be served was 500.

(iii) The selection of infrastructure was left completely as the responsibility of the villagers

(iv) The villagers were assisted in the design and calculations by "Field Engineers" recruited from the private sector; one field engineer for every five villages¹⁶.

(v) A simple grant agreement was signed by the representatives of the village and those from the district public works and that became the basis for construction.

(vi) A fixed amount of funding was channeled directly to

¹⁶ The Field Engineers' role was to advise the kepala desa and to assist the pokmas at each stage of the construction of the infrastructure. He was appointed in a kecamatan to assist one or more projects. Apart from giving assistance in the planning, design and executing the project, the engineer also assisted in the use of the funds in order to maximize the VIP allocation, especially when other local resources were available.

the villages, once design and agreements were signed, using a simple funding process: the village opened an account into which funds were transferred.

(vii) A first installment of about US\$10,000 was sent directly to the village account. The account was replenished based on actual work progress and expenditures.

(viii) The villagers were given complete responsibility for the spending of the funds with assistance provided by the field engineers.

(ix) Construction was undertaken by villagers themselves for an incentive wage, using local materials wherever possible so that as much money as possible stayed in the village.

(d) Outcome

The implementation of the VIP began in April 1995 with an initial funding from OECF and the World Bank. The World Bank had funded the VIP in 11 provinces in Java and Sumatera while OECF in 21 provinces outside Java and Bali. Starting FY 1997/98, the Government of Indonesia is to finance the programme in 26 provinces, except Jakarta.

Under the IBRD and OECF projects, over 7,500 villages will have been assisted between 1995 and 1998. For 1997/1998, the 3PDT financed by the government will be implemented in 2,099 villages in 145 regencies (kabupatens) within 26 provinces. The objective is to target about 28, 300 left behind villages during the current Five Year Development Plan (Repelita VII).

Both IBRD and OECF projects put emphasis on village decentralization. In the IBRD project, the village development advisory boards (Lembaga Ketahanan Masyarakat Desa or LKMD) directly received the funds for the infrastructure project, ordered, controlled and paid for the work. In the OECF funded projects, careful provision of technical assistance and support

from civil work contractors, ensured that the projects were of good standard as well as appropriate to the needs of the villages.

(e) Lessons from experience

At the start of the project many officials from different levels of government were convinced that the village councils would not be able to manage the subproject activities. However, during the first two years all the 4,677 villages covered were able to complete fully their subprojects. Thousands of kilometres of roads, hundred of bridges, and thousands of small water supply and sanitation projects were completed for an average cost much lower than if contracted. Technical quality which had been a concern in the first year, also improved gradually to the point that it compared favourably with contracted works¹

For the Indonesian officials the VIP has proven that the communities are capable of constructing their own infrastructure if they receive clear guidelines and some technical assistance.

¹ "Rural Infrastructure development through people participation in Indonesia" paper presented by Gunawan Sumodiningrat at the Asia Pacific Regional workshop on the UNDP Human Development Report , Hanoi June 1997

C. NEPAL

1. The Dhading Development Project (DDP) and the Gorkha Development Project (GDP)

The Dhading Development Project (DDP) was initiated in 1983 and implemented from 1988 with the funding of the German Agency for Technical cooperation (GTZ). The Gorkha Development Project (GDP) was initiated in 1990 and implemented from 1993 with some modifications in the original approach.

(a) Project area

Dhading and Gorkha are two adjoining districts in the central mountainous region west of Kathmandu. They together encompass some of the most remote and rugged regions of Nepal bordering Tibet. Dhading and Gorkha are two economically backward and ethnically heterogeneous districts. The combined population of the two districts in 1991 was 530,000 with a growth rate of 2.1 per cent per annum.

The economy of the region was agricultural involving more than 91 per cent of the economically active population, only 15.5 per cent land of the region was under cultivation and the per capita land holding size was around 0.16 ha.. About 45 per cent households in Gorkha district and 62 per cent households in Dhading district suffered from food deficit between 5 to 8 months. Most of the small and marginal farmers, lower caste groups (Damai, Kami, Sarki) and tribals fell below poverty level defined by the National Planning Commission (NPC). Non-agricultural sources of income were limited and therefore, most of the able-bodied men migrated for different durations in search of jobs primarily to India.

Infrastructure development was inadequate. While the district headquarters were connected by motorable roads with the Prithiwi Highway, most of the transportation inside the districts

took place by walking; it took more than eight days of trekking before one could reach the northern settlements. Rural electrification was limited to the district headquarters and their surrounding areas. Only 18 per cent population of Dhading district and 32 per cent population of Gorkha district benefitted from drinking water supply.

(b) Project objectives

The DDP and GDP projects, executed within the framework of the Swabalamban Programme, aimed at strengthening the process of decentralized and participatory planning¹⁸. The overall objective of the project was to enable the majority of the population in each district to manage their human and natural resources more effectively in an ecologically, economically, socially and institutionally sustainable manner.

The two projects were planned, designed and implemented for the targeted poor households that constituted the overwhelming majority of the district's population. Local government, line agencies and para-statal organizations were associated as cooperating partners. The activities carried out by DDP and GDP included the financing of physical infrastructure through two different schemes: (a) The Local Road Programme (LRP) designed for the construction of local roads suitable for the Nepal mid-hills; and (b) an Incentive Grant component to finance small infrastructure.

¹⁸ The DDP and GDP projects are currently implemented by an NGO, Rural Self Reliance Development Centre (RSDC), which took over the programme in 1993 from another NGO.

(i) The Local Road Programme (LRP): key features¹⁹

Local access roads

The roads built under the LRP were single lane (4.5m with by-pass every 200m), earthen, fair weather roads open to traffic for only 8-9 months per year, and closed during the monsoon months (approximately mid-June to mid- October). Designed for a low traffic volume of up to 75 vehicles per day, they were suitable for light vehicles, tractors, minitrucks and minibuses with a total weight not exceeding 8 tonnes.

Use of green road technology

In order to respect the fragile mountain-eco-system, great attention was given to minimizing damage to the environment. The alignments were carefully selected; the construction of the roads followed a "cut and fill" method to minimize loss of land and top soil erosion; and a step-wise approach which consisted of widening the road from a trail over a four-year period²⁰ while the road surface was left to be naturally compacted through rains during the monsoon period. Emphasis was also placed on the use of bio-engineering methods (trees and bushes along the alignment) to stabilize road tracks, protect slopes and control potential erosion sites. Structural works consisted mainly of dry stone walls, bolder and soil filled gabions. No bulldozers or heavy machinery were used and no blasting was conducted.

¹⁹See Impact assessment of the local road programme implemented on Dhading Besi-Salyantar-Siktar Road and Dhimdunga-Lamidanda Road, Dhading Development Project (HMG/GTZ), submitted by Impact Monitoring Unit (IMU), Kathmandu, December 1994.

²⁰In the first year, a one meter trail was constructed; in the second and third years the road construction; and in the third and fourth years the road was allowed to stabilize.

Overall responsibility of the local people

The local people were organized in self-help groups called Income Generating Groups (IGGs), which were directly associated to the Local Road Programme (LRP). They generated local resources, primarily labour, as community infrastructure assets. They also acted as regular groups to promote savings by collecting and putting monthly cash savings in a Self Reliance Fund (Swabalamban) which were administered by collective decisions of the group. The workers who worked on the GTZ funded roads put 20 percent of their wages into the group savings to finance future investment.

The construction was carried out entirely by the local people, using local tools and materials. A high proportion of the road construction cost was paid as wages to local labourers²¹.

Labour intensive construction method

In order to utilize the under-employed rural labour force, the road construction period was made to coincide with the agricultural slack period from October to May. Since labourers came from an area within two hours of walking distance, they could bring their own food and did not require accommodation. Labourers were organized into groups of about 15 persons, each with a locally selected *Naike* (group leader).

Outcome

In the Dhading district, two roads had been constructed: Dhading Besi-Salyantar-Siktar (42km) and Bhimdhunga-Lamidanda (22.5km). The construction had started in April 1988

²¹ Almost all the money remained with the villagers. The local people made 100 to 200 rupees a day which was invested in buying land, etc. The system of wage payment includes a provision to deposit a part of individual wage earnings into the group savings.

and were nearly completed by May 1997. The cost of construction per km had been estimated at an average of Nepal rupees (NRs) 950,000²¹ or US\$19,000 per km²². The District Development Committee of Dhading originally gave much lower estimates at about NRs 400,000 per km but these estimates did not include structural works (walls, check-dams), vegetative measures (bio-engineering), provision of stone pavement in road sections with slippery soil, and more generally lacked measures on environmental concern.

Lessons from the experience

Under the Gorkha Development project (GDP) the construction of Benighat-Arughat-Arkhet rural road started in December 1995 and 24 kms of track has been completed. In order to enhance the construction in LRP project in Gorkha: (i) Road construction work was started simultaneously from many sections of the road alignment. (ii) Labourers were paid on the basis of measurement; (iii) GDP/GTZ provided construction materials, equipments and technical services directly to the project sites; and (iv) Users groups were involved in the administration of the road construction and maintenance works to reduce the risk of political interventions.

(ii) The Incentive Grant component

The Incentive Grant component known as "need response fund" in the terminology of the Swabalamban Programme, provided the IGGs (which are committed to undertake small infrastructure) with a maximum allocation of one million rupees

²²This does not include overhead and management cost for DDP and the technical and managerial input from the donor (see Impact Assessment of the local road programme implemented on Dhading...IMU/GTZ)

²¹ This is about one third of the standard cost of the Department of Roads (DOR).

(US\$20,000 per district), generally to cover the cash cost of imported materials like pipes and cement. Although the level of assistance under the scheme was small, it has assisted, over the last six years, several communities in financing a number of community projects. In the districts of Dhading and Gorkha, first priority was the construction or rehabilitation of drinking water schemes followed by construction or extension or rehabilitation of school buildings. The third priority was suspended bridges and trails followed by irrigation schemes. According to a survey carried out in 1995, 67 per cent of the sample households had participated in various community activities contributing an average of twelve working days per household.

The Gorkha Development Project (GDP) went a step ahead whereby the Incentive Grant component supported the construction of a 27 km long trail in Chumchet VDC, at the request of the local people. The construction was to be completed in less than 3 years while it was estimated to take 5 years. The cost was also estimated around 6.1 million rupees. So far, 2.0 million rupees have been spent and only 0.8 million rupees will be needed to successfully complete the project²⁴.

D. PAKISTAN

1. The Aga Khan Rural Support Programme

The Aga Khan Rural Support Programme (AKRSP) is located in the Northern Areas of Pakistan and cover the three northernmost districts of Pakistan : Gilgit and Baltistan of the Northern Areas and Chitral District in the North West Frontier Province.

²⁴ see Impact assessment of the swabalamban Programme in Dhading and Gorkha Districts. Impact Monitoring Unit (IMU/GTZ)

(a) Project area

AKRSP estimates the population at about 1.1 million living in 1150 villages spread over 75,000 sq. km. The socio-economic situation is poor as compared with national standards. The region is, however, slowly changing from a subsistence-oriented to a commercial economy. Land use is slowly becoming less subsistence-oriented as substitutes are provided by improved accessibility and trade.

In parts of the region, cropping patterns are gradually switching, away from labour-intensive staples, into products with high pay off to labour. Farm technologies in the region have improved with the introduction of tractors and machinery. Bio-technical innovations have centred on the introduction of new varieties of wheat, vegetable and fruit and the introduction of seed potato production in some high altitude villages. Where there are nearby markets, the composition of livestock is changing to favour the more sedentary stall-fed cattle at the expense of pasturing goats and sheep.

Studies conducted by AKRSP indicate that there are expanding opportunities for non-farm income which are diversifying the farmers' sources of income away from agriculture. In some cases, evidence suggests that the non-farm income may exceed 50 per cent of households' cash income.

