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SUSTAINABLE DEVELOPMENT PLAN
MANANG
(2008—2013)

Extrait de 7 pages sur les motivations de création
d'une route entre Besi Sahar et Manang

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ROAD NETWORK

3.1 Current Status

Manang is one of the few remaining districts of Nepal that is not yet connected by road. In the past, this district was not prioritized for road development as it was assumed that trekking tourism, which has been popular here, would decline. But majority of local people were in favour of road. As the absence of road and physical exclusion are considered main causes of poverty and lack of human welfare, it is now considered that road connectivity is important. The National Transportation Policy has planned to link all the district headquarters by road so as to remove physical barriers to development. Access to market, economic opportunities and trade will flourish with the opening of road, which are considered instrumental in reducing poverty. Accordingly, the road linking Besishahar to Chame has become government's priority. This road will link the district headquarters to the national highway. Even as the activities for opening these roads at various places had started long back, it was inadequate from engineering point of view.

The Department of Road entrusted the Nepal Army to construct the road in 2002. The role of army personnel is to open the track according to the design of alignment prepared by the Department of Road. Only in few cases the alignment has been changed. The plan is to complete it in seven years with the estimated budget of Rs. 1.5 billion. The track is expected to be completed by 2009 with the road length of 35km in Lamjung section and 30km in Manang section (up to Chame only).

At present, the road has reached Khudi and it is expected to be motorable up to Syange. There is a 5km rocky area in Jagat and Chame sections. About 24km road has been opened and the work is underway for another 12km section, which is expected to be completed in two years. In total, Rs. 130 million has been spent for road construction. Although army has maintained compliance with environmental standards, it does not appear to have been strictly followed as debris is thrown into the river and trees have been felled indiscriminately.

After opening of the track, the army will hand over the work to the Department of Road, which will



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study the traffic flow and accordingly make decisions for black-topping. But given the environmental concerns, it has been emphasized that black-topping of high quality should be done immediately after the opening of the track.

3.2 Existing Impact of Road Construction

The existing road is not motorable yet. Transport facilities are now available only up to Khudi, which has shortened the journey by about one hour. Therefore, portering by people or by donkeys is still the main mode of transportation. Because of the lack of transportation facility, the cost of goods, commodities and services has remained extremely high.



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Road will bring far reaching consequences in all areas of life. People have started to increase areas under apple trees with the expectation that they can create marketing opportunities for vegetables, herbal farming and animal husbandry. Cropping pattern is expected to change as more people will be cultivating cash crops. The area under traditional crops and farming system might decline. The existing agrobiodiversity will decline as people will import improved seeds and only cash crops are likely to be grown. There will be changes in owning the types of domestic animals. The number of horses and donkeys will decline. On the other hand, number of cows, yaks, goats and sheep might increase.

Loss in biodiversity, bio-piracy and wildlife poaching has increased in recent times. Increased access to markets will enhance incentives for excessive harvesting and poaching. Positive developments in energy use, development of hydro power and increase in food security are positive impacts of road construction. As the availability of alternative fuel like kerosene and gas will increase, pressure on forest for fuel wood will decrease. Road is instrumental for hydro power development. Investors will be optimistic to develop hydro power once it is easily accessible. Similarly, agro-based and herb processing industries are likely to be established. People of Manang who are now living in Kathmandu and Pokhara and who have access to remittances are expected to invest in Manang. In fact, they are playing a catalytic role in the construction of road. However, one major threat after the construction of road could be the increase of sexually transmitted diseases and HIV/AIDS. With the increased flow of young people and tourists, this problem is also expected to increase.

The problem that has pre-occupied many people in Manang is the change in settlement patterns. Some settlements are expected to vanish as they are not linked to road. Similarly, settlements which lie in between the stops (bus and other vehicles) will

Road to reduce poverty

Road is also expected to reduce poverty and food insecurity. At present, large quantity of food is imported to meet food deficit in the district and the cost is very high. The cost of food is expected to be half after road construction. Similarly, people can receive medical treatment in Pokhara or Kathmandu. Increase in employment and income generating activities will benefit the poor even though some opportunities like portering will be reduced.

decline, if not disappear altogether. At present, it is seen that Lata Manang has completely dried up. On the other hand, settlements having a central location will expand exponentially and will give rise to problems that are similar to other urban areas. The problem of solid waste, haphazard settlement development, mushrooming of houses, sewage and dumping of wastes into river will feature as major problems. Some of these are already visible in Chame and Manang.

