

Chapter 3

Planning and Implementation of Rural Roads at the Local Level - Case Studies from Four Districts

3.1 Introduction

Rural roads are planned, implemented and maintained by District Development Committees (DDCs) at the local level. As the DDCs are self-governing bodies, the actual process of planning and implementation followed at the local level varies among districts. Since 1995, when Village Development Committees (VDCs) also started to receive block grants from the central government, they followed the same procedures as the DDCs. This Chapter discusses the processes of planning, designing, approving, implementing, and maintaining the rural road projects followed at the DDC level. At the field level, these issues were studied in Baglung, Dhading, Kabhre, and Ilam districts. These districts were selected based on the criteria listed below.

- Baglung district was selected because most of the area has no access to a market. The Asian Development Bank has recently approved a project for the development of rural roads to connect the interior parts of the district.
- Dhading district is a showcase of a successful experiment in building rural roads based on the LES approach. Apart from that, the district level planning mechanism is being strengthened through donor support.
- Kabhre and Ilam districts have fairly developed market economies based on export-led agricultural development.

The case study research method used at this level applied for collected data through several different mechanisms. Secondary level data/information on the number of projects and existing institutional process at different stages of rural road construction were obtained from district/village development committees and project files. Focussed interviews with some key officials in the districts were conducted and the researcher's own observations of the site area were also used to analyse the data/information.

3.2 Profile of the Four Districts under Study

3.2.1 Baglung District

Baglung is a district in the mid-hills, located in the Western Development Region of Nepal. The total land area is 1,784 square kilometres and the total population is 232,486 (1991). The average household size is 5.2 persons. The district is of a rectangular shape and is bordered in the east by Parbat, in the west by Rukum and Rolpa, in the north by Myagdi, and in the south by Pyuthan and Gulmi. Baglung, like most hill districts in Nepal, has a subsistence rural/agrarian economy. The main crops are maize, paddy, wheat, potatoes,

millet, and barley. The main commercial items produced are fruit and milk. Crafts from bamboo and cotton textiles are also made, but not in large quantities.

Until 1994, Baglung District was connected by mule trail from Syangja via Parbat District. Almost all household goods were purchased in Seti Dovan in Syangja District and carried by porter or mule caravan through Karki Neta via Kusma in Parbat District. There are airstrips at Balewa and Dhorpatan. The two road heads in Baglung District are Baglung Bazaar, the headquarters of the district in the extreme east, and Kharbang in the west. The first is accessed by the 68km long, all-weather black-topped Pokhara-Baglung Highway (completed in 1994), of which four km is in Baglung District, and the second is accessed by a self-help, dry-weather earth road (can be used by tractors) from Ridi in Gulmi District.

Almost all parts of Baglung District are linked by mule trails. There are several main trails in Baglung District such as the Baglung - Galkot - Dhorpatan trail, Baglung - Myagdi trail, Baglung - Kusmisera trail and so on. There are over 450 suspension bridges that connect the villages in the interior. Baglung District is an example of a success story in construction of low-cost suspension bridges using local technology and people's participation. It is known as the 'district of suspension bridges'. Mules and porters are the main methods of transporting goods in Baglung District. The main rural road network in Baglung District is shown in Map 2.

The Rural Road Programme

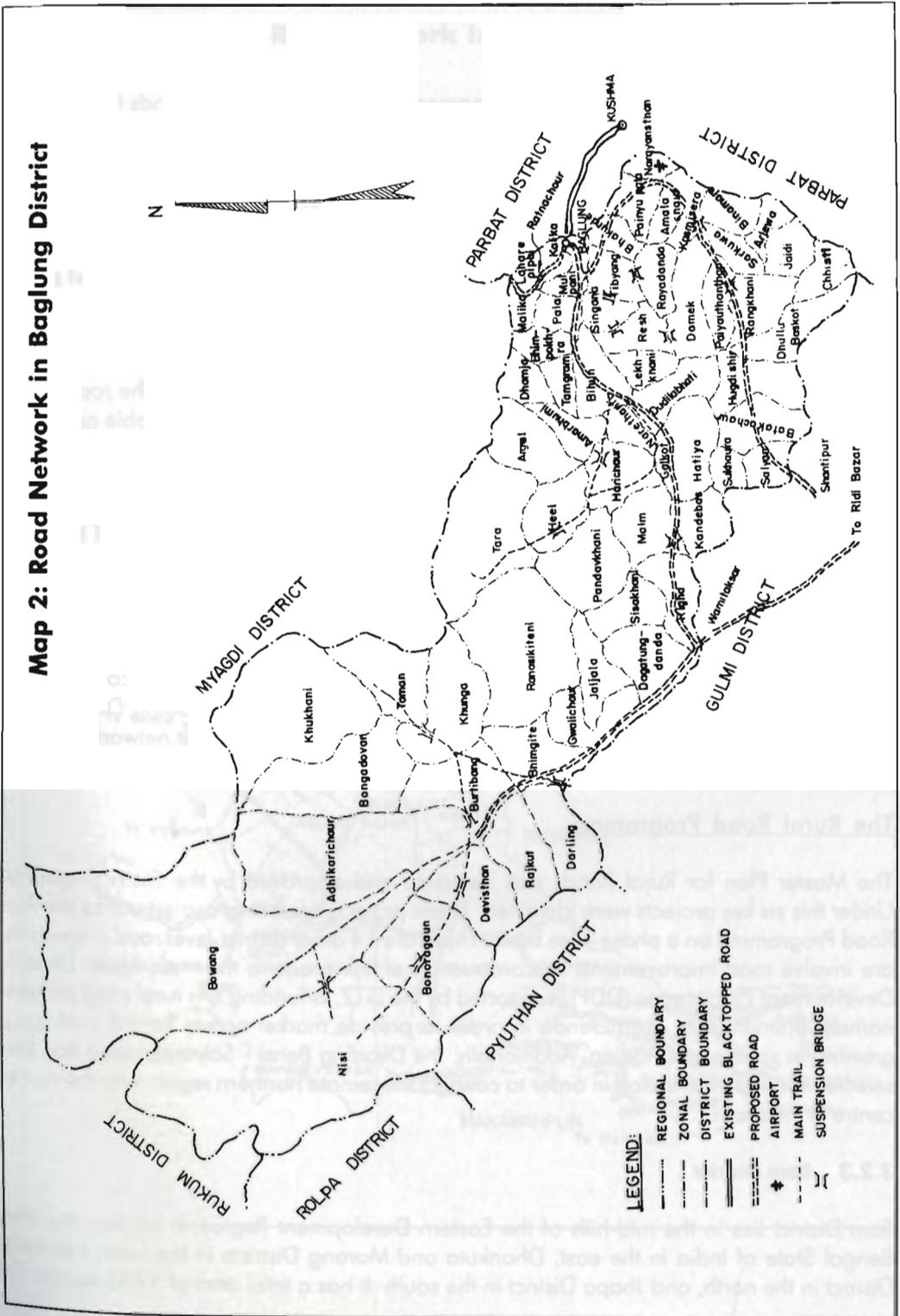
This programme in Baglung District includes motorable roads, mule trails, and suspension bridges, which are part of the DDC programme activities. Previously, the MLD provided support for mule trail improvement and suspension bridges under other programmes. Since 1993, a separate budget under the Rural Road Programme was allocated by the MLD, and through this a number of rural motorable road projects began. Interestingly, while the money was allocated for the rural road project, some portion was actually spent to gravel and black-top the road in Baglung Bazaar. For example, in 1994, a sum of Rs 300,000 was allocated for the Baglung - Galkot Road Project, of which a sum of Rs 200,000 was actually spent on black-topping the road from the DDC Office to the SP's Chowk and 100,000 for gravelling the road from the SP's Chowk to the Campus Gate in Baglung Bazaar (UNDP 1994).

Recently, the Asian Development Bank has agreed to provide loan assistance to construct fair-weather motorable roads in Baglung, Tanahu, and Kabhre districts. The following projects have been identified for implementation in Baglung District.

- Baglung - Galkot - Kharbang
- Kharbang - Burtibang - Dhorpatan
- Baglung - Kusmisera - Shantipur

The road projects will use labour-intensive methods for road construction with minimum use of heavy equipment and explosives. The low-cost, environmentally friendly, and self help (LES) approach to rural road construction, which was developed in Palpa and Dhading districts, will be applied in the three projects proposed. For developing the roads, the exist-

Map 2: Road Network in Baglung District



ing trail will be extended and the existing alignment will be followed to the greatest extent possible (ADB 1995).

3.2.2 *Dhading District*

Dhading District lies in the Central Development Region of Nepal. It extends from the mid-hill region to the northern high mountain region. The total area of Dhading District is 1,926 sq. km., 35,291 ha (18% of the total land area) of which make up the agricultural land. The district borders on Nuwakot in the east, Rasuwa and the Tibetan Autonomous Region of China on the north, Gorkha on the west, and Chitwan and Makawanpur on the south.

Apart from a few, low fertile flat areas, such as Dhading Bensi and Salyantar, most parts of Dhading District are characterised as food deficit hill terrain. The district has a total population of 278,068 (1991). The average family size is 5.4 persons. Of the total of 49,438 households, 19,022 (38%) produce sufficient food for the whole year. Significant numbers of households supplement their income by working as wage labourers on the roadsides or in cities such as Kathmandu and Pokhara and in the *Terai* region. Considerable numbers of people, in some villages at least one from every family, work in India or abroad as porters, hotel boys, watchmen, or soldiers.