Out-migration in search of employment or education has become a major trend, spurred by the increasing inability of the existing resource base and farming systems to provide an adequate livelihood for a rapidly growing population. This has increased seasonal labour shortages in the region.

Trade has increased considerably with the opening of new markets, but the regional trade balance is highly imbalanced : a wide range of consumer goods are imported in the region from down-country with only a few agricultural products being exported from the region to metropolitan Pakistan. An increasing trade with

China is an important aspect of the emerging commercial trends in the region's economy.

(b) Project Objective

AKRSP started its work in December 1982, with a mandate to act as a small, flexible catalyst that would organize local communities, enhance their capacity for controlling their future, facilitate interaction with development agencies, and promote integration with outside markets on favourable terms. The programme initially focused its operations in Gilgit region, expanding to Chitral in 1985, Baltistan in 1986 and Astore in 1993.

AKRSP in its fourteen years of operation, continues to be an effective instrument to improve community productivity and family welfare in Pakistan's Northern Areas and Chitral. Improvements have resulted from the programme's interventions in productive investments, in production-support investments, such as access roads, in training, and in financial and technical services²².

The basic objective of the AKRSP has not changed over the years i.e. to increase the capacity of local people to become involved in their own development, so that they can raise their income and welfare, through promotion of village organizations.

(c) AKRSP : key features

The key components in AKRSP's approach are:

(i) The establishment of village-level institutions (known as village and women's organizations, VOs and WOs) to

²² The Aga Khan Rural Support Programme. A third evaluation - a World Bank Operations Evaluation Study, 1996 Executive summary p.1)

manage the development process²⁶;

(ii) The introduction of an obligatory individual saving scheme to mobilize capital and the use of credit from village organizations to assist small farmers;

(iii) The training of local people in a range of organizational and technical skills to support them in their self-help activities and

(iv) The use of a productive physical infrastructure (PPI) project with a grant element from AKRSP to support economic development and provide the initial incentive for community organization.

(d) The Productive Physical Infrastructure (PPI): key features

The Productive Physical Infrastructures (PPI) were at the centre of AKRSP social organization strategy. One of the main objectives of financing a productive physical infrastructure project was to convince the beneficiary community that by working together they could better articulate their needs and receive benefits through cooperation in investments and services²⁷. Project selection and design were conducted with the full participation of the village organization members, not by offering

²⁶ At the end of 1996, there were a total of 3,045 VOs in the programme area (against 1834 VOs at the end of 1994), with a household membership of 116,181. This represents a coverage of more than 80 percent of total rural household. There was also a total of 980 women's organizations (against 768 at the end of 1994) with a membership of 32,887. These are however approximate figures, because even if the number of village organizations actually withdrawing from the programme is very rare, a number of these VOs have become inactive.

²⁷ The Aga Khan Rural support Programme - a third Evaluation - a World Bank Evaluation Study, July 1996

them a set of options but by allowing them to choose freely²⁸.

Criteria for approving PPI proposals were as follows:

- (i) The project had to be productive;
- (ii) At least 70 per cent of the VO households would benefit;
- (iii) Villages could execute the project without outside contractors and heavy equipment;
- (iv) Projects were to take no more than two years to complete;
- (v) Mostly local materials were required;
- (vi) The project could (and would) be maintained by the village organizations; and
- (vii) The project was free of disputes within the village or with other villages.

Implementation of the PPIs was the responsibility of the VOs. AKRSP technical staff, especially engineers, were made available as needed to provide technical input, but day-to-day organization and execution of the construction work was carried out entirely by the VOs under the village managers.

Grants were provided to the VOs mainly to finance all or part of the labour input, but explosives, compressors, packages of hand tools and construction materials were also purchased as needed through AKRSP. These grants from AKRSP were paid out to VOs in installments to pay village labour on a daily wage basis. In addition, the villagers also contributed free labour when tasks needed large quantity of work. Use of the wages once received (whether consumed or saved) was decided by the VOs. In many VOs, grant funds for wages were saved as a whole or in

²⁸ AKRSP's strategy allows for only one PPI grant per village organization. Village organization members are warned that once completed, maintenance of their PPI infrastructure is their responsibility.

part and added to the VO's equity capital account.

(e) Outcome

At the end of 1996, 1,717 productive physical infrastructure projects had been launched and 1,332 were completed²⁹. The most popular type of project were gravity irrigation channels which were fed by springs, streams, from glacial melt, and river offtake. Some 772 gravity irrigation channels were initiated constituting 45 per cent of all PPIs. The link roads, foot bridges, and pony tracks which play a major role in developing and exploiting markets for the products of the area, form the second most popular category of infrastructure. They represent 387 projects or 23 per cent of all PPIs.

Other large categories included protective works (172 projects), mainly gabions for flood protection, boundary walls and storage reservoirs. The demand for village electrification was also high resulting in a growing number of micro-hydel in the region. Since 1992, 67 micro-hydels have been financed.

Grants totalling Rs. 370 million (about US\$9 million) have been made for PPIs. The average programme PPI grant was Rs 215,000 (US\$5,400).

Community contribution varied between 27 per cent to 93 per cent of the total project cost depending on the nature of the project. Community contribution was low in projects where large quantities of non-local inputs were required and high in those projects for which local inputs were high.

In addition to the grant-assisted PPIs, AKRSP projects included a large number of physical infrastructure projects self-

²⁹ On visiting a range of PPIs and in particular when traveling on some of these roads, the overriding impression was one of admiration for what can be achieved in difficult terrain by the villagers at low cost with only some material and technical assistance from AKRSP.

financed by the village organizations. Although on average they were much smaller than grant-aided infrastructure projects, self-financed physical infrastructure are of great interest, in the sense that they indicated that the capacity of VOs was not totally dependent on outside sources of funding.

(f) Lessons from experience : the future of the PPI programme

Given the successful central role that PPIs have played in the early formation of village organizations, and the potential they have to generate favourable economic and social benefits, there has been within AKRSP a growing debate as to whether to revive the physical infrastructure project programme with another round. There is certainly great demand and interest from villagers.

AKRSP is working on a five-year programme of PPIs funded by a combination of credit, i.e. AKRSP grants and villagers' own resources. A portfolio of new projects with a cost of Rs 727 million (about US\$ 18 million) has been identified to be implemented over the next five years.

The infrastructure development programme of AKRSP is also taking a new orientation with the funding of Medium Infrastructure Projects (MIPs) which are intended to meet the needs of several villages, particularly multi-village irrigation schemes and link road projects. The importance of link roads in the marketing of produce has been acknowledged by farmers and is likely to grow if the emphasis is put on a restricted number of more marketable products (especially high-value fruits) and on training of farmers for their production, grading, processing, and marketing. However, being comparatively bigger than PPIs and because of bringing together a number of VOs together, MIPs place greater demands on technical ability in design, cost estimation and implementation which should not be underestimated.

E. PHILIPPINES

1. The Medium Term Development Strategy

The Medium-Term Philippine Development Plan (MTPDP) for 1993-1998 outlined the basis for all development activities to be undertaken by the government during the corresponding planning period. It provided "the integrating mechanism for all socio-economic reforms and human development initiatives that the government was pursuing".

The objective of the MTPDP was to transform a still largely agricultural economy into a newly industrialized one and to reduce poverty from 39.2 per cent in 1991 to 30 per cent by 1998. Later an Updated Plan covering 1996-1998 was produced to serve as a comprehensive guide to the economic and social policy reforms.

(a) Project area

The Philippines has a total land area of approximately 30 million hectares. Of the country's total land, only 18 per cent is classified as agricultural, yet, the agricultural sector plays a vital role in the economy, contributing about one fourth of the total gross domestic product.

The Updated Medium-Term Philippine Development Plan 1996-1998 reported that the growing confidence in the economy had led to improved performance of all production sectors except agriculture and noted at the same time that the challenges in poverty alleviation, equity promotion and the generation of productive employment remained substantial. More than a third of all families totalling 4.6 million remained poor. By far the largest number of these poor families (more than 85 per cent) lived in the rural areas and most of them were engaged in agriculture, animal husbandry and forestry.

An analysis made in 1995 by the Presidential Commission

to Fight Poverty indicated that the single most important cause of poverty was the economy's failure to grow rapidly and in a sustained manner. Between 1985-1994 the economy had grown by 1.7 per cent on the average which had been a direct cause of the unemployment and low productivity in both urban and rural areas. The economy had since grown at higher rates (+ 6 per cent), but the Philippine's experience showed that stronger growth has reduced absolute poverty albeit slightly without much affect on equity.

Rural poverty was largely rooted in labour absorption problems. Within rural areas poverty was concentrated in agricultural occupations (farming, fishing and forestry), especially among the self employed. It was unlikely that sufficient employment would be created in urban areas. It was therefore imperative in the long term demand for labour in agriculture be boosted and the growth linkages with non-agricultural sector enhanced.

The Updated Medium-Term Philippines Development Plan (MTPDP) confirmed the role of The Social Reform Agenda (SRA) as a package of interventions which the government intended to pursue to ensure the welfare and early integration of disadvantaged groups into the political and economic mainstream and the attainment of social justice and equity³⁰, because it was envisaged that economic development without social justice and equity was untenable .

(b) Programme objectives

The fundamental challenge for the Philippines was generating productive employment for its growing labour force. The emphasis on employment generation was an attempt to confront problems of labour absorption (growing unemployment, high underemployment, and declining labour productivity),

³⁰ see The Social Reform Agenda Policy Directives

particularly in rural areas where the bulk of the poor lived.

As it was believed that the labour-based public work schemes could play a dual role of asset creation and employment generation³¹, the government proposed to consolidate all the ongoing works under the umbrella programme Kabuhayan 2000 which focused on the use of labour-intensive methods to build rural infrastructure.

The MTPDP requested the line departments to identify infrastructure projects for which the use of labour-based methods was economically and technically feasible. These projects were to be located in provinces that had poor infrastructure. To the extent the poorest of poor (those falling below the food poverty threshold) were also located in these regions and public works were primarily to be targeted towards them.

More specifically, the MTPDP projected under the local roads programme that the Local Government Units (LGUs) would be able to upgrade 90 per cent of barangay roads to all-weather condition (from 61 per cent in 1992). Farm-to-market roads totalling about 2,000 km per year were to be rehabilitated. Access roads to schools were also to be provided using labour-based methods if both economically and technically feasible.

³¹ The Government of the Philippines issued in 1988 an executive order that required national and local government agencies to promote labor-intensive methods especially for small rural-based projects. The Countryside Development Program initiated in 1993 also aimed to generate employment. This program helps government agencies to fit labor-based methods into their annual plans and budgets. The recent nationwide initiative, kabuhayan 2000, coordinated by the Department of Interior and Local Government (DILG) is an extension of the Countryside Development Program.

(c) The Second Rural Roads Improvement Project:
key feature

The project started in 1987 and continued upto 1993. It was partly financed by loans of the World Bank and technical assistance from the International Labour Organization (ILO). The balance was funded by the Government. The Department of Public Works and Highways (DPWH) was designated as the executing agency.

A central labour-based advisory and training team was created in 1988-90 to provide institutional and technical support to labour-based infrastructure works. Uniform wage rate was fixed for the whole project area which was 25 to 30 per cent higher than the minimum agricultural wages. Since the project was not seasonally targeted it might have competed with agricultural activities. In addition some workers were organized according to the Pakyaw system, where works were subcontracted for a pre-agreed price and time period. Others were paid on a task-rate basis or piece-rate basis. The workers generally preferred the task-rate and Pakyaw system because these contracts allowed them to use their time more flexibly.

(d) Outcome

The Labour-based component of the Second Rural Roads Improvement Project produced 250 kilometres of barangay roads between 1987 and 1993. The work peaked in 1988 when 74 per cent of the roads were built. About 1 million labour-days of employment were generated during 1988-93. At its peak the Second Rural Roads Improvement Project created an average of 247,600 labour-days per year.

