

## SDC Swiss Agency for Development and Cooperation – South Asia Division

### EDITORIAL

*The Asia Briefing Paper Series aims at informing development practitioners and the (Swiss) public about new developments, results and impacts of Swiss development cooperation in Asia. It shall particularly highlight past and present efforts to achieve aid effectiveness through partnerships among Swiss agencies and with local partners. Discussion and learning from these experiences shall further enhance our motivation and efforts to halve poverty in Asia by 2015.*

*Walter Meyer, Head East Asia Division*



### RESULTS OF THE NEPALI - SWISS PARTNERSHIP

There is a joke that in Nepal, they have six directions: North, South, East, West, Up and Down. But it's not really a joke. The Himalayan state soars vertically from only 80m above sea level to Mt. Everest at 8,848m within a horizontal distance of only 100 km, and this makes road access in most of the country very difficult. Almost six million people or 23% of the population still live more than four hours' walk away from the next road in Nepal. It is not unusual for children to walk two to three hours to school, for a family to walk half a day to the nearest weekly market, and for a pregnant woman to walk two days to a health post. The country has one of the lowest road densities for a landlocked country, with some villages being as far as 13 days' walk from the nearest road-head. The lack of access to roads is a serious constraint for economic development and social inclusion.

For more than 30 years, Switzerland has helped to improve the lives of hundreds of thousands of poor marginalised villagers living in rural Nepal by bringing road access to the people. Apart from providing much-needed employment in the rural areas during construction, physical connectivity provided by roads alleviates the sense of isolation and saves millions of walking hours. Children can go to school, and people can visit medical centres and temples, access public services and their pastures/fields, and go to markets to buy and sell products more easily. The Swiss Agency for Development and Cooperation (SDC) together with the Government of Nepal provides more than 4,000 people with work every year by employing them for road-building activities. More than 150,000 villagers benefit indirectly every year from rural development initiated with the SDC's road construction and maintenance programme. Since 2007, together with the financial support of the Asian Development Bank, this number has more than doubled.

Switzerland, through a District Roads Support Programme, has generated employment and income through labour-based road-construction work and development of livelihood-enhancement skills. Linking the rural population

to markets and technology, it has benefited an estimated 0.6 million people since its inception in 1998.

Apart from the construction of about 100 kms of rural roads, road construction through SDC support has generated more than 2 million person-days of labour, or about four years of full-time work for 2,000 rural poor.

In the past, road building in Nepal was mostly seen as an engineering problem. Social factors were rarely considered. But that changed with the construction of the Lamosangu-Jiri highway in 1975 with Swiss assistance. This was the first road built in Nepal thanks to a Swiss grant. Since the construction of the road was completed in 1987, the literacy rate in this area has more than tripled and the infant mortality, more than halved.

Today in Nepal, most of the roads are being built in a socially responsible manner. Most of the rural roads built today follow a 'green road concept' that Switzerland was instrumental in developing. Green roads combine low environmental impacts, local resource mobilisation, local employment generation, as well as self-help capacity.

To build more roads is a priority for Nepal. Equally important, however, is to maintain the existing roads in good shape. Until the 1980s, road maintenance in Nepal was performed on an *ad hoc* or need basis. Directly building on the experience of the Jiri Highway, Switzerland assisted the Nepalese Government in developing and establishing a Planned Maintenance Management System for Nepal's main roads, a system of maintenance by "length"-workers from local communities. Thanks to the daily efforts of hundreds of length-workers all over the country, the number of Nepal's roads classified as being in "good" condition has jumped from 5 percent in 1992 up to 63 percent in 2001. The percentage of roads deemed to be in "bad" shape went down from 45 percent to 4 percent in the same period. At the same time, the length-workers maintenance system has created hundreds of long-term employments for Nepal's rural population.