There are also changes in the price of land. This has increased in locations which are suitable for business opportunities. The price of land in Chame and Manang has increased sharply. As business opportunities will increase, more outsiders will come and buy land. Because of the increase in price, there is also a tendency to register common land in individual's name. As a result, common property is expected to disappear if measures are not taken to protect these resources.

Use of old and polluting vehicles will also pose a problem. Even though there are no vehicles (except a tractor) running in Manang, it is expected that they will start running once the track is opened. In the beginning, it is seen that only old and polluting vehicles run on rough roads. This will increase air pollution. Main settlements in Manang are located in a small river valley surrounded by tall mountains. This location makes Manang highly prone to air and other pollution.

The construction of road is good for tourism as it will help to increase the number of tourists. For example, more Nepali, Indian, Japanese, family and religious tourists, and elderly people are expected to come after the construction of road. In the absence of road, only trekking tourism has been popular here. However, in recent years, there have been arguments that trekking tourism will gradually decline after the opening of road. These aspects need to be carefully monitored so that appropriate interventions can be made if tourism is in any way adversely affected.



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Forest for timber



With road, the pressure on forest for timber will also increase. As timber can be transported easily and will fetch high price in urban areas, there will be a temptation to sell timber. On the other hand, the sustainable harvesting of forest and proper marketing of timber and NTFPs might help to increase the wealth at the community level. This community wealth can be used for social development and in helping the poor if proper institutional arrangements are made.

3.3 Overall impact on environment and society

The potential impacts of road (both positive and negative) on cross-cutting issues have been presented in *Table 3.1* linking issues with threats and opportunities. Owing to the lack of baseline data on various indicators of pollution and social development, it was difficult to calculate the impact and estimate the cost to mitigate its adverse impacts. Based on the general understanding of the place, *Tables 3.1, 3.2 and 3.3* have been developed to indicate the potential impacts of road in Manang district. Domestic air pollution is likely to increase unless checked. The impact of road will be generally negative on other types of air pollution as shown in *Table 3.2*. There are only a few areas in which road will not have direct impacts.

Road may not have high impact on biodiversity as the present road alignment passes through the same trekking route. Noise pollution could increase. Easy movement of unscrupulous agents (poachers, bio-pirates and smugglers) after road construction can have some adverse impacts. But road will also make surveillance easier and faster. In some critical areas, road construction should maintain certain standards like 'no horn area', 'under-passage for wildlife', so as to avoid disturbance to wildlife. Positive impacts could be noticed on environment as road will make other fuel alternatives to fuel wood cheaper. It is expected that people will opt for other fuels after road construction. Road will also facilitate hydro power development.

The overall impacts of road on social and human development will be positive. In most of the indicators, road will have positive impacts as shown in *Table 3.3*. Other impacts would be in trekking tourism and bringing other types of tourists like religious and family tourism. Given that road is expected to generate opportunities for social and economic development, including improving food security, it is obvious that people have given it a lot of importance.



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3.4 Future Plan

The District Development Committee has planned to take the road from Chame to Manang and Khangsar. It seems that construction of road is easier owing to gently sloping land. Every year, VDCs donate half of their budget for road construction. Manang Development Society (MDS) is also responsible to monitor road.

Inaccessibility was found to adversely affect the poor and marginalized communities the most. Their accessibility to cheaper food and commodities and emergency medical treatment has been curtailed because of the lack of transportation facilities. The MDS organized all VDCs to work for road construction. In the section above Chame, MDS has planned to permit only light vehicles and build suspension bridges over the river. Tourism will not be disturbed by vehicles as these small vehicles would not significantly pollute the environment.