(e) Lessons from the experience

The experience of the Second Rural Roads Improvement Project as well as other public works which took place in the Philippines are poorly documented. Despite the country's long history in labour-based projects (1973-94), no synthesis yet exists.

Chapter IV

ACHIEVEMENTS AND IMPACT OF THE RURAL TRANSPORT INFRASTRUCTURE INTERVENTIONS

This chapter reviews the achievements and impact of the rural transport infrastructure interventions under the five projects. This assessment does not deal with the physical achievements i.e. whether the projects managed to provide the infrastructure and how well they did so. This issue was partly covered in the previous chapter and it was found that the physical implementation of rural infrastructure was not a problem *per se*.

The main purpose of this chapter is to assess the benefits of improved rural transport infrastructure (roads, markets, bridges and culverts) in providing easier and cheaper transport and in promoting efficient trade which in turn have an impact on agricultural output, rural development and the well-being of residents of rural areas.

The basic questions when conducting an impact assessment are : (1) have the socio-economic conditions of the target groups changed in significant ways as a result of project implementation? (2) if so, in what directions and to what extent? and (3) why?

A. BANGLADESH

Bangladesh was among the five countries visited, where the socio-economic impact of rural infrastructure had been the most extensively documented.

The mission reviewed four of these including the one which had been conducted to evaluate the results of the RRMIMP-1.

IFPRI/BIDS Study¹² is a major study on the impact of rural infrastructure in Bangladesh published in 1990. The study

¹² R.Ahmed and M. Hossain "Development Impact of Rural Infrastructure, Bangladesh. International Food Policy Research Institute (IFPRI) in collaboration with Bangladesh Institute of Development Studies (BIDS), 1990.

classified a sample of 129 villages into two categories "developed" and "underdeveloped" based on an aggregate index which reflected the ease of access to various services such as markets, schools, banks, social and administrative services. Villages which had better than average access were classified as "developed", and were found to be significantly better off in a number of areas including agricultural production, household incomes, level of employment and income for the landless and poor women.

Tangail Infrastructure Development Project (TIDP- RPD 14): is a socio-economic monitoring and evaluation study carried out during phase 1 (November 1994) of the TIDP, funded by GTZ of Germany. The project had a significant impact on employment, prices of agricultural products, transport rates, traffic growth as well as land prices. As a result of road improvement, the project had created a substantial amount of indirect jobs (expanding transport business, newly established shops and workshops along the improved roads and in the markets). The prices for agricultural outputs produced in the project area have markedly increased while the prices for industrial items like kerosene, fertilizer and salt imported from outside the project area decreased to the levels of major economic centres. After the improvement and within two years, the average transport charges for cargo decreased by 22 per cent and for passengers by 33 per cent. Within a period of one year (mid-1993 to July 1994) the number of non-motorized vehicles increased by 85 per cent and that of motorized vehicles by 135 per cent (from 127 vehicles to 299).

IDA-supported RRMIMP-1 Rural Development Project ³³; is a socio-economic monitoring and evaluation (SEM and E) study carried out under the control of LGED. It indicates that the improvement of the RRMIMP-1 roads:

(a) generated a substantial increase in the total movement of people and goods: increased cargo (tonne-km) and passenger

³³ Socio-Economic Monitoring and Evaluation Study (RDP-7) : Socio-Economic Impact of Recently Completed Roads and Markets of RDP-7, December 1995.

traffic (passenger-km) by over 70 per cent and 174 per cent respectively within one year of development;

(b) reduced transport and passenger charges by 48 per cent and 69 per cent respectively (reflecting reduced operating costs and shift to more efficient modal composition, such as head-porterage and bullock cart use),

(c) resulted in a transfer to more efficient modes, with substantial growth in vehicular traffic - both non-motorized and motorized - and a reduction in pedestrian and bullock cart trips;

(d) increased the number of both motorized and non-motorized vehicles by 160 per cent and 146 per cent respectively; and increased the relative share of traffic volumes carried by motorized transport - from 47 per cent to 73 per cent in case of cargo and from 22 per cent to 47 per cent in case of passenger traffic;

(e) reduced the operating costs and transport charges of rickshaws and rickshaw-vans by up to 40 per cent, because of the provision of a smooth running surface;

(f) produced significant new employment opportunities for the poor through direct and indirect impacts.

The same study had also analyzed the impact of improving marketing facilities. After improvement, the number of market visitors and the volume and value of goods traded increased, losses due to spoilage decreased, the lease values (bid price) of the markets rose. New shops and commercial activities started around the markets, and land value of the areas near the markets increased significantly. The markets became more efficient, and busier and more active trading and commercial centres.

The above findings were confirmed by a recent study on non-farm growth using household survey data from

Bangladesh³⁴. The study showed that better quality roads such as paved road increased rural non-farm production, especially trade and services. For example, value-added in trading was at least 73 per cent higher in villages with paved road than in villages without a paved road. Similarly, value added in services was 22 per cent higher in villages with a paved road than without a paved road.

But one of the most interesting analysis was the "Assessment of the distribution of benefits resulting from road and market improvements"³⁵ conducted in 1991. This study is one of the very few which focus on the impacts of a road improvement on the poor households. The main findings of the study which highlight the contradictory effects of an improvement of a road on the poor households can be classified as follows :

1. Changes in travel habits

(a) The travel horizon of the rural household is dominated by walking, and the reasons for external travel are to attend the local market (haat), thereafter to gain employment and finally to maintain social and families ties.

(b) Although walking is the dominant mode, bicycle and to a lesser extent rickshaws are utilized by a minority of market users where the road to market is passable.

(c) Good road access encourages more journeys by bus due to the greatly expanded travel horizon it is able to provide compared with non-motorized means of transport, but its use is influenced by the ability to pay i.e. the wealthier groups travel more by bus than the poor.

³⁴Khander, Shahidur R "Bangladesh Rural Non Farm (RNF) Growth and Targeted Credit Interventions 1995 (Memo. The World Bank, Washington).

³⁵ "Assessment of the distribution of benefits resulting from road and market improvements" by Tony Airey and John Howe, I T Transport Ltd 1991

(d) The richer households seem less inclined to walk, using the available range of vehicle modes more intensively than either the landless or the poor.

(e) Land ownership and income have a stronger influence on hospital utilization than transport or road accessibility.

2. Impact on productive activities

(a) Agricultural income is most important for the middle and rich households. The majority of these households see agriculture as their main source of income. There is a positive association between motorable road access and improved agricultural income, but this association is less clear for villagers dependent on non-motorized means of transport.

(b) Households in roadside situations expend less time and money in earning outside income than their off-road counterparts. In other words, the improvement of a road enables the households along the road to take greater advantage of off-farm employment opportunities.

(c) Outside employment is more rewarding than the most common form of casual labouring on a wealthier villager's farm. Such outside employment tends to be dominated by the landed households and is affected by adjacent urban centres rather than good road communications.

(d) Rickshaw ownership and rickshaw operators have more opportunities when there is less competition from motorized public transports³⁶. It means good road surface tends to reduce the ownership and income generation potential of rickshaws and rickshaw vans.

³⁶ Rickshaw ownership, which is never high, tends to favour the poorest households and to provide them with some employment niches. Rickshaw loans have been a favoured strategy of the pro-poor NGO's agencies such as Grameen Bank and The Bangladesh Rural Advancement Committee's Credit (BRAC).

3. Impact on trade activities

(a) Market visits are subject to a strong distance decay influence. This does not affect use of the market but frequency of use i.e. the more distant households attend the studied markets much less frequently than those living closer. Two kilometres is a good rule of thumb measurement of the first level market's catchment area.

(b) The primary level market is of more importance to the landless and the poor. The landed households are more inclined to travel further afield to second level markets.

(c) The landless and the poor see the local market as a place to buy food and household necessities. The landed households are less concerned with the purchase of foodstuffs and attach more importance to the sale and purchase of agricultural produce and inputs.

(d) The improvement of a connecting road to a local market will not dramatically change the nature of marketing at most of the growth centres. If any change, it is related to the structure and dynamics of the area of influence of the market.

(e) Traditional means of transport are well suited to small consignment sizes; most movements which take place on footpaths, tracks, and water routes are unsuited to modern means of transport³⁷.

B. NEPAL

An impact assessment of the Local Road programme implemented on Dhading Besi -Salyantar-Siktar road (DSR) and Bhimdhunga-Lamidanda Road (BLR) was conducted in 1994 with the objective to assess the short and medium term social,

³⁷ Many surveys have shown that in fact much rural goods movement, especially the ones related to the predominant food crops, is "circular" as debt are repaid by an in-debt peasantry, and traded by arbitageurs due to the volatility of prices.

economic, institutional and environmental impacts of the LRP²⁶. The results of the assessment were classified under two main groupings, called the "Economical and Socio-economical dimensions" and the "Social and Socio-cultural dimensions".

1. Economic and socio-economic dimensions

(a) Structural changes in settlements

(i) increase in house construction was more than three times the speed compared to less developed off road areas;

(ii) bazaar areas and market centres along the roads grew about 19 per cent annually over the past five years;

(iii) land value along the road increased. The price paid for rainfed *bari* land, which is the dominant crop tripled, and in some areas went up more than ten times.

(iv) no significant difference in house construction costs in on and off-road areas, since most material for house construction was locally available;

(v) the number of metal and tiled roof increased.

(b) Trade, commerce and rural industry

The two rural roads under the LRP were constructed in areas with different development potentials.

The BLR, located close to Kathmandu, opened up an area where cash crops (fruits and vegetables) were already cultivated. By providing easier access, BLR encouraged production. After six years and with a motorable length of only 10 km, 3,000 tonnes of agricultural products are shipped annually through the road and nearly half transported by vehicles. The tonnage of imported goods amount to one third of the tonnage of exported goods with agricultural inputs (fertilizers) accounting for half of the tonnage.

²⁶ "Impact Assessment of the local road programme implemented on Dhading Besi- Salyantar-Siktar road and Bhimdunga -Lamidanda road" Impact Monitoring Unit (GTZ IMU) Kathamandu, December 1994.

The DSR opened up remote areas in the district which had relied so far on subsistence agriculture and presented comparatively far less potentialities for cash crops. Yet the survey noted few signs of shifting from subsistence farming towards more market-oriented farming. In addition, the DSR linked two market centres - Dhading Besi and Arughat Bazaar (situated in the adjoining Gorkha District). Nearly 80 per cent of the goods transported on DSR are for the bazaar areas of Arughat and Visalnagar. About 2,400 tonnes are transported into the area against 260 tonnes exported from the zone.

(c) Establishment of retailers and wholesalers

Both roads had considerable effects on changes in commerce and trade. Many tea stalls and small retailer shops opened at strategic points along the roads and in bazaar areas. An increasing number of women (40 per cent of the new shopkeepers) started shop businesses giving them considerable freedom in shop management and decision making. Medium to large farmers and households of all castes are represented among the persons operating shops along the road, while in the villages they are generally from the higher castes. One of the villages (Gola Bhanjyang) has become an important market re-distributing consumer goods for all the shops in the surrounding villages in the north. Four wholesalers have even relocated their business from Dhading Besi to Bhanjyang.

(d) Transport dynamics

Traffic has increased with an average of 10 vehicles per day on BLR and 5 vehicles on DSR. It must be noted for the DSR, the construction under a separate project of a motorable bridge over the Trishuli River which links the road with the highways. On BLR, Russian jeeps are the most frequent used vehicles, and on DSR, minitrucks. Both vehicle types are utilized for transporting commodities and passengers. On BLR, the traffic is regular, with peak hours in the morning when the farmers leave with their goods for the Kathmandu market, and in the early afternoon when they return after having sold their products. On DSR, the traffic is not regular. Vehicles operate on request at the demand of the shop keepers. The possibility for passengers to find a vehicle is highly unpredictable.