The southern part of Dhading District is accessible by road. Two major national highways; namely, Prithvi Highway and Tribhuvan Highway, cut across the District. Naubise to Jogimara on the Prithvi Highway (68km) and Nagdhunga to Sopyang (Sat Ghumti) on the Tribhuvan Highway (40km) fall in Dhading District. In addition, there is a gravel road from Malekhu to Dhading Bensi (20km). Additionally, two other roads, one from Dhading Bensi to Salyantar Khahare (42km) and an other from Bhimdhunga to Lamidanda (22km) were constructed by the Dhading Development Project (DDP). In the northern part of Dhading District, mule trails, along with suspension bridges over rivers, are the main transport network. The road network of Dhading District is shown in Map 3.

The Rural Road Programme

The Master Plan for Rural Roads was prepared and approved by the District Assembly. Under this six key projects were identified. These projects are being carried out by the Rural Road Programme on a phase-wise basis. There are 14 other district-level road projects that are involve road improvements or construction of link roads to the main road. Dhading Development Programme (DDP), supported by the GTZ, is funding two rural road projects; namely, Bhimdhunga - Lamidanda in order to provide market access for the cash crops growing in southeast Dhading. Additionally, the Dhading Bensi - Salyantar road has been selected for implementation in order to connect the remote northern region with the market centre in the south.

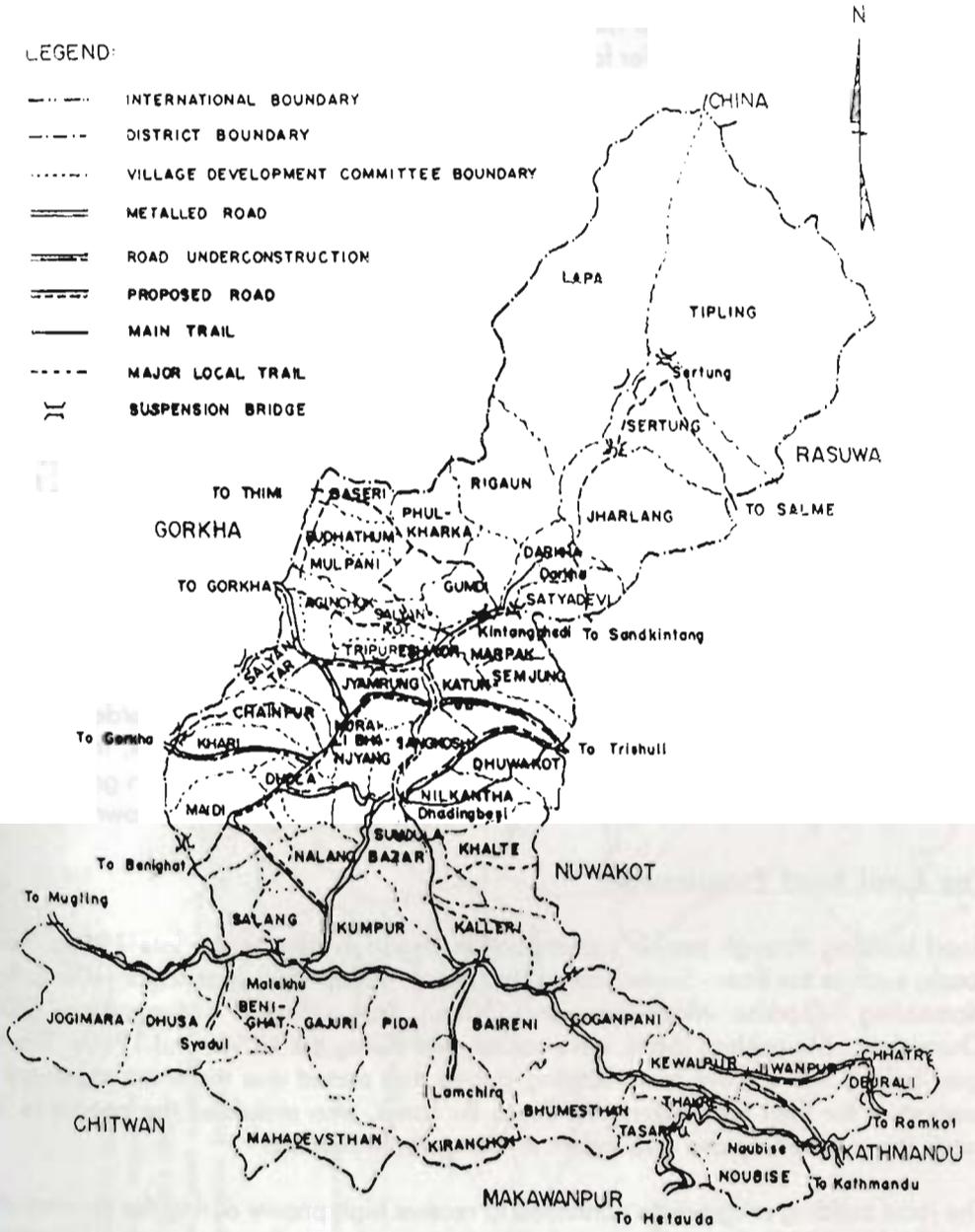
3.2.3 *Ilam District*

Ilam District lies in the mid-hills of the Eastern Development Region. It borders the West Bengal State of India in the east, Dhankuta and Morang Districts in the west, Panchthar District in the north, and Jhapa District in the south. It has a total area of 1703 sq.km. The

Map 3: Road Network in Dhading District

LEGEND:

- — — — — INTERNATIONAL BOUNDARY
- - - - - DISTRICT BOUNDARY
- VILLAGE DEVELOPMENT COMMITTEE BOUNDARY
- ==== METALLED ROAD
- ==== ROAD UNDERCONSTRUCTION
- ==== PROPOSED ROAD
- MAIN TRAIL
- - - - - MAJOR LOCAL TRAIL
- () SUSPENSION BRIDGE



existence of four main rivers, namely, Jogmai, Mai, Puwamai, and Dewmai, has given the name of *Char Khola* (four rivers) to Ilam District. According to the 1991 Census, Ilam has a total population of 229,214. The average household size is 5.5 persons. Over 95 per cent of the people are dependent on agriculture.

Out of the total land area of 104,263 hectare, 72,943 hectares (70%) are arable. A total of 10,330 hectares (10%) is under forest (Nepal Rastra Bank 1995). Although Ilam District is said to be famous for the five 'A's'; viz., *Amlisho* (broom flower), *Aalu* (potato), *Aduwa* (ginger), *Alaichi* (cardamom), and *Aolan* (milk), it is also famous for tea production. There are six organized tea estates, of which four are under the Nepal Tea Development Corporation (NTDC) and two are in the private sector. In addition, several small-scale tea plantations are coming up in a number of VDCs.

The main market centres of Ilam District are Ilam *Bazaar*, Pashupatinagar, Fikkal, Mangalbare, Aitabare, Sukrabare, Chisapani, Gorkhe, Manebhanjyang, Nayabazar, Rabi, and Jamuna *Bazaar*. Market centres are coming up along the road in places Harkate, Tinghare, Godak, Biblyate, Nepaltar, Rakse, and Ranke. Several link roads, mule trails, and tracks connected to the road heads from the surrounding villages have, in fact, increased the impact area of the road. Weekly market day is a typical feature of most of the *Bazaar(s)*, where people from the adjoining VDCs come to sell their products and buy necessary household items. Many of the *Bazaar(s)*, such as Sukrabare, Aitabare, and so on, are named after the weekly market days.

Ilam District has been linked to a motorable road for 40 years. Now the north-south Mechi Highway cuts across Ilam District in the middle, and it provides road linkages to Jhapa District in the southern *Terai* region and Taplejung District in the northern Himalayan region. A link road from Fikkal to Pashupatinagar provides road access to the border checkpoint with India. In addition, several VDCs are linked to rural roads. At present, the total road network in Ilam District is 360km, of which 64km are black-topped, 49km gravelled, and 247km are fair-weather rural road. The road network of Ilam District is shown in Map 4.

The Rural Road Programme

Road building through people's participation began in Ilam in the late 1950s. Several roads, such as the Ilam - Sanischare (45km), Ilam - Fikkal - Pashupatinagar (40km), Ilam - Namsaling - Gorkhe - Manebhanjyang (50km), Ilam - Phutuk - Mangalbare (20km), Chureghati - Maipokhari (6km), were constructed during the 1950s and 1960s. The main spirit behind the massive road building during that period was the encouragement and support of the then *Badhakim*, Mr. Santa Bir Lama, who mobilised the people to build roads (as reported by one respondent in Mangalbare *Bazaar*).

The road building programme continued to receive high priority during the *Panchayat* period (1960 - 1990). Several earlier alignments were changed and new roads constructed. Table 3.1 gives some important road projects that have changed/cancelled the old alignments.