## RURAL ROADS: PATHWAY TO BETTER LIVELIHOODS

The Swiss programme, in partnership with the local authorities, has been building roads in six of Nepal's 75 districts, constructing more than 100 kilometres of new roads, and rehabilitating and upgrading more than 140 kilometres of existing roads over the past eight years. In order to keep up these road-building activities, Switzerland and the Government of Nepal invest CHF 2.5 to 3 million each per year. The programme is certainly not only creating employment within the three-year working period it takes to construct a road, but also encourages income generation activities such as animal husbandry, vegetable farming and cottage industries.

A typical **district road** in Nepal leads from a district centre or main road, to a cluster of villages. The road will most likely have an earthen surface, with simple drainage and few retaining structures. It will be wide enough for one large vehicle to ply, with regular passing points; average traffic will be between 10 and 50 vehicles per day, with buses and trucks being the most common (facilitating the traffic of pedestrians and bicycles, as well). Local labour and resources will most likely have been used to construct the road, with subsequent benefits going to the local community.

With a special focus on community participation, Swiss support has pushed for empowerment, social inclusion of disadvantaged groups, democratisation and decentralisation as far as possible and with increasing concern. These aspects are in fact considered to be the root causes of violent conflict in Nepal. Communities became involved through their User Committees in making their own decisions and participating in road construction and maintenance. Public/social audits on funds and projects have led to an outstanding transparency. This ownership of the community and the local government, the checks and balances, and the transparent processes have left minimum space for corruption.

Another field where Switzerland has introduced innovations is the improvement in the working conditions of the

labourers. The Swiss programme was successful in arranging for road workers to receive accident insurance from the districts they were working in. Earlier, the insurance of the workers was neither part of the culture, nor was it practiced in road construction in Nepal. In the event of any accident, especially a fatal one, the family members would suffer miserably and would rely on welfare. Now, after years of trial and error and lobbying with the government, workers are being insured against accidents. This practice is slowly but surely being replicated in other road construction projects across Nepal as well. As a result, the districts have become more responsible employers and the workers have been given more security and confidence in carrying out their work.



The Swiss experiences in road construction have influenced Nepal's sector policies in many cases. The road programme has introduced worker welfare, maintenance policies, land compensation, conflict-sensitive project management and public hearings and audits, and has been successful in achieving wider acceptance of these policies countrywide. Above all, the 'green roads concept' that was developed for Nepal by SDC in association with German Technical Assistance adopts mainly labour-based, environmentally friendly and participatory approaches, and is being used for the construction of local roads nationwide.



# HISTORY OF SWISS SUPPORT IN ROAD CONSTRUCTION IN NEPAL

Motorable roads are still relatively new for Nepal. The first car in Nepal was carried on the shoulders of porters into the Kathmandu Valley in 1934 to drive on the one and only existing road constructed by the then King Tribhuvan. It was only in the 1960's that the motorable roads started to link Kathmandu and regional centres with India and Tibet, and still to this day the road network in Nepal is very sparse. Mountains and hills comprise 80 per cent of Nepal's landmass where the majority of the country's 28 million people live. Only three in every 1,000 people in Nepal own a private car, compared to 518 per 1,000 people in Switzerland. The reason for this is that much of the rural area of this mountainous country is still untouched by motorable roads.

In the 1950s, when pioneer Swiss geologist Toni Hagen traversed the length and breadth of what was then a road-less Nepal, wherever he went, villagers told him that they wanted only one thing: a trail bridge, because villagers had to walk, and the rivers got in the way. Since then, especially with the help of Swiss - and later that of other donors - Nepal has become a model for trail-bridge building. If Hagen were alive today and travelled across the remote parts of western Nepal or along the road-less districts of the east, he would see the bridges, and if he asked villagers what they wanted now, they'd say: ROADS.

Most of Nepal's 147,000 sq km are still very isolated. At present, only 60 percent of the population has access to roads within two-hours walking distance, while 23 percent are beyond a four-hour walk. Road density is only 14 km/100 km<sup>2</sup> or 0.8 km per 1,000 people, which is one of the lowest in the world. Moreover, half of the roads are unpaved roads with an earthen surface. The accessibility situation is extremely poor, particularly in the north and western remote hill districts. Even though some of the roads are controversial as they represent potential damage to trekking tourism, most villagers want to be connected to a road as thousands of people still have to collect water from a stream that can be as far as a few hours' walk away.