Tariffs of transport have considerably decreased. Before the road improvements, the cost of transport often used to be higher than the value of the commodities. On BLR, the cost of transport of fertilizer came down from 60 per cent to 13 per cent of the value of a bag. Savings due to lower costs have been transferred to the consumers and road users. A wider range of goods have been made available at different locations along the roads at prices comparable to those practiced in Dhading Besi.

(e) Agriculture and adoption of new methods and inputs

Use of agricultural inputs has increased. The use of chemical fertilizer has increased by four times over the last five years. About 62 per cent of the households are buying and applying chemical fertilizers as compared with 27 per cent five years ago.

(f) Employment opportunities related to road construction

The construction of the two roads has generated temporary employment opportunities with regular income during the off-farm season from December to March. About 75 per cent of the entire road construction budget was spent on labour payment.

Men and women were equally employed and receive equal payments. About 13 per cent of all persons employed were women. Most of the people who worked on the road were from households with a land of less than 10.0 *ropani* (0.50 ha)³⁹. About 64 per cent of the households who worked on the roads needed additional cash income in order to be able to survive.

(g) Employment opportunities other than road construction

Non-farm employment opportunities remained limited in the areas serviced by the two roads. The construction of DSR and BLR had negligible effect on the development of significant rural industrial development in the area over the last six years.

³⁹ On average an household with a land size of 15 *ropani* is considered as "small farmer"

The construction of the two roads have promoted medium and long term employment by increasing the skills and subsequently the possibility for further employment. The development of construction of houses along the roads has increased the workload of the carpenters; they are spending less time on their field and do not need to emigrate to India during off-season. The opening of the two routes has led to the creation of additional source of income for a number of households.

On the whole, the increased income opportunities for the rural poor had a positive effect in alleviating rural poverty in the area. The income gained through LDP had a small multiplier effect and enabled few of the households to accumulate savings or assets, but did not lead to widespread long term economic improvement⁴⁰.

2. Social and socio-cultural dimensions

Increase in mobility is regarded as a major benefit by all road neighbours. On BLR the average number of people travelling by vehicles is 144 persons per day, of which 27 per cent are women. The number of people travelling by foot is nearly double, of which 34 per cent are women. On DSR the daily average is 114 people by vehicles with 24 per cent women and 330 pedestrians of which 26 per cent are women.

The opening of the two roads have made available a wide range of commodities at prices comparable to those of Dhading Besi. This is considered as the second main benefit brought by the roads.

Food sufficiency has also improved. Rice consumption has nearly doubled in all households and has become a more frequent part of the local diet (56 per cent). The two reasons given are (a) availability of rice in local shops and (b) cash money among those who have worked on the LRP projects.

⁴⁰ See "Impact Assessment of the local road program implemented on Dhading Besi-Salyantar-Siktar road and Bhimdunga-Lamidanda road" p 30.

(a) Travel pattern

On BLR about 37 per cent of the people travel to transport their agricultural products to markets. A considerable number of students walk to secondary schools in Kathmandu (25 per cent). Many pedestrians go for social affairs (18 per cent) such as visiting relatives, attending weddings or going to temples. Very few people go for governmental services (2 per cent) or health treatment (2 per cent), in spite of the fact that the availability of easier access to health services had been mentioned as a benefit brought by the road as long as a transport vehicle is available in case of necessity. In general, the villagers have recognized that their social mobility has increased within the past five years. On DSR, people travel equally for social affairs and for studies (32 per cent). Shopping is the next main reason (17 per cent). Other reasons include visits to government offices (12 per cent), wage earning (6 per cent), health treatment (2 per cent), sales of agricultural products (2 per cent), and others (9 per cent).

In general, the improvement of roads has not increased mobility of the population to government services and facilities. Visits by agricultural extension agents or from other line departments have also not increased in spite of the better accessibility of the region.

Over the last five years the number of boys and girls attending schools have more than doubled due to the construction of additional primary schools along the road as part of a regular programme of the Department of Education. Moreover, if the proportion of boys and girls are the same in primary schools the number of girls attending secondary schools is 44 per cent for households along the roads, and less than 30 per cent for households off the roads.

(b) Social value changes

The LRP programme has had an impact on the social norms and value. By recruiting villagers irrespective of their caste and gender it created more understanding among them and promoted a self-help attitude. Working together in groups over a long period of time (2 to 3 years) also helped to develop

community spirit and efficiency among the workers. By providing equal payments to men and women enrolled in LRP it has created a sense of self-confidence among the women living along the road corridors. Out of the 13 per cent of workers who were women, 43 per cent were coming from households with more than one member working in LRP. Most of them belonged to food surplus households. As already mentioned, female involvement in shop businesses along the road corridors is high (40 per cent). In most cases their husbands are engaged in other off-farm activities and for 27 per cent of them they belong to wealthy households. Three fourth of them are able to read and write. The managerial skills achieved by the people and their experience to organize themselves into groups for planning, decision making, implementation, conflict resolution were found important. They are now being utilized in the formation of ward level groups for school construction , goat raising groups or community forestry plantation.

C. PAKISTAN

AKRSP, in its fourteen year of operation, continues to be a focus of interest due to its innovative programmes. The most recent World Bank evaluation specifically mentions the link roads as an element of AKRSP's success in improving community productivity and family welfare. "Improvements have resulted from the programme's interventions in productive investments, in production-support investments, such as access roads, in training, and in financial and technical services. A key element has been institutional development at the village level - village organizations (VOs) and women's organizations (WOs)- which has provided the framework to organize the energies of community members to avail themselves of outside assistance, as well as to direct their own resources into more productive endeavours" (The Aga Khan Rural Support Programme- A hir evaluation - a World bank Operations Evaluation Study, 1996 Executive summary p.1).

(a) Progress in village organizations

At the end of 1996, there were a total of 3,045 VOs in the programme area (against 1,834 VOs at the end of 1994), with a household membership of 116,181. This represents a coverage

of more than 80 per cent of total rural households. These figures are quite approximate. While the number of village organizations withdrawing from the programme is very rare, a number of VOs have become inactive. It appears that this has happened some of the time as a result of activities seen as "one time", such as infrastructure development. The long term sustainability of the link roads is not so much a matter of maintenance; it is much more a matter of their continued and growing economic use in marketing the products of the area.

(b) Progress in women's organizations

At the end of 1996, there was a total of 980 women's organizations (against 768 end of 1994) with a membership of 32,887. WO members are largely made up of older, nonliterate women over the age of 35. At this stage in life they have more free time for meetings, have achieved some status within their households, and have their daughters-in-law to help them. A new generation of younger literate women is also joining the women's organization. Although small in number, these individuals have the potential to create a new dynamism. The link roads are and can continue to be the way to education, skills and health services, as well as economic prospects for women.

(c) Village and women's organization credit programmes

Part of the contract between a community and the programme is the formation of a village or women's organization and the undertaking by members to make a deposit at every meeting which is usually semi-monthly. The principle objective of the programmes is to decentralize and simplify credit operations and to make savings more accessible and hence more attractive. Decentralization is accomplished by placing on village and women's organization the responsibility for approving and issuing loans to their members. The total savings amounted, at the end of 1996, to 310 million Rs.

(d) Natural resource management

AKRSP's approach to introducing new technology has been to develop packages and to promote them through specific sectoral programmes that include demonstrations, input supply,

and technical assistance. Three sectors are covered: agriculture, livestock and forestry. Link roads will be a vital resource in the development of these sectors.

(e) Marketing and enterprise development

The marketing programme has evolved significantly over the last ten years. The initial concept was to assist village organizations in cooperative marketing. It soon became obvious that bulk marketing required sound management skills. This led to emphasis on a restricted number of the more marketable products (especially higher-value fruit) and on training farmers in their production, grading, processing, and marketing. The importance of link roads in the marketing of produce has been acknowledged by farmers during the visits and is likely to grow with the advances in marketing and enterprise development.

INSTITUTIONAL ARRANGEMENTS OF THE RURAL INFRASTRUCTURE PROJECTS

Institutional arrangements are the rules which determine who is involved in the decision making process, what actions are available to the participants, how decisions are taken, and how costs and benefits are distributed. This chapter reviews the institutional arrangements of the five case studies, and describes how the beneficiaries of the projects and the service delivery institutions have cooperated in the identification, selection and implementation of the projects.

The review reveals that in one project, namely the Rural Roads and Markets Improvement and Maintenance project-1, in Bangladesh, the initiative remained with a centralized governmental service delivery institution even if an outreach system tried to be set up allowing the target population to express their needs.

In two projects, financed and executed by NGOs, the people at the grassroots level were asked to organize themselves in to groups and to identify infrastructure projects seen first as an incentive for their organization. These were the AKRSP Productive Physical Infrastructure (PPI) in Pakistan and the DDP/GDP Local Road Programme (LRP) in Nepal. In the fourth project, "The Least-developed Village Development Grant Scheme in Indonesia" at the request of the government, people at the grassroots level were organized by local elected bodies to identify their needs and channel their "effective demands" upwards to the government delivery system for getting them funded. In the last project, the Medium Term Development Strategy in the Philippines, the responsibility of designing and implementing the projects was devolved from the government to local government units with main objective to provide people with temporary employment.

Details of the institutional arrangements for each of the five projects is given in the following section.

A. BANGLADESH

1. Main features

The Local Government Engineering Department (LGED) under the Local Government Division (LGD) plays the most important role in rural infrastructure development of the Ministry of Local Government Rural Development and Cooperatives (MLGRD and C). Although the responsibility of Feeder Road Type - A still remains under the Roads and Highways Department (RHD) for historical reasons. It has been recommended that for better road network management, the responsibility of all feeder roads A and B and the rural roads should stay within the same organization⁴¹.

The inherent advantages of one agency responsible for rural roads are (a) it can ensure a consistent planning and financing framework; (b) it provides a focal point for road financing, planning and management; (c) it is a source of technical and management advice to all concerned; and (d) it offers one unified civil service which ensures sufficient scope for career development of professional staff.

2. Empowerment of the people

Although in Bangladesh the notion of community participation has been recognized for a long time, most of the components of the RRMIMP-1 were pre-selected and the involvement of community in priority setting, design and implementation was minimal. In course of implementation of RRMIMP-1 it was perceived that the involvement of community in project planning, design, implementation and monitoring was vital for the sustainability of project interventions.

During the formulation of RRMIMP-2, communities were actively involved in the selection, design and implementation of project components. Participatory work focused primarily on

⁴¹ Ahmed F & Jahan H, 1996, "Enhancing Effectiveness of Feeder and Rural Roads", The Financial Express, 20th November, 1996, Dhaka

three aspects: (a) a series of thana-level meeting of local representatives (mainly Union Parishad members) to identify and rank local priorities for feeder roads-type B, Growth Centre markets and ghat improvement as an input to the selection of project schemes; (b) the conduct of a series of studies on participation in different aspects of project implementation¹²; (c) at a later stage, during the preparation of engineering designs for schemes to be constructed in the first year of project implementation, there was participatory "users' input" to the detailed design of each of the improved markets and ghats as well as for the structures on rural roads, culverts and small bridges.

3. Local governance¹³

With the abolition in the early 90s, of the Upazila Parishads (at Thana level), the only level of elected rural local government in Bangladesh, at present, is the Union Parishad (Council) at the Union level.

The Union Parishads (UP) have been given increased powers of revenue generation and increased responsibilities for infrastructure development including planning, financing and implementation of small projects, maintenance of rural roads, operation and maintenance of markets, and monitoring of infrastructure. Infrastructure contracts for earthworks, for tree plantation and for other works up to TK.50,000 can be administered by the UP. The UP are increasingly called upon to contribute to the financing and implementation of donor-supported infrastructure projects.

The UP Chairmen are the voting members of the Thana

¹² The subjects covered community-level participation in rural infrastructure development, employment opportunities in rural infrastructure; financing of local-level infrastructure, and institutional issues in participation

¹³ The administrative hierarchy in Bangladesh is by order of decreasing size Division, District, Upazila (sub-District), Thana, Union and Mauza

Development Coordination Committee (TDCC) which is an ad-hoc arrangement at Thana level to replace the Upazila Parishads and is intended to co-ordinate and monitor development activities in the Thana. The TDCC is responsible for planning the use of the central government Block Grant for Union and Thana Development (which amounted to an average of Tk4.4 million per Thana or Tk 0.46 million per Union in 1995/96.).