Map 4: Road Network in Ilam District

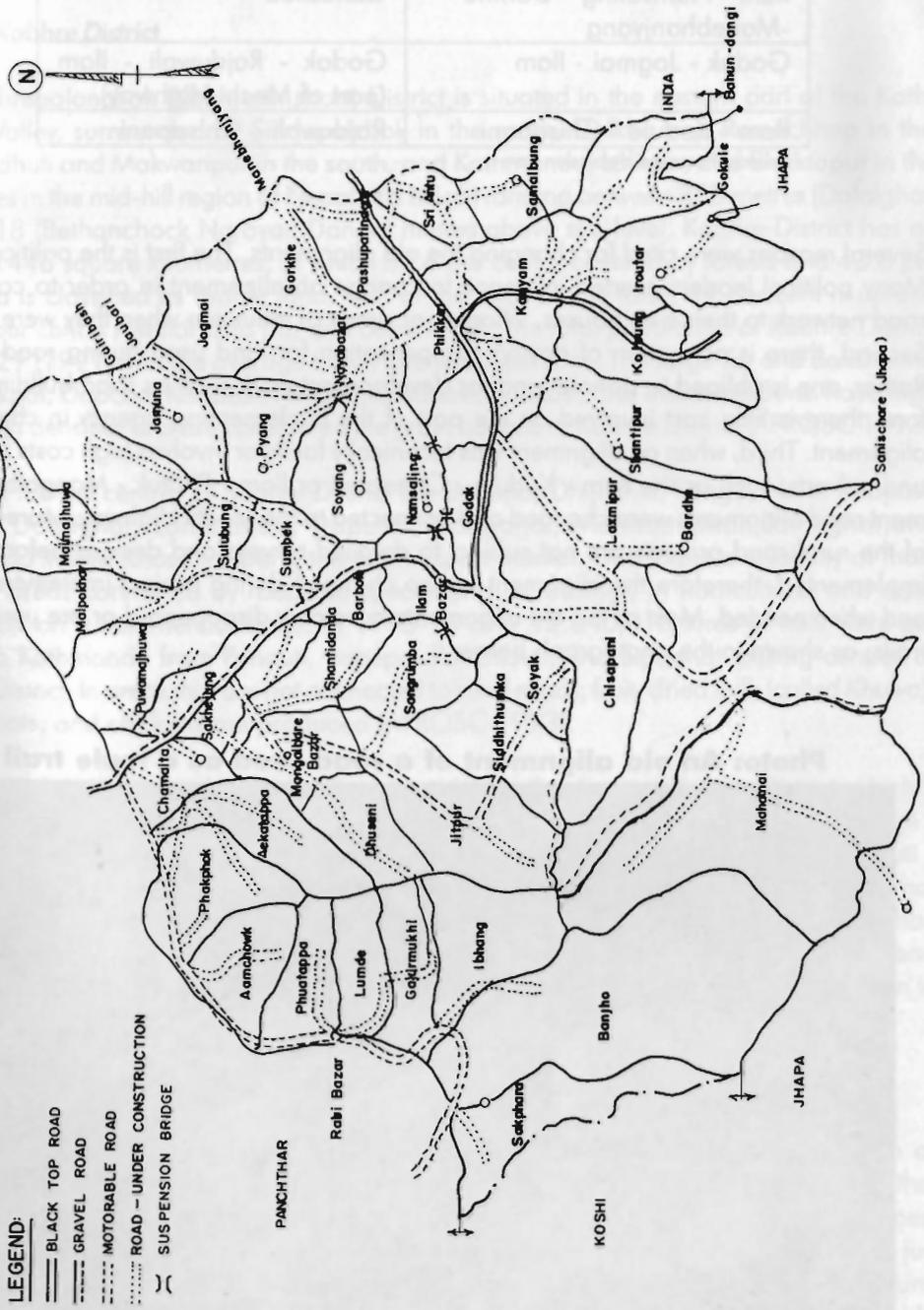


Table 3.1: Alignment Changes in Rural Roads in Ilam

Old alignment	New alignment
Ilam - Phutuk - Mangalbare	Nepaltar - Mangalbare
Ilam - Namsaling - Gorkhe -Manebhanjyang	Cancelled
Godak - Jogmai - Ilam	Godak - Rajduwali - Ilam (part of Mechi Highway)
Ilam - Kudule - Chisapani	Rajduwali - Chisapani

Source: Focussed discussion Ilam

Several reasons were cited for changing the old alignments. The first is the political reason. Many political leaders exerted influence to change an alignment in order to connect the road network to their own houses, villages, or areas of influence when they were in power. Second, there is no system of paying compensation for land used during road building. Rather, one is obliged to donate land for development work such as road building. Therefore, there is little cost involved on the part of the implementing agency in changing an alignment. Third, when an alignment was technically faulty or involves high costs for bridges and culverts, such as the Ilam - Kudule - Chisapani or Ilam - Phutuk - Mangalbare alignment road alignments were changed and connected to the Mechi Highway. Moreover, most of the rural road projects are not subject to detailed surveys and designs before they are implemented, therefore the alignment is also changed during project implementation, as and when needed. Most of the old alignments have now disappeared or are used as mule trails, as shown in the photograph below.

Photo: An old alignment of a road used as a mule trail



Since 1993, a separate budget has been provided by the Rural Road Programme of the Ministry of Local Development (MLD). Rural roads' projects are identified, along with other rural development activities, and approved by the DDCs and implemented through Users' Committees.

3.2.4 Kabhre District

The Kabhrepalanchok (Kabhre in short) District is situated in the eastern part of the Kathmandu Valley, surrounded by Sindupalchok in the north, Dolkha and Ramechhap in the east, Sindhuli and Makwanpur in the south, and Kathmandu, Lalitpur, and Bhaktapur in the west. It lies in the mid-hill region of Nepal at a height ranging between 350 metres (Dolalghat) and 3,018 (Bethanchok Narayan Danda) metres above sea level. Kabhre District has an area of 1446 square kilometres, of which 52.6 per cent is covered by forests and 43.8 per cent area is classified as arable land. Out of the total arable land, 64 per cent is upland and 36 per cent is low flat land (*Tar and Bensi* land). The total population of Kabhre District is 324,329 (1991) and the average family size is 5.7 persons. The large *Tar and Bensi* lands in Panchkhal, Dapcha, Khopasi, Panauti, Kusadevi, Sunkosi, and Indrawati Bensi have high population densities and are considered the grain baskets of Kabhre District (APROSC 1993).

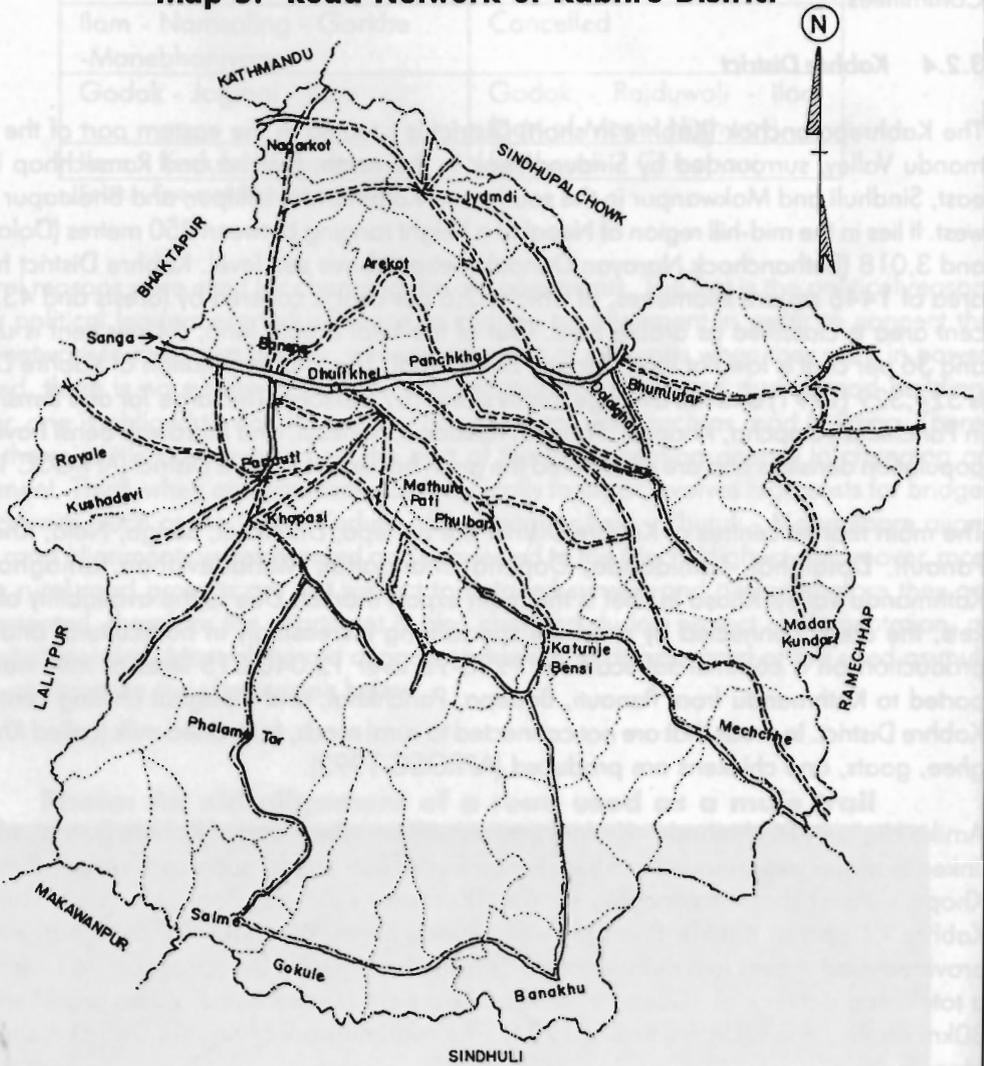
The main market centres of Kabhre District are Banepa, Dhulikhel, Sanga, Nala, Khopasi, Panauti, Dolalghat, Lamidanda, Dapcha, Mangaltar, Mahadevsthan, Tamaghat, and Kathmandu Valley. Khasa in Tibet is the main export market. Due to the availability of markets, the areas connected by road are specialising increasingly in horticultural and dairy production on a commercial scale. In 1995-96 over 12,040,015 litres of milk were exported to Kathmandu from Panauti, Banepa, Panchkhal, and Sipaghat chilling centres of Kabhre District. In areas that are not connected to rural roads, fruit, dried milk (called *Khuwa*), ghee, goats, and chickens are produced (APROSC 1993).