The Swiss have been involved in building roads and supporting infrastructure policy in Nepal since the 1980s, facilitating the villagers' access to hospitals, education and employment. One of Switzerland's major projects was building the road between Lamosangu and Jiri, which brought long-term development such as tourism, better schooling, and improved health care to the area. In the district of Dolakha where this road was built, the literacy rate has jumped three-fold, i.e., from 17% in 1981 to 51% in 2001. Similarly, while the infant mortality rate in the district in 1989 was 108 for every 1000 births, it has now declined to 50 per 1000 births. The maternal mortality rate for every 100,000 also declined from more than 600 to 350 during the 1990s. Though all this improvement cannot be attributed to the Lamosanghu-Jiri road alone, it is evident that the facilities the new road offered to the people has played a crucial role in this development.

## ECONOMIC AND SOCIAL BENEFITS

In the past, people were forced or coerced into giving land for a road free of charge. Due to the valuable work done by the Swiss and their partners, the smaller and poorer landowners will now be compensated in a fair way for the land they have to give up for road construction.

"I'm not here for my daily wage. I work here to motivate my fellow villagers to open up this road towards our homes," says the leader of a Construction Group in Kavre District.

Transport and rural roads have also significantly improved people's mobility and stimulated economic activity, which in turn has reduced poverty. Women and the socially disadvantaged benefit immensely from the road building projects. The Swiss programme ensures that at least 40 per cent of the workforce employed are women. Not only does the programme generate more income in the two to five villages that are involved per road corridor, but it also helps to enhance women's self-esteem as they are no longer financially dependent on their husbands.

Saraswoti Tamang coordinates a women's group in Ramechhap: "We are glad that we get the same wages as men and have employment opportunities near our homes. We are happy to learn from the public audit that many women are employed through this programme," she said.



Switzerland has also encouraged the formation of working groups, which villagers are encouraged to join within a community. Saving money, for example, is still a relatively unknown concept in Nepal and most people spend their wages as soon as they have earned them. One of the Swiss-supported working groups teaches the villagers the importance of saving and how to use the money for their own livelihoods. Every month they contribute a day's wage to a fund, which they will then use to buy buffalos and other animals. Whereas many villages would have seen a lot of out-migration, people are now more likely to stay in the hills as they are becoming more aware of the fact that they can achieve more by working together.

## BRINGING INCOME AND SERVICES TO REMOTE AREAS

Sudhan Shrestha is a technical adviser to the Swiss District Roads Support Programme. He was born in Chainpur, a remote village in the hills of eastern Nepal.

*“When I was young it took me five days to walk to the road-head, where I first saw a bicycle and my first light bulb. It is only now that a road is being built. The road has brought a lot of hope to the village as the people now travel freely to Kathmandu and beyond, plus it has given them a new sense that they can achieve something. The lives of the residents of Chainpur have improved significantly.”*

Shrestha's story is not an isolated case. If we compare two villages in the Kavre District of central Nepal, it highlights how much a road can actually improve people's lives.



About two years ago, a road was built to Lamagaon; however, the neighbouring village of Gothdanda still has no access. The villages are about one-hour walking distance apart, but show some significant differences. Lamagaon has changed and is developing rapidly since the arrival of the road. Since the road came and projects such as animal husbandry, hydro-power, rural electrification and other development activities were introduced, most people in Lamagaon now earn between 25,000 and 200,000 NPR per year (450 – 3'500 CHF/year), whereas Gothdanda is still marked by subsistence farming and heavy migration to towns for work.

Lamagaon has also seen significant social changes. Before the arrival of the road, about 75 per cent of children enrolled in school were boys. Now, there are more girls than boys as people have started to believe that an educated girl will get a better husband.