Union Market Management Committees (UMMC) are responsible for managing the operation and maintenance of markets. Markets are leased out annually by sealed competitive bidding, and a proportion of the lease revenue is earmarked for market maintenance.

A number of institutional limitations to the effective functioning of the local bodies in respect of rural infrastructure development have been noted:

(a) The Unions are very small, about 30 sq.km and a population of about 25,000. Thus the planning horizon is very limited.

(b) The UPs lack staff capacity to respond to the increasing demands being placed upon them, particularly with the current emphasis on local participation and decentralization of project implementation.

(c) The TDCCs have not become fully effective co-ordinating organizations, and power tends to be with the Thana Nirbani Officers (TNO) and members of Parliament rather than with the UP Chairman.

The local government bodies are also weak financially. Local revenues raising is poor. Including the proportion of market lease values that it receives directly, a typical Union is estimated to have direct control over only Tk 50,000 per year for infrastructure activities. Additional resources can come from the proportion of the Block grant that can be allocated to infrastructure work (around Tk 270,000 per Union and per year), but control over these funds lies with the TDCC, not

directly with the UP. Some measures have however been taken recently to augment the financial capability of the Union Councils. These include (a) reducing central government's share of market lease revenue and allowing this amount to go directly to Union Councils; (b) diverting half of the land-transfer-tax revenue now going to District Councils to Union Councils; (c) increasing lease value threshold for Union Council managed markets; (d) introducing more transparent procedure for market leasing in order to reduce collusion in market leasing; and (e) enhancing unit toll rates for developed markets. These measures are expected to have raised the revenue of the UCs considerably. It is expected that once the financial capability of the UCs is enhanced, their role in rural road management will be substantial.

4. Capacity building as a result of the LGED rural programme

Apart from feeder roads-type B - planned at the central level - the other rural roads come under the responsibility of the local authorities who select the road schemes as well as other infrastructure schemes with involvement of the local communities. They also match central government's grant with locally generated revenue towards the construction and maintenance of these schemes. The trend is to give more responsibility to the local government bodies and to enhance their role in the management, planning and implementation of rural infrastructures. LGED has been "deconcentrated"⁴⁴ up to Thana level with a strong set-up at the Thana and district levels. LGED plays an important role in assisting the local government bodies in the planning and management of these roads with its technical expertise at the Thana and District levels.

⁴⁴ Deconcentration refers to a central government organization which has offices at the local level. Setting up offices at the local level does not mean that they are autonomous in decision making.

B. INDONESIA

1. Main features

According to the 1945 Constitution of Indonesia, all economic activities must be implemented *from* the people, *by* the people, *for* the people. The economic development stated in the constitution cannot be achieved by itself, meaning that every increase in national production does not automatically increase the welfare of the people in an equitable manner. The major problem is the inequality of ability and opportunity in the economic development process. One way to overcome this situation is by empowering the people⁴⁵. The basic idea is that any remedial effort should be directed at the root problem which is lack of ability among the people. The ability of the left-behind community groups must be improved, by developing what capacity they have, or in other words, empowering them.

2. Empowerment of the people

Within the villages which have been categorized as being "less-developed" as explained in chapter 3, the IDT programme identifies people who are considered "left behind" because their income is low and they have limited access to infrastructure and services and to capital for meeting their basic or emergency needs⁴⁶.

The purpose of forming groups with people who are entitled to benefit from the IDT is to have them sharing the

⁴⁵ see "lessons learned and the key to success" in "Poverty Alievation in Indonesia 1997. an Overview " a paper presented by Gunawan Sumodiningrat, BAPPENAS, at the Regional Expert Group Meeting on Rural Poverty Alievation under Changing Economic Conditions, Beijing March 1997

⁴⁶ Most of the following information are extracted from "Panduan Program Inpres Desa Tertinggal" ("IDT Programme Guide") published by National Development Planning Agency and Ministry of Home Affairs, December 1993

same objective of solving their mutual problems and willing to develop undertakings in order to raise their welfare, self reliance and mutual cooperation. One group consists of about thirty households who live in a village. There can be several groups in a village. At the village level, the village head or kepala desa, assisted by the Village Community Resilience Institution (Lembaga Ketahanan Masyarakat Desa or LKMD) which is a type of development advisory board, identifies the poor families in his/her jurisdiction and then takes action to form target groups called poor family groups or "Pokmas".

The following criteria are used when forming Pokmas: (a) they should be from poor families who need to raise the welfare of members; (b) there must be no imposition in the forming of groups; (c) the groups will undertake socio-economic activities such as productive undertakings, capital accumulation which will give economic benefits to group members in a sustainable and long lasting manner. In forming groups, a distinction is made between those poor families who are employed, those who have their own business, even if they are small, and those who do not have permanent jobs and as such do not earn a regular income.

Each pokmas has the task to identify activity proposals, skills to promote, and anything that has the potential to raise their income. In identifying the problem and in drawing up the activity plan, the pokmas is guided by an "associate" who is a kind of facilitator or a broker.

The kepala desa assisted by the LKMD, reviews and screens the proposals for IDT funding submitted by the pokmas and sends them for approval to the camat at the kecamatan level. The funds are then directly transferred to the beneficiary pokmas which report on a monthly basis to the village council (LKMD).

A pokmas is, in general, constituted by 30 to 60 poor families and in each village there are 2-5 pokmas. In the first year, a pokmas is selected in each poor village and is given approximately a working capital of Rp 20 million or about US\$6700 (3000rps for US\$1). After a year or two, the recipient

pokmas has to pay back the amount, which is then given to another member.

Groups members are encouraged to save by setting aside a portion of the income from their undertakings. Considering that the amount of IDT programme funds is limited, the village head, together with the LKMD, prioritizes the poor groups if all poor groups can not get the funds at the same time.

Since poor people have limited capacity for self development, an associate is needed whose function is to assist poor groups so that they can become mutual organizations oriented towards improving the standard of living of their members. An associate is responsible for participating in the setting-up and operation of a group as facilitator and communicator. Associates are recruited from fieldworkers at the subdistrict and village levels from various departments (ministries) and social organizations. The most effective associates are members of the communities themselves who have been successful in their undertakings.

3. Local governance

Administratively Indonesia is divided into 27 provinces each with a governor who serves as the head of the administrative area; (Java has three large provinces, one small province and the capital zone). Provinces are divided into districts or regencies (*Kabupaten*), headed by a *bupati* (243 *Kabupaten* in the country and 82 on Java). Below the *Kabupaten* are the subdistricts (*Kecamatan*) headed by a *camat* appointed by the *bupati*; there are about 10-20 *kecamatan* per *kabupaten* and a total of 3,844 in the country. The next administrative division is the village (*desa*) in the rural areas and the *kelurahan* in urban areas; there are between 10-20 *desa* per subdistrict and a total of 65,852 *desa* in the country. The Department of Home Affairs is involved in all aspects of regional development carried out by the local government authorities.

The system of government in Indonesia provides that the provinces and the districts are autonomous regions with an executive structure and a Regional People's Representatives Council. The executive structure of the local government is headed by a governor at the provincial level and by a bupati at the district level⁴⁷. The provincial governments implement projects which are funded through the provincial budget (APBD) and through the INPRES Dati I programme which funds provincial infrastructure development. The other source of funding is from the national budget (APBN) which is channelled to the provinces through the line ministries. They are assisted by the BAPPEDA which coordinates the annual regional budget proposal, conduct economic and social research for development planning and monitors project implementation⁴⁸.

At the kecamatan level, the camat and his staff chosen by the camat from among local residents are charged with monitoring and coordinating government activities in the kecamatan. The camat has no autonomous functions. The head of a village (kepala desa) is chosen from among the population of the village and is not a civil servant. His main duties are to coordinate government activities in the village, serves as the link between the government and the village population, and coordinate development activities organized

⁴⁷ Law no 5/1974 is the basic legislation which provides for the "simultaneous implementation of decentralization and deconcentration as interactive and complementary measures under the Principles of Regional Administration"

⁴⁸ At national level, the National Development Planning Agency (BAPPENAS) is responsible for strategic planning, for national economic development, preparation of long term and five year national development plans (REPELITA) and review of annual budget for all development activities funded by the national budget.

and carried out in the village itself. According to national regulations, the kepala desa is to be elected by the villagers but sometimes for various reason the kepala may be appointed by the province and is chosen on the basis of his/her ability to generate cooperation and participation.

In development activities, the kepala deas is assisted by the Village Development Advisory Board (LKMD- *Lembaga Ketahanan Masyarakat Desa*), the membership of which is chosen by him. The village head appoints influential local figures to the board. The responsibility of the LKMD is to propose development projects - those to be carried out by the villagers themselves and those to be carried out by the government. LKMD provides traditional leaders with access to the planning and implementation of the project. Similarly, another organization, the Village Consultative Council (LMD- *Lembaga Musyawarah Desa*) is established to ratify regulations and expenditures put forth by the kepala desa. This group is also appointed and consists of influential villagers or recognized leaders. These two bodies, being nearly synonymous in composition, provide channels to the traditional leaders, within the scope of village activities.

4. Capacity building as a result of the VIP project

In the past, the approach to the identification and construction of infrastructure was top-down through either sectoral programmes or block grants of the Impres programme, implemented through provincial or district levels of government. The works were carried out via contractors who were selected through the normal bureaucratic bidding procedures. In several ways this situation was unsatisfactory. In addition it was felt that most of the time decisions on the provision of infrastructure were decided bureaucratically and central government funding usually stopped at the funding of district level of infrastructure where traditional benefit-cost ratios were more favourable and easier to compute. The VIP

has provided valuable experience in bottom-up processes and in simplified delivery of infrastructure. It has proved that the communities are capable of constructing their own infrastructure given clear guidelines and a degree of technical assistance. The transfer of technical assistance and management skills to the villages are very important. Technical assistance is necessary to balance the relationship between the village and the project manager from the bureaucracy⁴⁹.

C. NEPAL

1. Main features

The basic premise of GTZ Regional Rural Development (RRD) approach is that people are both the means and the goal of development. Rural development projects are designed to cooperate with target groups and with government or non government executing agencies in identifying regionally compatible technical and organizational solutions, then to prepare ground for practical application of those solutions and to support their dissemination by providing advice⁵⁰.

Local participation is the key to the implementation of the LRP roads from technical and environmental aspects. In LRP, emphasis is placed on using locally available resources, manpower, materials, technologies and skills. Local people are employed as workers, supervisors, health workers, storekeepers and mechanics.

⁴⁹ "Rural Infrastructure development through people participation in Indonesia" by in Asia Pacific" by Gunawan Sumodiningrat (BAPPENAS) Regional workshop on the UNDP Human Development Report, Hanoi, June 1997)

⁵⁰ see p4 "Impact Assessment of the Swablaban Program in Dhading and Gorkha Districts" March 1996, Impact Monitoring Unit (GTZ/IMU), Kathmandu

The LRP projects are implemented based on the approach of "institutional pluralism", which means that a strong emphasis on the promotion of self reliance and local development on one hand, with direct participation of the local people themselves on the other.

2. Empowerment of the people

The entry point of intervention in a community is the formation of Income Generating Groups (IGGs) and mobilization of individual savings into the Swabalamban Fund of the Group. The IGGs are the grassroot organizational basis of the programme, the principal institutional mechanism for organizing and sustaining the whole range of economic and social development activities in the community. The amount of monthly savings to be contributed by the members to the Swabalamban Fund is based on the group's decision. The IGGs have an internal structure of their own, meet regularly once a month, apply group specific sanctions on offenders and loan defaulters, implement their own decisions and maintain up to date records of loans. Over the years IGGs have evolved to become neighbourhood-based entities rather than exclusive class-based organizations.