Arniko Highway (Kathmandu - Kodari) intersects the northern part of Kabhre District, which is linked with the main market centres. A number of link roads, such as Banepa - Panauti - Khopasi, Panchkhal - Palanchok, Panauti - Kusadevi - Rayale, Banepa - Nala, Panauti - Kabhre - Dapcha, Kabhre Bhanjyng - Bhakunde Bensi, Panchkhal - Sipaghat, etc, has provided road access to a number of VDCs from the highway. By 1993, Kabhre District had a total road network of 108km, of which 58km were black-topped, 20km gravelled, and 30km earthen road (District Profile 1994). The road network of Kabhre District is shown in Map 5.

The Rural Road Programme

In Kabhre District rural roads are defined as all kinds of access to rural areas such as motorable roads, trails, and suspension bridges. This definition is based on the fact that each and every village needs access to the motorable road but, due to the steep slopes, rocks, and rivers, roads are not feasible everywhere. Improvement of the existing trail or just a suspension bridge over the river can link such villages with the road. Therefore the 'Rural Road Programme' includes activities such as construction and improvement of motorable roads, trails, and suspension bridges.

Map 5: Road Network of Kabhre District



LEGEND:

- DISTRICT BOUNDARY
- V. D. C. BOUNDARY
- ==== BLACK TOPPED ROAD
- ==||== GRAVEL & EARTHEN ROAD
- ||--- PROPOSED ROAD
-) (SUSPENSION BRIDGE

The Ministry of Local Development (MLD) has been providing grant assistance from the Rural Road Programme (RRP) to the DDC to construct and improve the rural road network since 1993. Kabhre District, however, used the grant assistance in 1993 and 1994 to purchase a bulldozer. Apart from the RRP, a large number of rural road projects was implemented during 1995 and 1996 under the 'Build Your Own Village Programme' and 'Village Development and Self Reliance Programme', each VDC was provided a grant assistance of between rupees three and five hundred thousand for the respective programmes. Besides, there is a number of rural road projects under other programmes such as the community forestry programme, constituency development programme, and so on.

3.3 Planning and Implementation of Rural Road Projects

3.3.1 Planning

According to the VDC\DDC Act 1992, all local development projects are planned at the local level. Local development projects are defined as those that increase the livelihoods, incomes, and employment of the people; increase agricultural production; use local resources and skills; and provide direct benefits to vulnerable groups and backward communities (HMG\N 1992). Project identification is initiated at ward levels. They are collected and used to prepare a village development plan at the VDC level.

In order to prepare the district development plan, all district-level projects recommended by VDCs are discussed at the *llaka* workshop, which is attended by all *llaka** level VDC Chairpersons and Vice-Chairpersons, DDC *llaka* members, and representatives from sectoral agencies at the district level. Projects approved at the *llaka* Workshop are sent to the Planning Committees at the district level for technical scrutiny. The appropriate Planning Committee (four subject-wise Planning Committees, e.g., agriculture; infrastructure, education, and health) submits the list of approved projects to the DDC for inclusion in the annual programme. The DDC prepares the annual programme and budget and submits these to the District Assembly for final approval. A summary of the planning process, as stipulated in the VDC\DDC Act 1992, is summarised by Table 3.2 below.

The actual planning processes in four districts were as follows. In Baglung and Kabhre Districts, which are covered by the UNDP-supported Participatory District Development Programme (PDDP), the aim has been to institutionalise the decentralisation of the planned development process at the grass roots' level. The local level development plan, as mentioned above, is followed by several innovative methods for planning projects at the local level. For example, in order to get more and more projects identified at the beneficiary level, a 'demand form' is available from the Ward Committee on which anybody can propose a project by giving certain information. The nine Ward Committees collect the demand forms and screen out at the meeting of the Advisory Council. Feasible projects are included in the annual programme by VDC.

In both Baglung and Kabhre districts, while following the planning process, a number of problems arose. Firstly, in the *llaka* Workshop very few representatives from the line agencies

* There are nine *llakas* in a district, and they are used as political constituencies for DDC members and also for planning and review of projects at sub-district level.

Table 3.2: Local-level Planning Process

Level	Committees	Functions
VDC	<ul style="list-style-type: none"> • Ward Committees • VDC • Village Assembly 	<ul style="list-style-type: none"> • Identification at Ward Committee level • Collected, plan collated prepared at VDC level • Final approval by Village Assembly
<i>llaka</i>	<i>llaka</i> workshop	Discuss, integrate & prioritise district-level projects
District	<ul style="list-style-type: none"> • 4 subject-wise Planning Committees • DDC • District Assembly 	<ul style="list-style-type: none"> • Technical scrutiny by Planning Committees • Drafting of District Development Plan by DDC • Final approval by District Assembly

participated. The main reason for this was that the district-level line agencies felt that there was no point in discussing projects at the *llaka* level when they were implementing targets set by their parent organizations at the centre. Secondly, even when the District Assembly finally approved the projects, they were again sent to the respective Ministries for inclusion in the annual programme and budget. In many cases, projects were changed. Finally, in the case of projects funded by the DDC itself, the fund allocated by the DDC was too small. A large portion was to be borne through local contributions. Therefore, professionals were frustrated as no quality work could be expected from the allocated money.

In the case of Dhading District, with the support of the Dhading Development Project (DDP), the Master Plan for District Roads was prepared and approved by the District Assembly. Large rural road projects are being constructed based on this Master Plan. Other rural road projects, such as road improvements, construction of link roads, and so on, have been identified at VDC level. If it is a village-level project, which means having a low budget and covering only one VDC, it is approved by the VDC. If it is a district-level project, i.e., having a high budget and covering more than one VDC, the project idea is sent to the DDC for inclusion in the annual programme. All project ideas are collected and screened by the Planning Committee and then submitted to the DDC and, finally, to the District Assembly for approval.

But, in the case of Ilam District, the system followed is different. The VDC Chairperson directly sends requests for projects to the DDC Chairperson. Though the request is made on the VDC's official letterhead, it is usually not discussed and approved at VDC level. Sometimes a group of 'project beneficiaries' also submit a request to the DDC Chairperson. At the district level, no Planning Committees have met during the last few years for project screening. Projects are approved in two ways. One, the DDC Chairperson directly approves a project, called *Tok Adesh*, which is later submitted to the DDC's regular meeting for endorsement. Two, the regular DDC meeting approves a project on a case-to-case basis. All these projects, most of which would have reached the implementation stage by that time, are compiled and submitted to the District Assembly for endorsement. The District Assembly usually meets during the winter.

In fact, DDCs and VDCs plan, implement, and maintain rural works' programmes, which include improvement of mule trails and tracks, construction and maintenance of suspension\wooden bridges, and so on ever since the *Panchayat* period (1960-90). There are also numerous examples of construction and maintenance of rural motor roads, such as in Ilam, through the mobilisation of voluntary labour. After 1993, when the district road programme was handed over to the Ministry of Local Development (MLD) at the central level, in effect the DDCs and VDCs became the implementing agencies at local level.

3.3.2 Project Design

There is no prescribed design standard for rural road projects from the MLD. When the DDC technicians have to prepare project design and cost estimates, they follow some of the basic norms for feeder road standards of the DOR. In all four districts, the project designs are made after the final approval of the project by the DDC\VDC. In almost all VDCs, there is no technical manpower, therefore DDC have to provide technical support to all the village-level projects as well. Since the DDCs do not have sufficient technical manpower to carry out technical survey and prepare project designs for a large number of rural development projects, including rural roads (Table 3.3), at least one visit is made by an overseer or a sub-overseer from the DDC to the project area. On the basis of an Abney level (clinometre) survey for gradient alignment and an estimation of earth cutting and structural works, a rough alignment sketch and a tentative estimate are prepared for administrative requirements (for disbursal of money for project implementation). If the alignment itself is not found feasible, then the project is sent back to the DDC\VDC for cancellation or change.

Table 3.3: Number of Projects and Available Technical Manpower in the Four DDCs in 1996

Item	Baglung	Dhading	Ilam	Kabhre
A. Number of Projects in the DDCs in 1996				
Total number of projects	198	152	171	176
Number of rural roads	96	39	35	52
Total	294	191	206	228
B. Technical manpower in the DDC				
Engineer	2	1	1	3
Overseer	8	9	2	6
Sub-overseer	4	3	3	9
Mechanic	2	-	-	-
Water Supply Technician	1	-	-	-
Total	17	13	6	18

Source: DDC files

Note:

1. Rural road projects include motorable roads, trails and tracks, and suspension bridges.
2. In Baglung and Kabhre Districts, one engineer and two overseers each are for the ADB-supported rural road project; its office is located outside the DDC Office.
3. In addition to the above projects, the DDC technicians have to provide some technical support to village-level projects. The number of village-level projects was 577 in Baglung, 275 in Dhading, 396 in Ilam, and 651 in Kabhre in 1996

In Dhading District, there are two types of project designs, viz. one is for the Dhading Bensi - Salyantar Road Project which was designed as a part of the GTZ-supported Dhading Development Project (DDP) by a Kathmandu based consulting firm. The design standard was based on the LES approach, which was discussed in Section 2.7.2. Two, for other ongoing rural road projects of the DDC, in which the preliminary alignment survey and cost estimate, which was made during the preparation of the Master Plan, is followed. A portion from the Master Plan is selected by the DDC depending on the availability of money, the alignment and grading is fixed by Abney level and the approximate quantity is calculated by an eye survey based on the slope and rock conditions. Due to the lack of technical manpower, no cross-sectional measurement is carried out. The exact quantity is calculated while preparing the running bill.