Neither Lamagaon nor Gothdanda have a health post; however, it is much easier for the villagers of Lamagaon to access health care thanks to its road. For example, a pregnant woman with delivery problems was taken from Lamagaon to the nearest hospital. Unfortunately the baby died, but the mother survived. Had the same thing happened in Gothdanda, it is very likely that the mother also would have died.

A good road also brings drinking water delivery to a village. Lamagaon now has nine taps, and sanitation has also improved since the programme supported the village in building proper toilets. Building these toilets was also facilitated by the road as the transport of building material was a lot easier. In Gothdanda, women still spend much of their day collecting water from the nearest stream, which is a one-hour walk away.

*‘Since the road opened, the cost of transporting rice has reduced from Rs 8 per kg to Rs 5 per kg. A bus service has started up, so transport is easier and many more people are sending their children to school’, says a **Manthali – Khurkot road user in Ramechhap.***

*‘As transportation facility has increased, the import and export of goods like rice, wheat, and maize has become easier and cheaper. Nearly 1,000 litres of milk is sent and sold in the Melamchi Bazar every day. Also sick people can get to the hospital more quickly during an emergency’, says a **Chautara – Nawalpur road user in Sindhupalchowk.***

SDC also ensures that after the roads have been constructed they are well maintained. The Swiss initiated a maintenance programme and established a system for the districts to employ one full-time worker (called a Rehalu or length-worker) for every five kilometres of the road. Their number is doubled during the monsoon – a time when sections of the roads are likely to be washed away during the large amounts of rainfall. Nowadays, you can see the orange jackets of the length-workers all over the country contributing their share to keep Nepal's roads in good shape, thereby protecting the precious investment and bringing income to rural villages.

*“The Swiss perfected the road maintenance system after building the Lamosangu-Jiri Highway, and let villagers along the highway maintain a length of the road. They came to be known as ‘length-workers’ and the program was scaled up nationwide,” says Devendra Dhar Pradhanang, who was the Maintenance Management Adviser.*



## ENVIRONMENTAL IMPACT AND PARTICIPATORY PLANNING

Despite the evidence of bringing development to rural areas in this mountainous area of the Himalayas, road building can be very controversial as it may damage the environment or interfere with trekking tourism in the region. However, SDC and its partners make sure that road construction unfolds in an environmentally friendly way. The roads are all built by hand and no bulldozers are used, as were in the past. All soil and rocks are moved by manpower as building a road by hand is a lot less damaging to the environment. Traditional tools such as shovels, pick axes, crow bars, rock splitters, mechanical wedges and wheelbarrows, which are rarely used in Switzerland, have now been introduced in the districts.

“I never thought we could do what a bulldozer can do – and in fact we can do even better,” said a road construction worker in Ramechhap.

However, it is not possible to build roads without some disruption to the environment, even using labour-based methods. In order to stabilise landslide areas, the Swiss programme has hired a bio-engineer to achieve structural and environmental sustainability. Bio-engineering is the combination of engineering structures and plants working together to produce a simple and cost-effective method of preventing such areas from causing problems in the future. Preventative measures are cheaper than curative ones in reducing the risk of recurring landslides and increased erosion. Bio-engineering has proved to be a very cost-effective and appropriate local solution.

To assure that the new roads meet the priorities of the population and to avoid that conflicts might arise from the intervention, it is essential from the beginning to gain public consensus as to which roads are built within a district. To this end, a District Transport Master Plan is prepared and regularly updated – a process for which the methodology has been largely developed by the Swiss programme. District authorities bear the responsibility for rural road management. This involves gathering opinions and requests from all sectors of society in order to prioritise which roads should be constructed first. Once the new road corridor has been selected, the Swiss programme with participation of the local community selects the workforce by a so-called ‘wellbeing ranking’. During this process, households are checked to make sure that the poorest of the poor will be hired for road works. After this, a workers group is formed to indicate whether everything is being done in a democratic way.