Motivators are the grassroots functionaries of the programme and are assigned to programme VDCs. The motivator is a highly respected person in the community who stays in the village as one of the community members. His main functions are to motivate the poor villagers to form IGGs, to guide them in conducting their monthly meetings and provide other necessary assistance to steer the IGGs towards becoming a functioning organization. The motivator is also responsible to introduce new ideas and technologies and motivate the villagers to undertake other reforms in the community. The motivator is the key person of the programme and the performance of the IGGs is very much dependent upon his abilities. A senior motivator at sub-district level

monitors the performance of the motivators and is himself monitored by a district level promoter.

3. Local governance

Nepal is divided into 5 development regions which are further divided into 75 districts. Districts are divided into villages. There are about 4,000 villages at present divided into wards.

The Local Governance Act of 1992 has given increased authority, control and responsibility for development interventions to local institutions - at district level the District Development Committee (DDC) and at village level the Village Development Committees (VDC). Several villages (VDCs) are grouped under an Ilaka. DDCs, Ilakas and VDCs officials are elected to serve for a five year term. The DDC is assisted by a Local Development Officer (LDO) appointed by the Ministry of Local Development (MLD).

The local control of finances is almost non-existent. About 80 per cent of government expenditures are planned and controlled by central government ministries through their district officers. The DDC has direct control over only about 10 per cent of the total amount of government expenditures in a district. These funds originate from a block grant distributed through the MLD and locally generated revenues⁵¹.

The National Planning Commission (NPC) and the Department of Roads (DOR) under the Ministry of Works and

⁵¹ DDC - (a) Block grant from the Ministry of Local Development (NRs 5,00,000.00) (b) Constituency development grant (NRs 2,50,000.00).

VDCs - (a) Block grant through DDC (NRs 5,00,000.00), (b) Land revenue collected from VDC (75 per cent of the total amount).

Transport (MOWT) have reached, recently, an agreement that the responsibility for the selection, construction and maintenance of district roads is transferred to local government institutions (DDCs and VDCs). The Eighth Plan has also emphasized delinking district programmes from central programmes and involving DDCs in the implementation of the local or district-level programmes. DDCs lack, however, the engineering and other technical capacities needed to administer the road programme.

Below DDC, the Main Road Committee (MRC) is responsible for policy making and decisions regarding road activities (construction and maintenance) in the district. It is chaired by the DDC Chairman. The Local Road Committee (LRC) is responsible for the planning and implementation of road activities at the local level. It comprises 9 members (farmers, traders, local leaders) all representing the villages through which the road passes. The representative of the Ilaka which groups the concerned villages acts as chairman of the committee.

The National Planning Commission (NPC) and the Ministry of Local Development (MLD) are now concerned with the establishment of an appropriate institutional organization. Discussions are taking place to create a separate Division for District Road Construction within the Ministry of Local Development in order to coordinate, implement and monitor local roads more effectively in the district.

4. Capacity building as a result of the DDP and GDP Local Road Programme

Local officials consider that the LRP programme financed by GTZ had positive effects on local institution building. As institutions, MRC and LRC in Dhading and Gorkha appear to have better capability to implement local road projects. Further, at VDC level, the LRP programme has

enhanced overall local level planning, implementation and supervision capabilities, particularly among the local level politicians. For example efforts in using locally available manpower, technologies and resources is noticeable. Village level technical and managerial capacities have also been strengthened. Local people have acquired new skills and their confidence has increased implementing even larger road projects than the LRP.

D. PAKISTAN

1. Main features

The AKRSP model⁵² is one of "organization and cooperative management" at the village level. This is based on mass participation of villagers with relatively homogeneous resources, private ownership of cultivated land, group management of irrigation water and common grazing land. AKRSP has brought something new by introducing a mode of implementation. It is more a "working method" rather than just a concept.

2. Empowerment of the people

The process starts with the establishment of a village organization (VO) with all families as participating members, partly by insisting that they all attend meetings and contribute to groups savings. The village organizations (VOs) and women's organizations (WOs) provide the framework to organize the energies of community members to avail

⁵² The basic concept is drawn from the experiences with rural cooperatives in 19th century Europe. Additional elements have been adapted from versions of village organization and cooperation tried successfully in Taiwan and Korea in the 1950s. The current model also owes to the work conducted at the Comilla Academy of Rural Development during the 1960s and early 1970s.

themselves of outside assistance, as well as to direct their own resources into more productive endeavours⁵³

Each village is treated as a separate case, with the rate of progress and the individual steps tailored in response to the villagers' s reactions. All villages are eligible to participate and receive the same support provided they agree to enter into a contract with AKRSP with the following conditions:

- (a) The Vo has to meet as a general body on a regular basis so as to enable all members to review the performance and needs of their organization regularly;
- (b) All members must deposit their savings at their regular meetings. The accumulated funds are recorded in an individual pass book but are banked collectively. This "equity capital" is the key which gives access to the formal rural financial system.

The basic planning tool for the Productive Physical Infrastructure (PPI) is a series of diagnostic dialogues carried out with villagers⁵⁴:

- (a) The first dialogue explains the objectives and methods of AKRSP and invites the villagers to identify a PPI that could be undertaken by the villagers for the benefit of the village as a whole;
- (b) The second dialogue explores the feasibility of the PPI under the technical supervision of AKRSP;

⁵³ The Aga Khan Rural Support Programme- A third evaluation - a World Bank Operations Evaluation Study. 1996 Executive summary p 1.

⁵⁴ In practice the dialogues are a series of open-ended discussions that not only identify a viable entry point for AKRSP but also develop the relationship between villagers and AKRSP personnel.

(c) During the third dialogue AKRSP describes the form and extent of assistance it can provide and villagers explain how they will plan and implement the scheme, develop skills, meet regularly and establish group savings. If successful, the third dialogue ends with the formation of a VO and the presentation of the first installment of a grant from AKRSP in support of the agreed PPI.

One of the important features of the AKRSP process, when planning an infrastructure project, is to identify potential conflicts at an early stage so that steps can be taken to prevent them. According to AKRSP, most of the problems in the case of roads occurred when some individuals wanted land compensation or wanted to change the alignment of the road to suit their interest. However, the mode of planning with communities, rather than a "blueprint approach" has led to resolve and neutralize such conflicts.

3. Local governance

Administratively, Pakistan comprises four provinces i.e. Sindh, Punjab, North West Frontier Province (NWFP) and Balochistan. In addition, there is a Federally Administrated Tribal Area (FATA) and a Federal Capital Territory of Islamabad. Provincial governments are headed by chief minister as chief executive and Governor as constitutional head of the province. Each province is divided into divisions and each division into districts. The executive head of a division is called the Commissioner for general administration, law and order, internal security and collection of revenues. The commissioner is assisted by deputy commissioners and assistant commissioners.

The existing system of elected local government was introduced in 1979 to carry out public development programmes. Under this system a two-tier institution of elected District Council and Union Council was created in rural areas

and elected Municipal Council/Committee in urban areas. Election for these local councils are required to be held every four years. However, at present the local government system is under suspension. In the past local bodies have sometimes managed substantive development programmes for infrastructure development, including the construction of roads.

The responsibility for roads and road transport is shared between the federal, provincial and the local governments. Provincial governments are responsible for secondary roads and local governments look after tertiary roads. Farm-to-market roads and tertiary (local) rural roads are under the responsibility of the provincial Local Government and Rural Development Departments (LG and RDD) which works in coordination with the federal Ministry of Local Government and Rural Development.

4. Capacity building as a result of the AKRSP

The institutional development at the village level through the creation of VOs and WOs under AKRSP initiative, has raised the need for cooperation between the village organizations and local government bodies. To ensure their long term sustainability, VOs must develop links and partnership especially with government agencies and local bodies, as the government is the main entity likely to be able to allocate funding resources on a sustainable basis.

In order to promote such links the current Chief Secretary of the Northern Areas has encouraged government line agencies to involve the VOs and WOs as local participatory partners in development. In order to further strengthen these links it has been suggested that AKRSP should develop a permanent forum and/or mechanism of collaboration with the government and other NGOs in the area. The following steps may be worth considering in this regard:

- (a) Development of a district-based coordination committee of all relevant government departments, AKRSP and representatives of communities (initially those that have already developed link roads through the PPI programmes);
- (b) Development of a road development programme for the whole area through the coordination committee;
- (c) Development of an agreement with the government for the division of responsibilities and for bearing the costs of road development schemes;
- (d) Agreements on priorities of where the roads will be developed in a phased programme;
- (e) Negotiation among groups of villages about the siting of the roads;
- (f) Agreement on the part of participating communities on sharing responsibilities on the maintenance of the roads.

E. PHILIPPINES

1. Main features

The Medium-Term Philippine Development Plan (MTPDP) has identified six principles for its implementation⁵⁵. The first two are macroeconomic stability and full cost recovery, while the other four embody the country's belief in democratic processes. These are:

⁵⁵ See "Social Development in the Philippines: vision, challenges and imperatives" a report prepared by National Economic and Development Authority (NEDA) in solidarity with the World Summit on Social Development, Copenhagen, March 1995.

(a) Devolution or subsidiarity is a direct outcome of the strategy of empowerment. Local government units set priorities and decide matters in their own spheres of competence within the legal framework of the Local Government Code;

(b) Private sector-led development supports reliance on private sector initiative;

(c) Democratic consultation is conducted by the government particularly at the national executive level;

(d) Social equity means that in some circumstances, poor and non-poor need not always be treated alike. It is an exception to the principle of full cost recovery when the intended beneficiaries are among the poorest.

2. Empowerment of the people

Empowerment of the people is a key strategic element under the MTPDP based on the premise that human development and the alleviation of poverty are best achieved through the direct and combined efforts of people themselves; and that human capabilities are best expanded through their direct exercise.

To achieve this, the people must be integrated from the very start into the development process itself - not only as its distant and hopeful beneficiaries, but also as its agents, and its motive force. However, peoples empowerment is possible only if each and every Filipino is able to attain his minimum basic needs. Minimum basic needs have been identified as those needs related to survival (health, nutrition, water and sanitation), security (shelter, income, peace and order) and empowerment (basic education, literacy and participation).

Grassroot consultations are viewed as important for airing sectoral agendas and as a tool for improving social

cohesion and cooperation. In that respect two local level planning tools based on the needs expressed by the people at the level of the barangays are currently in use in the Philippines.

The Minimum Basic Needs (MBN) Approach is a tool for prioritizing primary requirements for survival, security and enabling needs of the family and community. It deviates from the traditional top-down and sectoral mode of management. In order to identify and prioritize programmes that address the minimum basic needs of the target families/communities, a situation analysis is conducted, at the barangay level, which includes three sets of information: (a) family/community profile to identify the target families/areas; (b) administrative capability; and (c) socio-cultural and political environment.

3. Local governance

The Philippines is divided into 74 provinces which are grouped into 16 political regions. A province is subdivided into several municipalities which are further subdivided into smaller villages called *barangays*. A barangay consists of a centre where most basic services such as health station, an elementary school, and a market are located.

The Local Government Code of 1991 represents a major step in strengthening democracy and participation. Provision for the delivery of basic services and facilities are devolved from the national government to provinces, and barangays so that each LGU becomes responsible for a minimum of services and facilities in accordance with established national policies, guidelines and standards.

However, the decentralization process has not been without problems, which are mainly related to the perceived lack of parallel devolution of financial resources to fund local development initiatives. Nevertheless, these are slowly being

worked out. Further, the lack of management capability among the local elected officials, has also been criticised and efforts to address such gaps have been initiated through massive capability building programmes undertaken in particular by the Local Government Academy.

The MTPDP recommends the reinforcement of the capability of the Local Government Units (LGUs) to carry out the tasks devolved to them, particularly in administering, implementing and developing infrastructure facilities such as the construction and maintenance of barangay roads (composed mostly of farm-to-market roads), bridges and water supply systems.