Therefore, even in a district where the LES approach is being successfully carried out, the methods and techniques have not been used in other regular projects of the DDC. One of the problems identified in Dhading District was that, for technical design and supervision, in fact in all uses LES in both Palpa and Dhading Districts, Kathmandu-based private consulting firms were used. The same approach has been proposed for the ADB-supported Rural Infrastructure Development Project in Baglung, Tanahu, and Kabhre districts. While the use of private consulting firms enabled the Dhading Bensi -Salyantar Project to use several techniques and methods by deploying various types of technical personnel as and when needed, this practice overlooked the strengthening of local institutions for sustainable road development at the local level. Consequently, it has created a situation in which, on the one hand, more and more LES type road projects are required at the district level but, on the other hand, the expertise, experience, and credibility are available only with a few consulting firms in Kathmandu.

Moreover, in all four districts, except for donor supported projects such as the one in the Dhading Bensi - Salyantar Road Project, grant allocations for rural road projects from the VDC/DDC are not based on the cost estimate of a project. Most projects are under-financed. It is only assumed that the gap between the project cost estimate and the grant allocation would be filled by people's contributions in terms of free labour. One of the many reasons for under-financing a project is the lack of technical designs and cost estimates. Most of the projects are based on Abney level or eye surveys conducted in one visit by a junior technician. Had the total project been designed, a portion could have been taken up in a phase-wise manner. However, due to the absence of technical guidelines and supervision, the limited available resources, including the free labour of many poor households, are used for earth excavation, the widely-known method of constructing a road, which damages the environment rather than doing any good to the project and the people around it. Even then, project design and cost estimate are essential administrative requirements for project implementation.

In the recently (1996) drafted Decentralisation and Local Self Government Policy of HMG/N, a recommendation has been made to reorganize several technical units located at the district level into one engineering office called the District Technical Office (DTO). The DTO can have a number of desks for different types of project. If all technical staff and equipment scattered throughout several offices are collected into one office, better engineering services

can be provided to local-level projects, including rural roads. At the same time, if donor supported projects also used this office for technical design and supervision, perhaps, it would gain expertise and experience in handling local-level projects in a sustainable manner.

3.3.3 Implementation

In all four districts, rural road projects are implemented through the users' committees. After approval of a project, the chief executive of DDC called the Local Development Officer (LDO) writes to the VDC (or VDCs if it covers more than one VDC) to form a users' committee for project implementation. The VDC calls a meeting of 'project beneficiaries' for the formation of a project users' committee. If a project covers more than one VDC, a joint meeting is held. The DDC is also represented in the meeting. After formation of the users' committee, the chairperson and the secretary of the Committee are invited to sign the project agreement.

In the agreement, the total project cost estimate and the actual allocation for the year are mentioned. For road projects under the Rural Road Programme, no advance money is given in Dhading and Ilam districts, whereas in Kabhre District up to 50 per cent and Baglung District up to 75 per cent advance is given after signing the agreement. In Dhading and Ilam districts, the running bill is reimbursed when it is checked by the DDC technician and approved by the LDO. Usually, a running bill is approved and reimbursed in from 15 to 30 days' time.

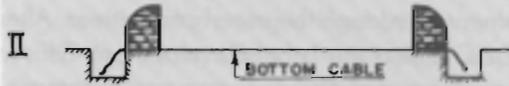
For the construction of suspension bridges there is an interesting case in Baglung District in which the use of indigenous technology, skilled labourers for transportation and construction, and clear guidelines for disbursement of money and materials is well developed. Baglung District has developed an indigenous technology for low-cost, cementless suspension bridges (Box 4). The maximum length of a low-cost suspension bridge is 100 feet. The DDC, under the BBLL programme, provides cables and other parts. The construction is done through the users' committee. For construction of a new bridge, the standard DDC allocation is Rs 250 per cu.ft. for stone work, timber planks, and wages for skilled workers. All unskilled work such as transporting parts to the project site, stone collection, earth work, and so on are carried out through people's participation when repairing suspension bridges, the standard allocation from the DDC is Rs 125 per sq. ft. to a maximum amount of Rs 12,500, which is used for replacing timber planks, buying nails, and paying skilled workers.

In other districts, suspension bridges are constructed following the BBLL manual. A users' committee is formed by the VDCs, connected by the bridge, which is approved by the DDC. All materials for suspension bridges are provided through the BBLL programme. A lump sum is provided by the DDC for construction materials and skilled labour, while the respective VDCs contribute unskilled labour and local materials. Fifty per cent of the DDC contribution is provided in advance once the project agreement is signed, while the remaining fifty per cent is given after project completion. Many of the suspension bridges have remained incomplete because a large portion of the contribution has to be borne by the local community. Large suspension bridges on the main trails are constructed through contractors.

Box 4: Cement-less Technology for Suspension Bridges



DRY MASONARY ABUTMENT IS PREPARED



BOTTOM CABLE IS LAID



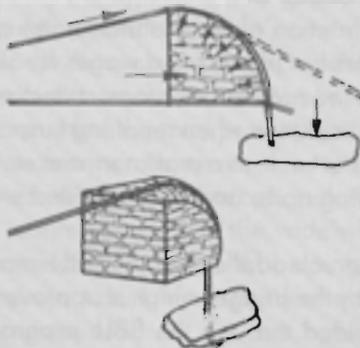
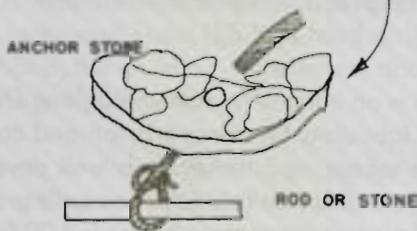
TOP CABLE IS LAID



ANCHOR STONE IS LAID



DEAD LOAD (STONE - RUBBLE) IS FILLED IN



1. ORDINARILY CEMENT IS USED TO SECURE THE ANCHORAGE AND TO STRENGTHEN THE ABUTMENT. THE BAGLUNG BRIDGE USES STONE WEIGHT FOR ANCHORAGE AND CABLE STRESSES FOR ABUTMENT CONSOLIDATION.

2. DIRECTION OF CONTACT AND CONSEQUENTLY LOAD DISTRIBUTION PATTERN ASSISTS THE CONSOLIDATION OF THE ABUTMENT MASONARY.

3. WITH THE ENLARGED CONTACT OF THE CABLE ALONG THE SHAPE OF THE ABUTMENT, A BETTER LOAD DISTRIBUTION IS ACHIEVED.

4. THE SHAPE OF THE ABUTMENT IS THAT OF A QUARTER CIRCLE BECAUSE SUCH A SHAPE SERVES TO CHANGE THE DIRECTION OF FORCES FROM INCLINED TO VERTICAL. THE VERTICALLY TRANSMITTED LOAD THERE AFTER IS COUNTERED BY GRAVITY OF THE DEAD LOAD PLACED OVER THE ANCHOR STONE.

-Sagar Prasai, Architect

Box 4: Dhading Transport Union

The Union has 40 general members. A majority of them are bus owners. It has a Working Committee of nine members. The Union charges an annual fee of Rs 101 for general membership. For registration to ply the Dhading route, the Union also charges Rs 6,000 for new and Rs 8,000 for an old bus. After registration, the Union includes the bus in the dial system, gives space for ticketing at the counter (with a fee of Rs 150 in Dhading and Rs 50 in Kathmandu per trip), provides necessary support in case of an accident, and acts as a medium for collective bargain. The Union also tries to prevent buses without registration running the Dhading route. The Department of Transport Management in Kathmandu fixes the bus fare. For the Kathmandu - Dhading road, the fare is Rs 50, but the Union has added Rs 20, bringing it to Rs 70. The reasoning given by the Union is that most of the buses plying the Dhading route are mini-buses and the road is rough enough to justify fixing a similar fare as the one for highways. But it was reported that the Union is monopolising the route despite the high bus fare. For example, it has prevented other Transport Unions from running their vehicles on the Dhading road, therefore other Unions have not allowed it to keep an office in the Kathmandu Bus Park. Moreover, *Sajha Yatayat*, a corporate bus company which charges only Rs 50 for the Kathmandu - Dhading route, has to ply the route under police protection. But, in the case of the Dhading Bensi - Salyantar Road, a road that has not been approved by the Department of Transport Management, the transport owners have fixed the bus fare themselves at a much higher rate. The transport owners argue that, since the road has not been approved, and therefore accident insurance is not covered, they have to bear the risk of any and all eventualities. Similarly, the truck owners have fixed the rate for transporting goods at Rs 70 per quintal on the Dhading Bensi - Salyantar route, and this is much higher than the rate fixed by the DDC. But, by the same argument, the DDC freight rate is also not applied. The Union has also made some contributions to road maintenance and social welfare. Last year, the Union employed five full-time labourers for regular maintenance work on the Malekhu - Dhading Bensi Road. The Union, along with the Dhading Transport Union, Dhading DDC, and the Red Cross Society, purchased an ambulance and provided ambulance services for a few years. Unfortunately, last year the vehicle was completely damaged in an accident. Compensation from the insurance company has been claimed and a new ambulance will be bought.