Nepal has been suffering from an armed conflict since 1996 when the Maoists declared a “People's War”. Since the peace accord was signed in November 2006, working in the districts has become much easier. Construction workers feel liberated and construction has not been halted due to disruption by the Maoist insurgency. However, during the ten-year conflict, construction work was a challenge in many districts. The Maoists demanded donations from workers and from the programme, which Switzerland refused to pay. Sometimes construction work had to be halted for several months until a solution was found to allow work to continue. Transparency and accountability became very important, and it was essential that everyone be aware what work was planned and how the money was spent.

It is still important to hold public hearings before the work starts, in order to inform the community what will be done and how the work will be implemented. After work completion, a public audit is carried out, which is similar to a *Landsgemeinde* in Switzerland. Here everyone can see who has earned how much and find out if anything is not clear. The Swiss programme still ensures that the workers receive their salaries every two weeks as this discourages money lending, which is a significant and unnecessary expense for the workers. Transparency is a useful tool to ensure that projects do not make the situation worse in a conflict environment.



## CHALLENGES AHEAD

Rural Nepal has always been primarily interested in access to transport infrastructure. In many cases, this means the difference between life and death for villagers. A mother who can't be taken to hospital for a complicated pregnancy can die; farmers can't sell perishables like milk and vegetables because they can't get it to market. True, roads might also bring negative side effects. But in the minds of ordinary Nepalese, the benefits far outweigh them and there is great public pressure on politicians and other forces to deliver roads to their districts. Villagers have made a correlation between access and services. For example, doctors are often absent in hospitals in districts without roads; the quality of schools is lower when there are no roads; and there are fewer investments in rural areas which aren't connected to the highway grid. So without roads, there are no jobs; hence, there is no development.

There is a strong correlation between poverty and access to economic and social services in Nepal. Poverty is concentrated in rural areas where its incidence (35%) is more than three times that of urban areas (10%). Disadvantaged ethnic groups and castes in these districts are among the poorest in the country.

Hence the demand for rural road development is still huge in Nepal. Even though Nepal's rural road network grew by an annual 11 per cent during recent years, the country's road network and density is the lowest in the region. Even though there has been some progress especially since 1990, the level of progress has been uneven, with districts far removed from the center having fewer economic opportunities and poorer service delivery. As a consequence, Nepal has the highest rate of inequality in Asia.

The assessment made under the Millennium Development Goals indicated the need for 30,000 km of rural roads by 2015. The country has about 22,000 km of rural roads at present. However, road standards vary significantly. Less than half are motorable and of this only about 60% are categorised as "all-weather." Hence a large population is unfortunately still far from having access to reliable transport systems. And even though Switzerland and its partners have improved hundreds of thousands of lives, there are still many thousands more waiting to be made better. Consequently, there is a significant need for extension of the road network to provide a ma-

majority of the people with accessibility to road-heads within a reasonable time (say, within less than 2 hrs. in *Terai* and 4 hrs. in the hills/mountains). To this end, the Government of Nepal targets building 2000 km of rural roads in the coming four years, out of which Switzerland will help build about 700 km. At the same time, with the gradual expansion of national highways connecting the headquarters of the various districts, the importance of rural roads, particularly their serviceability, has proportionately increased to enhance connectivity of more and more rural settlements to the road transport network.



However, lessons have been learnt and several key issues still need more focused attention as the road sector moves forward. The long-term aim is not just to build roads, but also to alleviate poverty in Nepal. As Switzerland is constantly trying to improve the quality of the roads, it has now moved on from building earthen roads to constructing more durable gravel roads, which is important especially during the monsoon season. When it comes to planning, the districts have to further increase their ownership of the District Transport Master Plans, which are made in a participatory and inclusive manner, and adhere to them when implementing rural roads. In order to improve road-building activities, SDC has taken on board the methods and opinions of other organisations, such as the World Bank, the Asian Development Bank, the British and the German Development Agencies, as well as the World Food Programme in an attempt to bring all the forces together and build a joint sector-wide approach to rural road construction.

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