Table 3.1: Potential impacts of road

Issues	Negative impacts (threats)	Positive impacts (opportunities)
Livelihoods (agriculture, trade, industries, animal husbandry, mining)	<ul style="list-style-type: none"> • Wealth gap will increase • Traditional safety net will decline • Competition with outsiders will increase • Increase competition and decline of local industries • More pest and diseases for people, animals and crops • Loss of agrobiodiversity • Pressure to use more chemicals 	<ul style="list-style-type: none"> • Trading opportunities will increase and income will rise • Food and other goods will become cheaper • Diversification in livelihood opportunities • Increase in cash crops (vegetables, fruits and herbs) • Dependence on food on other region/market will increase possible risk of food insecurity due to market failure • Opportunities to expand livestock farming, including dairy animals • Opportunities to reduce poverty by engaging poor in cash crop farming by increasing the access to land and natural resources • Increase in agro-processing industries • Making the poor people capable to deal with market, increase their marketable surplus • Industries having competitive advantage may increase • Primary product processing (fruit, vegetable, herbs) will increase
Biodiversity and forest	<ul style="list-style-type: none"> • Theft and poaching may increase • Bio-piracy may increase • Noise may cause disturbance to wildlife • Pressure on forest for timber and NTFPs may increase because of demand in towns and other places and temptation to earn more income • Invasive alien species may increase 	<ul style="list-style-type: none"> • Market for herbs • New tourism products (wildlife sighting) • Human-wildlife conflict may decline • Community income increases through sustainable harvesting of forest • Improved technology can reduce the pressure of timber on forest • Materials from city may reduce the need for timber
Air, water, noise and soil pollution	<ul style="list-style-type: none"> • These pollutions will increase significantly • Solid waste problem will increase • Sewage problem and draining into river • Aquatic biodiversity will decline 	<ul style="list-style-type: none"> • New mitigation technology development (river training, soil control and solid waste management)
Population and settlement	<ul style="list-style-type: none"> • In-migration and transit population will increase • Erosion in traditional values • Loss of traditional architectural style • Theft of cultural artefacts will increase • Pollution may damage places of culturally important artefacts • Fast urbanization of few locations • Decline of some settlements • Loss of traditional architecture • Loss of public lands 	<ul style="list-style-type: none"> • Return migration of local people • Investment of their income and remittances • More remittances will lead to more investment • Incentives for preservation of cultural artefacts, if linked to tourism and livelihoods of people • Return of local people means revival of community life
Energy	<ul style="list-style-type: none"> • Encourage fire wood harvesting 	<ul style="list-style-type: none"> • Opportunities to generate more clean energy will increase (hydro power) • Pressure for fuel wood will be reduced • Alternative energy will be cheaper
Tourism	<ul style="list-style-type: none"> • Decline in trekking tourism if alternative trekking routes are not developed and popularized • Duration of stay may decline 	<ul style="list-style-type: none"> • Domestic and other types of tourism will increase (religious, educational, etc.) • Number of total tourists could increase • Year-round tourism may flourish
Services	<p>Health:</p> <ul style="list-style-type: none"> • New diseases due to pollution and urbanization • Risks of HIV/AIDS may grow • Traditional medicinal practices may decline <p>Education:</p> <ul style="list-style-type: none"> • Out-migration of students to main city will increase <p>Institutions:</p> <ul style="list-style-type: none"> • Importance of traditional institutions will decline 	<ul style="list-style-type: none"> • Access to health services will increase • Health professionals stay in the district • Emergency medical care is possible <ul style="list-style-type: none"> • Access to school/books will increase • Teachers will stay in the district • Quality of education will improve • Investment in educational institutions will increase <ul style="list-style-type: none"> • Coordination and cooperation will be easy because of access to each other and increased communication • More interactions between local and district level is possible

Table 3.2: Existing level of various types of environmental pollution in Manang (2007)

Type	Existing pollution level			Impact of road
	Non-existing	Within the national standard	Exceeding the national standard	
Air				
• Total Solid Particles (TSP)				negative
• PM ¹⁰ (Particulate matter)				negative
• Sulpherdioxide				negative
• Nitrogendioxide				negative
• Lead				negative
• Carbon mono-oxide (indoor pollution)				positive (decrease)
• Benzine				negative
• Carbon dioxide (indoor pollution)				positive (decrease)
Water				
• Suspended matter				negative
• Dissolved solid				negative
• Heavy metals				negative
• Total hardness				
• BOD				
• COD				
• Coliform bacteria				
• Arsenic				
• Harmful chemicals				negative
• p ^H				negative
Land				
• Bio-degradable materials				
• Chemicals				negative
• Soil p ^H				negative
• Heavy metals				negative
• Construction materials				negative
• Plastics/glass/metals				negative
• Infectious/contagious materials				negative
Others				
• Noise (decibels)				negative
• Heat				negative
• Vibration				negative