3.3.4 Technical Supervision

The Technical Division of the DDC is responsible for providing technical backstopping to a large number of rural development projects. All four DDCs lack sufficient technical manpower to handle various types of projects scattered throughout the difficult hill terrain. The following Table shows the total number of projects and the available technical manpower in all four DDCs.

The job of DDC technicians includes supervision of ongoing projects, measurement and certification of running bills, certifying project completion, and also preparation of survey and cost estimates for new projects. In Baglung District, supervision of one project requires a journey of several days because of the inaccessibility of the interior region. Therefore, no

technician is spared for a particular project unless it is absolutely necessary. In all four districts, an informal arrangement within the technical division is made to depute technicians area-wise, to carry out work along the way in one trip. In the case of the Dhading Bensi - Salyantar Road, a private consulting firm based in Kathmandu was engaged to supervise the project. In addition, an Engineer Advisor and some additional technicians were hired by the DDP to assist the DDC.

Another problem of the Technical Division of Ilam DDC is that it lacked necessary technical equipment. During the period of our field survey (1996), the DDC had two Abney Levels, three drawing boards, and a few measuring tapes. That was all the equipment available for surveying and designing 206 local development projects — including 35 roads, suspension bridges, and trails (Table 3.2). In fact, all projects have a contingency budget of usually about five per cent of the total, and this could have been used for purchasing technical equipment. But, as the technical aspect is given low priority by political leaders, the contingency amount is usually spent on administrative items such as travelling and daily allowances, office management, and vehicle fuel.

At the VDC level, the government posted one Technical Assistant (TA), junior technical personnel with only six months' training, for each VDC in 1996. However, it was alleged by the DDC/VDC authorities that many of them did not have the minimum educational background, let alone the required level of technical training, to provide technical support. Many of them were said to be political workers of the then Minister for Local Development. In almost all VDCs in the four districts covered under this study, TAs were not allowed to come into the office by the VDC/DDC authorities throughout our field survey.

One way of solving the problem of the lack of technical manpower would be, as also mentioned in Section 3.3.2 above to merge all technical offices undertaking similar projects that have enough technical manpower and equipment, e.g., the DDC, District Water Supply Office, District Irrigation Office, District Housing and Town Development Office, and so on, into one District Technical Office (DTO), and this was recommended in the policy on Decentralisation and Local Self Government (1996). This arrangement would make optimal use of the available technical manpower at the district level and, at the same time, would provide better technical support to the projects at local level.

3.3.5 Financial Disbursement

Although the DDC technician prepares cost estimates for each rural road project, the budget allocation is not made on the basis of the cost estimate. A lump sum is allocated, depending on the number of projects and the size of the total, available budget in the DDC. But in the project agreement, the total cost of the project is mentioned against the allocation, giving an impression that the gap is to be met by people's contributions. Usually money is disbursed to the users' committee in three installments: the first installment is given as an advance after signing the agreement; the second installment is also given as an advance after submission of the running bill of the first installment; and the final installment is given after completion of the project. But, in the case of the Rural Road Programme of the MLD, the operational manual prohibits advancing project money, and only the expenditure incurred by the users' committee is reimbursed.

In some districts, the operational arrangements are different. For example, in Kabhre District, the first installment of the grant allocation, which is usually 50 per cent of the allocation, is disbursed after the agreement. This money is used to hire a bulldozer from the DDC and buy its fuel. The DDC charges Rs 10,000 per day as rent for the bulldozer while the Users' Committee has to buy the fuel. It was reported that, in Kabhre District the bulldozer had been used a great deal for building almost all the rural roads during the previous two years. For example, the DDC reported that the income from the bulldozer during 1996 was estimated at over Rs 2,000,000, even running at only 20 days per month on average.

In the case of Baglung District, up to 75 per cent of the money allocated is given in advance in the first installment after signing the agreement. This means that, in a large project, a huge amount of cash is given in advance to the Users' Committee. This was cited as one of the main reasons for the misuse of DDC allocations by the users' committee, which was reportedly quite high in the project under study. Moreover, with the presence of political leaders on the users' committee, there have been delays in project implementation. Pressure is applied to have the DDC approve expenditure accounts, whether they are correctly submitted or not, and political protection is given to wrong doers. When the project is completed, or the expenditure is made according to the project agreement, the users' committee submits the progress report and bills for expenditure to the LDO for accounting and to certify the completion of the project. The LDO sends a DDC technician to check the project and verify the accounts. Based on the technical report, the LDO submits its funding to the DDC to certify the completion of the project.

In Ilam, no advance money is given by the DDC after signing the agreement. When progress is made, the DDC technicians are invited to prepare the bills for running. These bills, which are approved and reimbursed by the DDC, are paid to labourers through their *Sardars* (group leaders). After distribution of the final bill, which means the completion of the project, the final bill is paid and the total expenditure on the project is made public in a general meeting organized by the users' committee.

In the donor supported Dhading Bensi - Salyantar Road Project, funds from the donor agency are channelled through the budgetary system of the Ministry of Local Development (MLD) and administered at the district level by the LDO. No advance is forwarded. Money is disbursed only to for work completed. The muster roll, prepared by the site supervisor and checked by the Project Construction Committee, is sent to the DDC every 15-30 days. The Accountant in the DDC checks and submits the accounts to the LDO for approval. Once the money is disbursed from the LDO, labourers are paid through their *Naike* (Group leader), and 25 per cent is deducted from their wages as a 'people's contribution'. Some problems related to the DDC are reported, e.g., delay in release of money in some months for wages because of delays in the disbursement of funds from the District Treasury, delays in-built in the financial management system of HMG\Nepal. During the field survey (October 1996), the DDC was awaiting a letter of authority from the MLD in order to release the year's budget from the District Treasury and pay two months' wages.

3.3.6 Maintenance

In all four districts, there is no inbuilt mechanism for road maintenance. There is no clear idea who owns the road: whether it is the DDC or the users' committee. In the case of the

Dhading Bensi - Salyantar Road, the DDC is regarded as the owner, because the DDC collects the toll tax and allocates money for road maintenance. Generally in all districts, as the road projects are continuous projects constructed on a phase-wise basis over several years, the construction budget itself is used to repair the damage incurred during the previous monsoon period. In other cases, the DDC allocates money for road maintenance as a separate project on a case-to-case basis. But there is no clear concept and arrangement for road maintenance.

However, in the case of the Dhading Bensi - Salyantar Road Project, the following road maintenance policy has been spelled out.

(a) The road is closed to traffic for three months from June\July to August\September in order to avoid damage during the monsoon season

(b) Heavy buses, trucks, and large tractors are not allowed to ply on the roads

(c) A toll tax is collected from all vehicles passing along this road. DDC has given a contract, in an open bidding, of Rs 151,000 for collecting toll tax for 1996. The present rate of toll tax is as follows:

Mini bus	-	Rs 80
Mini truck	-	Rs 100
Jeep	-	Rs 60
Car	-	Rs 40

(d) For routine maintenance, two labourers are required per kilometre for regular maintenance. However, during the field study it was reported that seven labourers under one *Naike* were working on a regular basis for a 20km portion of road that had been handed over to the DDC. Other labourers were engaged on an as-and-when-required basis.

(e) An agreement between the DDC and GTZ has been made to phase GTZ out of project maintenance commencing with GTZ providing 100 per cent of the maintenance costs for the first year, 75 per cent by GTZ and 25 per cent by the DDC for the second year and so on to completely phase out the GTZ by the fifth year.

In Kabhre District, an arrangement was made in 1992\93 for toll collection from vehicles plying the road. This stopped after a year as it was not found to be cost effective to collect toll taxes from a few vehicles. Until 1995, households around the road were asked to contribute money\labour for improvement of the road. Subsequently, when a large sum of money was received from the DDC and DOR in 1995, the Users' Committee (UC) did not bother to ask for contributions. Sometimes, the mini-trucks that ply the road regularly carrying milk voluntarily bring boulders and sand to fill up the muddy and rough parts of the road in order to make their passage easy.

On the Nepaltar - Mangalbare Road of Ilam District, there are no restrictions for heavy buses and trucks plying the road and no toll tax is collected for road maintenance. Here too,

trucks that run regularly on the road voluntarily bring boulders and sand to fill up the muddy and rough parts of the road.

In Kabhre District, respondents and local people argued in an open discussion that it is unfair to ask rural people to contribute for construction as well as for maintenance of rural infrastructure projects. It was thought that the government should provide support from internal or external resources for construction and maintenance of urban infrastructure projects and highways. As in the case of highways, the government should also own rural roads, collect toll tax, and maintain them regularly. In the case of rural roads, vehicle owners, who are the ones using the roads, do not pay anything. Each time, mobilisation of free labour, the easiest method for political leaders, is sought for road maintenance.