According to article 24 of the Local Government Code, the local governments are in the best position to prioritize the allocation of resources to generate optimum impact on capital investment, and to ensure continuous operation and maintenance of facilities.

Chapter VI

COMPARATIVE ANALYSIS - LESSONS FROM EXPERIENCE

This chapter summarizes the major conclusions which can be drawn from a review of the five case studies.

A. HETEROGENITY OF THE FIVE CASE STUDIES

At first sight, there is little in common between the US\$98 million of the programme RRMIMP-1 in Bangladesh to rehabilitate about 500 km of roads in the northern region, the US\$140 million for the Second Village Infrastructure Project in Indonesia financed by the World Bank, the US\$3 million spent on 387 projects of transport infrastructure (link road, bridges, poney track) of AKRSP in Pakistan and the US\$1.2 million for 64 km of roads constructed in Dhading district LRP in Nepal.

Heterogeneity in the conditions of construction: The engineering and construction complexities are not the same in rehabilitating a road in a flat, flood-plain terrain, high rainfall and annual flooding requiring substantial embankments and many cross-drainage structures (Bangladesh) and the construction of roads passing through rugged topography (Northern Areas in Pakistan) or a fragile mountain eco system (hilly belt of Nepal) which requires much of road engineering skill for selecting alignments to minimize construction problems and costs. As a result there is great heterogeneity between the unit cost per km of construction of these different roads and accordingly in the budget requirements.

Heterogeneity in the number of beneficiaries serviced by each of these roads: About 50,000-100,000 people living in the direct area of influence of the roads under rehabilitation in Bangladesh, few thousands on the two roads in Nepal, hardly few hundreds for each road constructed by AKRSP in Pakistan or by the VIP projects in Indonesia.

Heterogeneity in the conditions of involvement of the beneficiaries: In principle it is much easier to mobilize the households from a single village in order to construct 5 km of road to link their village to the nearby main road than to pursue the same objective when the road crosses half a dozen villages.

B. COMMONALITIES OF THE FIVE CASE STUDIES

In spite of the above stated variations, the five case studies represent programmes which had the objective to build small scale rural infrastructure that are not capital intensive. With widely dispersed programme areas, each sub-project had its relatively unique characteristics and required location-specific decision-making. The Second Rural Roads and Market Improvement and Maintenance Project in Bangladesh aimed at the rehabilitation of 43 different road sections for a total of 311 km, or an average of 7.3 km per project, not to mention the construction of 6,000 culverts and small bridges on about 10,500 km of rural roads. Similarly, the link roads constructed by AKRSP (Pakistan), VIP (Indonesia) or in the Philippines are not longer than 5 km to 10 km in general. The two roads constructed in Dhading are the longest (42 km and 22 km) in the five cases reviewed.

More importantly, these five cases are characterized by some recurrent and common themes regarding the provision of rural infrastructure. Three strategic variables have been identified:

- (a) Community participation ;
- (b) Decentralization; and
- (c) Appropriate methods of construction.

C. COMMUNITY PARTICIPATION

The five case studies have regarded community participation both as a means and as an end. People's taking

responsibility for their own development is a better way to achieve improvements in economic and social conditions, and it is more likely to be successful, cost-effective, and sustainable. The reasons advanced to justify emphasis on community participation, can be listed as follows:

- (a) it gives local people a direct and active stake in organizing themselves to develop their areas' economies;
- (b) it encourages the mobilization of local resources such as land, labour savings, assets, plus indigenous knowledge of specific local conditions such as environmental and socio-cultural norms;
- (c) it helps build the capacity of the people to effectively plan and implement projects;
- (d) it increases community control over resources and development and promote greater self reliance;
- (e) it enhances the sense of community ownership needed to ensure maintenance of completed projects;
- (f) it encourages more equitable distribution of benefits because project management is accountable to a more representative community.

However, the way community participation has been addressed in the case studies, reveals at least two different approaches as follows:

In the RRMIMP in Bangladesh and the MTPDP in the Philippines, participation is essentially conceived in terms of "Consultation". Grassroots consultation to identify the needs of the people in the MTPDP, and "Consultative participation" in the RRMIMP where the views of different stakeholders are sought but may be rejected by the implementer, rather than "interactive participation" where the views of different stakeholders, who have

different perspectives, expertise and knowledge, are brought together in making decisions. On the other hand, the AKRSP programme in Pakistan, the Dhading-Gorkha projects in Nepal and the VIP in Indonesia share a common participatory approach. The three projects seek to increase the capacity of local people by making them involved in their own development so that they can improve their income and welfare in a sustainable and equitable manner⁵⁶, what AKRSP called the "hard" approach as opposed to a "soft" approach.

As in any partnership, the development of a partnership entails a set of obligations on the part of each partner. Under the "soft" approach external agencies undertake activities *for* the selected beneficiaries, decided outside their involvement with their participation limited to providing free labour and other inputs. Under the "hard" approach, the activities are undertaken collectively *by* the beneficiaries; an "incentive" is provided by the agency to encourage partnership creation. The agency does not undertake activities on behalf of the villagers, rather it provides an enabling environment in which there is an incentive for people to work for themselves in order to improve their own lives.⁵⁷

In the three projects, the "hard" approach started by the same first condition: the rural communities to organize themselves into village or community organizations. For the AKRSP and the DDP the second condition was that the rural poor were to start a programme of capital generation through a process of regular savings. All members were required to save according to their capacity. In Nepal these groups are called Income Generating Groups (IGGs) to stress the importance given to this aspect. The third condition was that the Village

⁵⁶ All three projects are implemented in countries where there is a strong tradition of community self-help which makes participatory decision-making easier.

⁵⁷ see "A process approach for Participatory Monitoring and Evaluation of Village Organizations in Gilgit" AKRSP September 1992.

Organizations (VOs) were to upgrade the human skills available in the villages. When these three conditions had been agreed by all the members of the community, an "incentive" under the form of a grant from the programme (AKRSP or GTZ) was given to carry out the project identified and selected by the community. That was the "incentive grant component" in Nepal or the "Productive Physical Infrastructure" in Pakistan.

In Indonesia, the "poor family group" (Pokmas) once formed, had the task to identify an activity proposal which had the potential to raise their income and which was submitted to the local government for funding. Pokmas were encouraged to save by setting aside a portion of their income but this was a recommendation and not an obligation unlike the other two projects.

In all the three projects, community participation was an instrument to empower the poor. It was pointed out by AKRSP staff that through frequent meetings of villagers, and through the preparation of written records, the business of the village in relation to AKRSP became public and open to all. In this way the rights of less powerful members of the community were protected and opportunities for individuals or small groups to appropriate the benefits were minimized. Unfortunately, this approach did not automatically ensure that the poor would get enough attention as was noted in a recent evaluation report of the AKRSP. Poor women who were often the most in need of economic input for their households, could be excluded by other more powerful group members. There could also be a tendency for some Women's Organizations (WOs) to give preference to more capable women, so that a particular activity had a greater chance of success⁸.

In each of these projects, the social organizers (AKRSP/Pakistan), the associates (VIP/Indonesia) or the

⁸ "The Aga Khan Rural support Programme: A third Evaluation" World Bank Operations Evaluation Department 1995

motivators (GDP/Nepal) played the key function of facilitators⁵⁹. Their first task was to assist the members of the group in identifying their interests and their felt needs. The self-definition of interests was seen as the keystone for securing their participation. They also had the responsibility of protecting the interests of the poor against pressure by local elites who could divert project resources for their own benefit.

The following table 10 summarizes some of the specificities of the participatory approach as compared with the conventional approach.

D. DECENTRALIZATION

There is a general consensus of the five case studies that in order to carry out efficiently a programme of rural infrastructure, local bodies are in a better position to make relevant decisions as compared with the central government departments. It has also been recognized that the undertaking of such responsibility should involve the transfer of powers and functions from the national level to a lower level i.e. decentralization. Although the application of the decentralization process varies, three types are often differentiated⁶⁰:

⁵⁹ Most rural projects tend to follow the same pattern. For example in Pakistan, the Sindh Rural Water Supply, Sanitation and Health Project, a World Bank (IDA) assisted project, executed through the Public Health Engineering Department and the Rural Development Department. Communities are approached by Project Implementation Teams (PITs). The major role of PITs includes motivation for community development, assistance in the formation of Village Organizations (VOs), Women's Groups (WGs) and Women Leaders Groups (WLGs), assistance in identifying needs, infrastructure development, installation arrangements, repair, maintenance and related tasks.

⁶⁰ A fourth one is sometimes included: privatization as the transfer of power (and responsibility) to private entities.

Table 10. Participatory approach versus conventional approach

Stage of the project	Conventional approach	Participatory approach
Initiated in	capital city	village
Begins with	a plan	creation of a village organization
Organized by	technical specialists	local facilitator/ community organizers
Design	made by experts, fixed	discussed by people, evolving, collaborative
Construction technology	capital intensive technologies	local resources-based techniques
Mode of construction	contractor	village labourers
Mode of decision	top-down process	bottom-up process
Representation of weaker groups, women, etc.	through local representatives	direct participation through targeted groups
Sustainability	additional funding is required for the maintenance	sense of ownership which make project beneficiaries more willing to undertake the maintenance

Devolution: The Central Government gives responsibility and authority for deciding, planning and implementing to local bodies which in turn facilitate popular participation;

Deconcentration: Transfer of responsibilities for selected

functions from the Central Government headquarters to subnational units within sectoral ministries. The field staff implement decisions taken at the Centre without having the authority to change them.

Delegation Establishment of subordinate units in which officials appointed by the Central Government have authority to exercise delegated power. They have responsibility for implementation of selected development activities, but are subject to the supervisory powers of the Central Government officials.

A review of the five cases shows two different conceptions regarding the responsibility in administering and developing rural infrastructure programmes. In Bangladesh, the Government has chosen the Deconcentration model with the creation of the Local Government Engineering Department (LGED) which plays a key role in the development and maintenance of rural infrastructure in Bangladesh. Whereas, Indonesia, the Philippines and Nepal (so far)⁶¹ have opted for the Devolution model. The responsibility of administering, implementing and developing rural infrastructure facilities is given to the Local Government Units (LGUs).

The Deconcentration model is justified by LGED in Bangladesh for the reason that this model (a) provides a focal point for road financing, planning and management; (b) ensures a consistent planning and financing framework; (c) has more potential to encourage the equitable distribution of resources; (d) performs better in terms of accountability; (e) can better resist pressure from local vested interests; (f) can afford to employ the "best and the brightest" by offering them one unified civil service

⁶¹ The National Planning Commission in Nepal is considering the possibility of setting up a separate 'Division for District Construction' within the Ministry of local Government in order to coordinate, implement and monitor local roads

which ensures sufficient scope for career development of professional staff.

For large scale schemes serving a large group of beneficiaries and requiring more than a minimum of engineering, the Deconcentration model has often been recommended. Where there is a strong central institution which can be motivated to address rural issues and is capable of doing so in a "demand oriented way" , it may prove to be much simpler to approach through this agency than to try to empower and equip local communities to assume full responsibility for their entire rural infrastructure needs². There are however some perceived disadvantages of such special purpose rural road agencies. Decisions are taken at the Headquarters and therefore remote from users. If the users are involved in the decision-making process they are only consulted without any participatory input; and more generally such arrangements hamper decentralization and cost-sharing³.

The model followed in Nepal and Indonesia *devolved* to local government as *discretionary authorities* the responsibility of planning and constructing rural infrastructure. In Nepal , the overall responsibility for local road construction and maintenance is with the District Development Committee (DDC) which is assisted by (a) the Main Road Committee (MRC) responsible for policy making and decisions regarding road activities (construction and maintenance) in the district, and (b) the Local Road Committees (LRC) responsible for the planning and implementation of specific road projects. In the framework of an

² The State of Rural Infrastructure A global perspective L Pouliquen International Workshop on Rural infrastructure The World Bank May 1997

³ See Establishing a Clear Institutional structure for Managing and Maintaining Rural Roads, paper presented by Ian G Heggie to the ESCAP/World Bank Seminar on "Management and Financing of Road Maintenance", Bangkok, September 1996.