In fact, lack of regular maintenance has been one of the main problems of many rural roads constructed through people's free labour. One source of revenue for routine maintenance would be charging users a toll tax. But, in Ilam and Kabhre districts, there is no toll tax on vehicles. In Dhading District toll tax was charged for the Dhading Bensi - Salyantar Road, and this was also included in the revenue of the DDC. The road maintenance budget, which was said to be higher than the amount collected in toll tax, was allocated from the annual programme and budget of the DDC. However, this practice lacked a clear basis for allocation of a maintenance budget for different roads, on the one hand, and, on the other, did not succeed in inculcating a feeling of ownership into road users through their contributing to road maintenance. Similarly, there is also an administrative problem (Box-3) in that the road has to be cleared by the Department of Transport Management, therefore the district authority can not regulate bus/truck fares.

Mechanisms for authorisation for traffic plying rural roads, fixation of toll tax rates, fixation of fare/freight rates, and coordination routine maintenance work need to be properly institutionalised at the district level.

In the case of mule trails, there is no maintenance policy. However, an example was seen of the Baglung - Galkot mule trail, for which an arrangement was made by the DDC two years' ago to collect toll tax in Khahare, in Pala VDC, from those carrying commercial items along the trail. The rate of toll tax is as follows:

<u>Item</u>	<u>Tax rate</u>
1. Mules	Rs 5
2. Porters	Rs 3
3. Goats/sheep	Rs 1
4. Buffaloes	Rs 10

Note: Tax is levied only for commercial goods. No tax is levied for tourists' equipment.

There is a Maintenance Committee consisting of the VDC Chairpersons of Mulpani, Pala, and Biu. This committee regulates the toll tax collection and maintains the mule trail. The tax collection is given to a private contractor for Rs 7,500 per month through open bidding. After completion of the motorable road project, these arrangements can also be institutionalised along the mule trails in the interior.

3.4 The Phase-wise Construction Approach

In all districts, rural roads are regarded as continuous projects (*Kramagat Yojana*) that are implemented on a phase-wise basis over several years. In fact, in order to construct roads in an economical manner and according to the standards suitable for the expected level of traffic, the DOR has also defined five road development stages for feeder road development (Section 2.3). The stages, which are to be implemented in succession, are equally suitable for district road development. Among the five stages, the first stage is that of preparation, covering planning, engineering design, costing and, programming of the road construction. In the successive stages, the construction work is carried out from fair weather earth tracks in the second stage to all-weather bitumen roads in the fifth stage.

In the LES approach use in Dhading District, the phase-wise construction approach was conceived for three reasons. First, in areas with steep slopes where considerable cutting was anticipated, construction of road profiles is designed to be carried out in phases to allow natural settlement and stabilisation processes to take place. In the first year a 1.0 - 1.5 metres wide track is opened and, in the second and third years, the width is progressively widened to a minimum of 3.5 metres to a maximum of 4.5 metres. In this period, stabilisation and strengthening works are carried out using gabion retaining walls and bioengineering methods. Second, in order to take into consideration the management capabilities of the district to provide labour-intensive methods and to allow for the the availability of technical personnel to supervise the work, the process has to be slow. Third, in order to maximise the economic gain for local people, who work as labourers in road construction, the construction period should be planned to coincide with the slack period in agriculture.

In all four districts, except where there are donor-supported projects, the phases of road construction are not clearly defined. They are determined on an *ad hoc* basis largely dictated by the availability of money. In another study, Paudyal (1994) reported that during the period from 1985-90, the District *Panchayat* allocated only one to 12 per cent of the total cost for motorable road projects annually. One of the main reasons for this low level of allocation was that road projects were assumed to be 'continuous projects' as earth excavation was mainly carried out only to be washed away in the following monsoon rains thereby necessitating the same work year after year. Moreover, the phases are not interconnected but seen as separate projects. The budget and expenditure for the Nepaltar -Mangalbare Road project (Table 4.4) is an example in which each year there is a separate budget allocation for the project. The DDC regards each allocation to be a separate project and not a continuation of the earlier project. Therefore, the unspent balance from the previous year is not accumulated, but rather a new budget is allocated and a new users' committee is formed, although the same persons might comprise the new users' committee. The project completion is certified (called *Janch Pass*) when the users' committee submits accounts for all expenditure for each year's allocation. Therefore, the *Janch Pass* is related to expenditure, not to the completion of a project.

3.5 People's Participation

Four elements of people's participation are identified in road building: i.e., the involvement of the project beneficiaries in selecting the road alignment, their active involvement in for-

mation of a users' committee, cost sharing through the mobilisation of free labour, and benefit maximisation through economic use of the road. All four elements of people's participation were found to be low in all four districts. The system adopted to mobilise people's participation in the four elements mentioned above has been analysed below.

First, in the selecting the road alignment, very few people other than the local political leaders were involved. In the field survey, most of the respondents (Table 3.4) reported that they first learned about the construction of the road through neighbours or political leaders.

Table 3.4: Respondents District: Knowledge about the Road Project

Respondents knowledge through	Baglung		Dhading		Ilam		Kabhre	
	On	Off	On	Off	On	Off	On	Off
Neighbours	56	64	44	76	48	48	68	84
Local leaders	28	4	4	16	36	32	20	16
Own involvement	28	4	52	8	16	20	12	-
Participation in Users' Committee Meeting	12	-	-	-	20	8	4	4

Source: Field survey

Note: On = On the Road
Off = Off the road

It was generally found that the political leaders were acting as the main players in development projects. The motive could be dedication to do something for the community or it could be hidden motives for economic or political gains. But, in effect, the local people, who were the beneficiaries of the road project, were not included in the process. This sometimes caused frustration and misunderstanding during project implementation. For example, in Baglung District all households along the road had signed an agreement in 1995 that they would have no objection to demolishing their *Pali\Pindi* (attached front veranda of the house) if so required for extension of the road. However, when the actual construction work was underway, it became evident that demolishing only the *Pali\Pindi* was not sufficient to widen the road from 3 - 4 feet to as much as 4.5 - 5.5 metres. Therefore resentment set in and interrupted the construction work. The agreement itself was interpreted, by the people along the road, that they had agreed only to demolishing the *Pali\Pindi*, while the DDC argued that the agreement was made for road extension and not for demolishing. In the field survey, about 70 houses were counted on the roadside, many of which were three-story buildings.

One of the unstated motivations for constructing a road with the DDC's own resources is related to the first three km section of the 55km long Baglung - Galkot - Hatiya road project funded by the Asian Development Bank (ADB). The unstated motive was to avoid the two alternative alignments suggested by the ADB project. Local leaders thought that both alignments would by-pass Baglung Bazaar, which might affect the future commercial growth of the Bazaar area. Therefore, if they managed to link the road from the middle of Baglung

Bazaar (e.g., Deurali Chowk) to the ADB alignment in Bayanabbe Danda, the issue of an alternative alignment would be solved. However, the issue was not discussed properly with the local people in the beginning. For example, the outlet of Baglung Bazaar in Deurali Chowk is only about four to six feet wide, too narrow for a vehicle. Therefore, the road needs to be widened from the Bazaar area itself. It is learned that widening the road in the Bazaar area is out of the question without proper compensation. Therefore, without discussion with the people from the Bazaar area and receiving clearance for the initial section there is no point in going any further.

On the other hand, in the case of Dhading District, the local people were involved in the decision about the road alignment. Therefore, 52 per cent of the respondents along the road said that they were involved in the planning process.

Regarding the second element in people's participation, it was found that in forming the users' committee, the operational rule for prohibiting the inclusion of local political leaders in the users' committee was violated in all four districts. The composition of the users' committee will be discussed in the next section. However, it should be mentioned here that the so-called beneficiaries, who were included in the users' committee as members, did not participate at all or participated in a passive way even if they were invited to the meetings.

The third element in people's participation was cost sharing through mobilisation of free labour. But it was found that, in reality, 'free labour' was not available. The percentage of people's contribution, which was an element of the project cost, was managed on paper in order to comply with accounting requirements. In Ilam District, an agreement was made between the DDC and the users' committee that the work would be completed from the amount disbursed, adding the percentage of people's contribution required. The people's contribution was fixed as given below.

- | | |
|------------------------|------------------|
| • soft soil excavation | 40 per cent, |
| • hard rock cutting | 25 per cent, and |
| • structural works | no contribution. |

If the work completed covers the DDC's allocation and the level of people's contribution required, the expenditure is accounted for and the project is regarded as 'completed'. For example, the total cost estimate of a project is Rs 2,000,000, for which Rs 200,000 are allocated. If work costing Rs 280,000 is carried out this is sufficient to cover the DDC's allocation and a 40 per cent people's contribution and the expenditure is accounted for and the 'project' regarded as 'completed' for the year. Next year, another allocation might be made for the same project, and this will be accounted for in the same manner.

In project implementation, the users' committee divides the work and employs petty contractors or labourers on a daily wage basis, depending on the type of work. In both situations, the actual rate given is much lower than the DDC rate on which the estimate is based. While measuring the work carried out by DDC technicians, the rate is calculated on the basis of DDC rates, and the difference is regarded as the people's contribution. In fact, during the reference period (1991-96), there was reportedly no people's contribution to road construction, but the people's contribution is calculated in this manner.

In Kabhre District, most of the earth cutting is done with a bulldozer, for which the DDC charges Rs 10,000 per day. Limited free labour contribution are used to cut areas the bulldozer cannot reach. Earth cutting with a bulldozer is obviously much faster than by manual labourers. But the work is measured and calculated on the basis of the standard norm for man-days. This method shows that more work has been done manually than is the actual fact. Since the DDC contribution is only a small percentage of the total cost, this method is still not enough to account for the so-called 'people's contribution'. It was reported by the DDC that many projects have not yet given accounts for the expenditure of money mentioned in the agreements and have thus remained unaccounted for (called *Beruju*).

In Baglung District the total cost estimated for building a three km road is Rs 2,340,692, of which the DDC allocation was Rs 651,916 (28%), while Rs 1,688,776 (72%) was to be mobilised through people's contributions. Accordingly, commitments were made from almost all households along the road to contribute money ranging from Rs 500 to 1,000, but very few people actually contributed. During the field survey, it was learned that people were not satisfied with the quality of work. There were landslides in a number of places, because no structural work was carried along weaker sections of the road. Typically, the road surface was widened and the earth was pushed on to the river side embankment of the road, causing more mass wasting during the monsoon. Moreover, there was a feeling that funds had been misused by the Construction Committee, because the Committee did more work to widen the road surface; work that was visible and convenient for the purpose of accounting for expenditure. But such unskilled work could have easily been carried out by mobilising free labour. The money available should have been spent on structural work which needed skilled labour and money.

In Dhading District, while paying the labour bill, 25 per cent is deducted as a 'people's contribution'. The DDC argued that, as the wage rate was fixed on the basis of the district norm, the actual wage rate paid was still higher than the local rate. However, during the field survey people argued that the wage labourers, who are not the road users, are actually contributing 25 per cent of their wages, whereas the actual road users pay only a toll tax when the road is ready. Moreover, the actual road user gets a direct benefit by exchanging the toll tax for use of the road, whereas the wage labourers, who made a greater contribution (than road users) during road construction, do not get such benefit even after the road is completed.

Furthermore, people also argued that the land occupied by the road is also donated freely, and many households lose valuable agricultural land. There is no system of compensation for the land used by the road. This is unjust to those who donate land, whereas the benefit is received by all equally.

Finally, regarding benefit maximisation through economic use of the road, there is no objective set by the implementing agency beyond completion of the road. At best, completed projects are handed over to the users' committees for maintenance. This is also the case with the BBLL suspension bridge projects. In most of the donor supported rural road projects, it is assumed that improved transportation will open up markets and induce farmers to shift to higher-value commercial crop production. However, in the case of ADB-supported RIDP project, it has been recognised that, if labour intensive methods are applied, more funds (up

to about 70% of the total investment) will be diverted for wage payments. The capital brought into the rural community through labour payment should be used for infrastructural development or income generating activities which would ultimately increase the economic use of the road. Therefore, provision has been made to involve NGOs in helping farmers to explore options for investment of their wage earnings from the road project (ARD 1994).

3.6 The Users' Committee

A road users' committee is formed in the project area. Each committee has from seven to 11 members chosen from among the project beneficiaries. Although the rules prohibit inclusion of local political leaders as ex-officio chairpersons or member of users' committees, they are included in one way or the other in all four districts. In Dhading District, the DDC has decided that, for district-level road projects, the DDC *Ilaka* Member should be the Chairperson and the VDC Chairperson and vice-Chairperson of VDCs included in the project should be members of the Users' Committee. The same process has been followed in Kabhre District.

In the case of Ilam and Baglung districts, the DDC formed a users' committee of a district-level road project, in which social workers, teachers, and business persons were also included apart from the VDC/DDC officials. A VDC Chairman and a VDC Secretary are selected as the chair person and secretary of the Committee. They are usually both from the same VDC to ensure better teamwork. For village-level rural road projects, however, the VDC concerned forms a users' committee of from seven to 11 members, and the chair person and members are selected from among the beneficiaries.

In the case of the Dhading Bensi - Salyantar Road project in Dhading District, the system was a little different. There are two project implementation committees: one, the Main Road Committee at the district level and, two, the Project Construction Committee at the project level. The members on the Main Road Committee are as follow:

DDC Chairman	Coordinator
Members of Parliament	Advisors
DDC <i>Ilaka</i> Member	Member
DDP Road Advisor	Member
Local Development Officer (LDO)	Member Secretary

The main committee is responsible for policy-level decisions such as approval of alignments and designs, personnel and fund management, and technical supervision. At the project level there is a Project Construction Committee, on which all the VDC Chairpersons and Vice-Chairpersons and Ward Chairpersons of VDCs and Wards connected by the road are members. The Chairperson of the VDC through which road is being constructed is the Chairperson and the DDP overseer is the Secretary of the Committee. The main functions of the Committee are as follow:

- to form labour groups,
- to nominate the *Naika*(s) and supervisors on the recommendations of the technical supervisors,

- to propose reasonable wage rates for the approval of the Main Committee, and
- to check the labour muster roll together with the supervisory staff and be present during payment of wages.

The committee members are also paid an allowance of Rs 75 for working days. The project also provides a primary health worker, a mechanic, a blacksmith, a storekeeper, and a guard (*chaukidar*) for the Project Construction Committee.

Numerous advantages were reported for including elected officials in the users' committee. First, to include officials already elected on to the committee is less disputable (politically) than electing a new one. Second, in projects for which beneficiaries can not be identified easily such as those for roads, trails, and suspension bridges it is difficult to elect a users' committee even if it is desirable to do so. Third, election is always a struggle between political groups, therefore it might be difficult for the committee to secure cooperation from all groups during project implementation.

In fact, the implementation of local level projects through users' committees has been tried ever since the 1980s when a Decentralisation Scheme (DS) was legislated during the *Panchayat* Period. But implementation of rural road projects through users' committees became a method of using cheap local contractors who do not have to compete in contract bids and pay contract tax, rather than a developing method of users' institutions for sustainable development. When the users' committee does the required amount of work, the LDO makes arrangements to check it and certify its completion, and the completion report is submitted to the DDC for approval. There is no role for the users' committee after completion of a project. Except for in suspension bridge projects under the BBLL, a project is not handed over to the users' committee after completion. However, the users' committee is not dissolved when a project is 'completed'. It is simply defunct or succeeded by another committee if there is an allocation for the same project next year.

3.7 Conclusion

In the literature a 'development project' is defined as "a set of interrelated development activities and resource inputs, designed to attain specific objectives/targets over a specific period of time, at specific costs and in a specific location under the responsibility of a demonstrable management unit" (van Dusseldorp 1993). Although most of the elements of this definition are found in DDC-level projects, they are incorporated more to meet administrative requirements than to achieve objectives. For example, a project is identified and designed, resource allocation is made, and a users' committee is formed in order to mobilise project beneficiaries for its implementation. But all these steps are fulfilled on paper to fulfill administrative requirements rather than to facilitate efficient use of available resources.

The policy framework and the institutional arrangements that exist at the central as well as at the local level are not used effectively. The number of stages in the development process planned and adopted in each district are different and the Manual for the Rural Road Programme, issued by the MLD (Section 2.4.2), is not followed at the operational level. The MLD, which is supposed to coordinate at the national level and provide policy and technical support to the local level, is not fully equipped to fulfill the tasks. The Technical Division of the

MLD, which is headed by a superintendent engineer, should have a strong role in implementing the Manual at the operational level. But the Division is generally ineffective in this regard. The district level programmes, which are technical in nature, such as Rural Road Programme, Food for Work Programme, PLRP etc, are handled at the Ministry level by non-technical divisions. Consequently, the district-level engineering projects do not receive continuous technical backstopping.

The policy guidelines are not implemented effectively in rural road projects. For example, the phase-wise construction method is prescribed in the policy of the DOR. In the LES experimental work also, the phase-wise construction method was used to facilitate natural stabilisation process for environmental protection and so that the construction period would coincide with the agricultural slack season to ensure availability of labour. But, at the local level, although roads are constructed on a phase-wise basis, there is no clear planning and inter-connection between phases, rather the phases are dictated by budget allocation from the DDC. Consequently, the road is always constructed on an *ad hoc* basis and, in many cases, the roads are constructed as a result of such low standards that they cannot be maintained.

On the technical side, the technical manpower is insufficient compared to the number and type of projects with the DDC. But ironically, the available technical manpower at the district level is scattered and not used effectively. The Decentralisation Policy has proposed that the scattered technical manpower and equipment should be pooled and a separate office, the 'District Technical Office (DTO)', is established. Donors should also use the DTO instead of highly paid consulting firms based in Kathmandu for designing and supervising projects, because then the DTO would ultimately have to bear the responsibility of project maintenance.

There is no clear policy for maintenance of rural road projects. Two issues, one of the ownership of rural roads and the other of the effective use of rural roads, are particularly relevant in this regard. On the ownership issue, the users' committee, even if it is organized and strengthened, cannot be the owner of a rural road project, as road users are unidentifiable. Besides, due to the large coverage of a rural road, the project users can not really elect a truly representative committee. The issue of effective use of a road cannot be tackled unless the local production is increased. In the absence of local production for export, the ultimate road users would be the outside producers and business community to carry in their merchandise, and, therefore, there would be little road use by the local community. As a result, toll tax collection for road maintenance cannot answer the road maintenance issue adequately. The above two points suggest that the owner of rural roads should be the DDC, VDC, or municipality, depending on the type of road, which should make plans to promote production and generate more revenue from the roads. Until the road is able to regenerate its own maintenance the DDC should prepare a regular rural road maintenance plan through the District Technical Office with a block grant that is made available to the DDCs for Rural Road Programme.