Umbrella project "Participatory District Development Programme". UNDP is currently considering the funding in cooperation with the Asian Development Bank, of a project to strengthen the capacity of the District Development Committees (DDC) in both the planning and construction of rural infrastructure.

In Indonesia, the responsibility of the rural infrastructure are already transferred at the level of the village. It is the Village Community Resilience Institutions (Lembaga Ketahanan Masyarakat Desa or LKMD), chaired by the Head of the village which has the responsibility of implementing the programme of rural infrastructure in the rural areas and to serve also as contractors. The LKMDs either employ villagers directly and buy materials, rent equipment, etc. or if need be, contract work or expertise with local contractors/technical experts.

As already mentioned, the World Bank with the Second Village Infrastructure Project for Indonesia which aims at building small infrastructure in 2,600 poor rural villages in Java and Sumatra under a loan of US\$140 million, has chosen the LKMDs as implementation agencies for the programme. Instead of a traditional top-down approach with the infrastructure identified by a line department and carried out via contractors selected through the normal bureaucratic bidding procedures, the village communities themselves identify projects and execute them under the monitoring of the local LKMD. The VIP has proved that the communities are capable of constructing their own infrastructure given clear guidelines and a degree of technical assistance. The transfer of technical assistance and management skills to the villages are very important, and is necessary to balance the relationship between the village and the project manager from the bureaucracy⁴⁴.

⁴⁴ "Rural Infrastructure development through people participation in Indonesia" by in Asia Pacific" by Gunawan Sumodiningrat (BAPPENAS) Regional workshop on the UNDP Human Development Report, Hanoi June 1997)

An "appropriate technology" is defined as one that is cost-effective and best adapted to local environmental conditions and achieves the relevant technical standards. Three components are generally considered : (i) Low level technical specifications; (ii) environmentally friendly construction techniques; and (iii) better use of local resources.

The DDP in Nepal and the AKRSP in Pakistan have shown that it was possible to construct successfully by community participation rural roads in difficult conditions using labour-based methods with hand tools only, conducted with no use of blasting and sophisticated technology but extensive application of bio-engineering methods.

However, the common point of the five projects is the emphasis placed on the use of local resources i.e. local skills, locally available materials, locally produced tools and equipment as well as unemployed and underemployed labour. All the five projects used labour-based methods but with a different final objective. In Nepal, labour-based methods provided a way to encourage genuine grassroots community participation in the identification, planning and implementation of projects. In Indonesia, labour-intensive methods were used to promote greater reliance and cash employment in poor rural villages deficient in small infrastructures. In the Philippines, the Rural Road Programmes were public work programmes (as distinguished from community work) executed with the objective of employment generation.

Consequently, the mobilization of the people did not present the same features. In the Indonesian project, employment and cash compensation to village labourers were an important feature of the project. However, if it was necessary, the villagers would prefer not be paid and the money to be used to buy materials because the road remained their top priority. In the Philippines, on the contrary, the main issue was the wage rate to be applied. On one hand the wage rate should not be too low to be able to achieve desired skills and productivity levels. On the

other hand, wage rates should not be high in order to maintain the self-targeting feature of public works under fiscal constraints. Moreover, if the wage rates are too high, it would tend to exclude the poorest segments of interested people from work opportunities⁵⁹.

The Bangladesh project presented the most extensive contribution of the use of labour-based methods to build rural infrastructure. For decades, employment for labourers in earth work had been a regular feature of many rural works programmes often specifically designed to create employment to the rural poor. In the process, organization of groups of male and female labourers was a common strategy in many of these projects. The Rural Infrastructure Maintenance Programme (RIMP) has favoured since 1992, employment of women organized into labour groups for routine maintenance activities using a Lengthman System (LS). Destitute women labourers are assigned to maintain a stretch of 1 km. They are responsible for day-to-day maintenance activities including caretaking of the planted trees. The number of labourers in a group depends upon the length of the road. The labourers elect one chairwoman and one secretary from among themselves who sign contracts on behalf of the group.

LGED has introduced two innovative elements regarding the promotion of labour-based methods: (i) the labourers can constitute formal Labour Contracting Societies (LCS). Under this arrangement, labourers have the possibility to sign contracts, to negotiate with the suppliers, to hire equipment, to organize their work; in short to act like a private contractor; and, (ii) in the tender documents for construction of FRB, there is a specific provision that the contractors will use LCSs for at least 25 per cent of the contract work initially and at least 50 per cent by the beginning of the fourth year. The advantages of the LCS system

⁵⁹ See "Selected Social Safety Net Programmes in The Philippines Targeting, Cost-Effectiveness and Option for Reform" Discussion paper no 317 World Bank, 1996

as a viable alternative way of organizing labour have been presented as follows: (i) it facilitates the elimination of the hierarchy of middlemen in labour employment and maximizes the returns to earthwork operations for those who actually carry out the work; (ii) it helps in the empowerment of poor men and women. Through this system, the labourers gain access to social awareness as well as acquire technical competence and establish influence over working conditions. (iii) it helps them to cope with the local problems, get access to local resources and gain modest increase in bargaining power at the local level, and facilitates direct employment opportunity and fair wages⁶⁵.

The quality of work by the LCSs has been found comparable if not better than that of the contractors. They have proved capable of major embankment construction. They have also shown their potential ability to carry out construction of structures - making of culvert pipes, installation of pipe culverts. Yet the system is far from being perfect. Experience shows that most of the LCSs do not last after the period of a construction season. The large number of relatively small LCS contracts increase the extent and cost of site supervision work. At the same time, the situation of the LCSs vis-a-vis the contractor who remains the sole liable for quality work is not clear.

E. THE ROLE OF TRANSPORT INTERVENTIONS IN POVERTY ALLEVIATION

The case studies reviewed, have demonstrated that poverty alleviation is a complex process, and that success or failure cannot be attributed to one particular element of a programme. Nevertheless, transport interventions appear to have played a central role in the process of alleviating poverty or in improving the standard of living of the poor communities in the

⁶⁵ "Use of labour Contracting Societies in Rural Infrastructures" by Mohammad Faizullah Working paper for the Identification and Preparation of Second Rural Roads and Markets Improvement Project (RRMIMP - 2). May 1995

respective project areas.

This essentially means that transport interventions can be used as a policy instrument and an entry point for poverty alleviation. However, linkages between transport interventions and economic and social development are interrelated and interdependent. As a result, it is difficult to analyze in isolation, and hence, to quantify the specific impact of any one component within an integrated project or programme.

The impact of transport infrastructure interventions on poverty reduction may be direct, indirect, or a combination of both, depending upon the type of infrastructure and services provided through the programme.

The impact of a rural transport intervention is direct when the provision of improved rural transport infrastructure is directly targeted towards the transport needs of the low-income groups or has been used to provide them with income earning opportunities. This impact is more visible where the programme serves a poverty stricken area where the majority of the beneficiaries are below the poverty line.

On the other hand, the impact of a transport intervention is indirect when the provision of improved rural transport infrastructure contributes to the reduction of rural poverty by providing easier access and cheaper transport. Consequently, there are two or more steps between the initial intervention and the ultimate beneficiaries i.e. the poorest of poor.

In the case of economic impact, a transport intervention may make trading more efficient, thereby contributing to increased agricultural output and rural development. In this process, the income levels of the villagers would be raised, which will consequently improve the quality of life of those people. In the case of social and welfare impacts, an intervention may improve access to health, education and other services, which will in turn provide the villagers with better opportunities for

improving their standard of living.

The underlying assumption of an indirect intervention is that the increase in rural income will also trickle down to the poor. The extent to which benefits of the intervention do "trickle down" to the poor, however, depends on the extent to which the poor are involved in the process, and how much transport is used respectively: (i) by the poor themselves; (ii) for delivery of basic social services; and (iii) for obtaining productive assets for the poor.

The cases reviewed demonstrate various situations of direct and indirect impacts of transport investments on poverty reduction in rural areas. In Bangladesh, the underlying hypothesis was of indirect impact i.e. the gains from economic growth ultimately bring benefits to the population as a whole, and the poor in particular, in the form of jobs and other economic and social opportunities. A direct impact on the poor was envisaged in Indonesia by empowering the villagers in targeted villages and addressing their transport needs. Infrastructure interventions under the programme in Pakistan were geared to have an indirect impact on community productivity and family welfare through improved production-support investments and increased self-reliance. In the Philippines, the construction and maintenance of rural transport infrastructure were perceived to have a direct impact on generating employment opportunities and on raising income levels of the poor communities. The programme in Nepal was structured to have a combined impact through generation of employment opportunities as well as improvements in trade and commerce.

However, project evaluations, particularly cost-benefit analyses which rely on the quantification of a restricted set of cost and benefit factors, namely those to which some value can be given, cannot provide a full understanding of the impact of transport on the quality of life of the rural poor. Essentially, it is necessary to identify all the social and economic changes which take place during the process of undertaking the interventions,

and where feasible, to measure the differential impact of each of those on the different groups of beneficiaries. The impact analysis should incorporate such factors as self-reliance of individuals and communities, their attitudes and behaviour, particularly the changes in the social and economic status of women, the decision-making patterns of the households, and of other poverty-related indicators of quantifiable as well as unquantifiable costs and benefits.

In examining the major achievements and impact of the selected projects/programmes under the present study, it was felt that there was an urgent need to improve and extend the existing guidelines on evaluation and selection of infrastructural interventions aimed at poverty alleviation in rural areas. The guidelines should identify the specific problems associated with a comprehensive measurement of impacts, benefits and costs of infrastructure projects that are designed to serve local communities and those that are related to poverty alleviation programmes in a rural setting.

F. SUCCESS FACTORS IN USING INFRASTRUCTURE AS ENTRY POINT TO POVERTY ALLEVIATION

The two key components of the strategies adopted for poverty alleviation in the case studies reviewed, were: (i) community participation in infrastructure planning and implementation; and (ii) some form of decentralization coupled with capacity building.

In the light of the experiences gained from the review of the case studies, policy planners and decision-makers may wish to take into consideration the following success criteria while planning transport interventions aimed at rural poverty alleviation:

(a) Participatory planning benefits the poor

The success of a rural infrastructure programme is directly linked with the involvement of the intended beneficiaries. By

organizing the communities and by involving them in planning and design, they can better articulate their priority needs and ensure that the programme addresses those needs adequately.

(b) Participatory implementation ensures flexibility, ownership and sustainability

Involvement of communities inevitably implies greater flexibility with respect to both the process and the outcome. It is not a one-shot affair geared to physical investment carried out over a limited period of time. It is a process rather than a series of discrete stages which requires long-term commitment.

By constructing their own infrastructure, the communities build a sense of ownership, and commit themselves to undertake the maintenance, thereby ensuring its sustainability.

(c) Decentralized planning is responsive to people's needs

Local institutions are in a better position than the central government to become more responsive to local needs and priorities. They can play a positive role in developing effective rural infrastructure programmes. Moreover, local organizations can help arrange appropriate technical support i.e. access to engineering and project design, and managerial and administrative skills to the communities, to enable them to carry out their projects efficiently.

(d) Capacity building is crucial for effective and sustained participation

Building people's capacity for participation over time is more important than achieving specific acts or outcome of participation. Effective and sustained participation is a result of experience, skill, and positive reinforcement. A programme that takes participation seriously will be more concerned with establishing processes and realizing potentials than with "bean counting". This means that the monitoring and evaluation should

be linked with efforts to promote participatory development,⁶⁷ and with efforts to strengthen the planning and management capacity of the local institutions.

⁶⁷ "Participatory Development and the World Bank" Discussion paper no 183 The World Bank 1992