

the training programs, to identifying the local resource persons, to training them, and providing the handholding support to communities.”

It has helped that Nepal has a history and tradition of women working together in groups. Those ties are now being strengthened by CSOs in the last mile functions of connecting Nepal’s poorest and most vulnerable sectors to the modern world.

Papua New Guinea

ADB and the CSO Community Road Empowerment work together to motivate rural communities to build and maintain their own roads using a low-cost, easy-to-maintain technology called *do-nou*.

It is not your usual road construction site. Women amble down the mountain path, lugging loads of soil and gravel on their backs. Men and women stuff the soil and gravel into plastic sacks and secure the open ends with twine. The bags, weighing about 25 kilograms each, are then laid in neat rows inside the excavated section of a dirt road.

As men pound the bags about 20 times with a handmade compactor, a radio blares a tune. The construction site soon rings with laughter as crew members hop and dance to the music.

Still, the work continues. The spaces between the compacted bags are filled with soil and the process is repeated for a second layer. The exposed bags are then covered with gravel 5 centimeters thick and compacted. Drainage ditches are dug on both sides of the road surface.

With this mix of human-powered and hand-powered methods—plus a dose of merriment—once impassable rural roads in the Enga and Southern Highlands provinces of Papua New Guinea were rebuilt under the ADB project, Extending the Socio-Economic Benefits of an Improved Road Network to Roadside Communities. Financed by a grant from the Japan Fund for Poverty Reduction in 2009, the project supplements the ADB-assisted Highlands Region Road Improvement Investment Program, which aims to develop the country’s 2,500-kilometer highlands core road network.

“Being able to fix the roads on their own gives people confidence and hope”

Home to 40% of the country’s population, the highlands region of Papua New Guinea is a major contributor to the economy through its agricultural and mineral exports. But lack of regular maintenance has eroded its road network, depriving people access to markets, health centers, and schools. Women especially have a hard time because of the heavy loads they have to carry to sell their produce to markets. Tribal conflicts, a common occurrence, further make travel risky.

ADB’s partnership with the international CSO CORE has been instrumental in helping turn these conditions around.

Founded in Japan in 2007, CORE developed a geoengineering technology called *do-nou*, Japanese for packing soil in a bag or sack. The sacks, usually made of plastic fiber, facilitate building a road base that can efficiently bear traffic load without any expensive equipment for compaction in rural areas in developing



Gender at work: Women lug gravel to help improve rural roads in the highlands of Papua New Guinea.



CORE engineer Yoshinori Fukubayashi: Community action starts with identifying community needs.

countries. The labor-intensive method, which creates productive employment, is generally compatible with the spot improvement of feeder roads that have low traffic and relatively flat terrain.

CORE was chosen as the project's implementing agency because of its experience in community-based infrastructure development in Papua New Guinea. "We only use tools and materials available in rural areas for repairing roads. Everything is low cost and easy to maintain," says Yoshinori Fukubayashi, CORE officer and civil engineer who led the project team. "Any community can carry it out. Villagers are quick to learn the skills."

"Being able to fix the roads on their own gives people confidence and hope," adds Fukubayashi. "This is the most essential thing about the *do-nou* technology. It motivates and builds people's confidence in initiating their own development."

Sakiko Tanaka, an ADB senior economist who was then with the ADB's Pacific Department, recalls one telling incident about the project's impact. "One time, we drove to a village that for the first time gained road access because of the project. People began running to our car and crowded around it. An old lady cried because she had never seen a car in her life."

Considered a pilot program for community participation in road improvements, the project also initiated skills development for health, gender and microfinance

components to enhance the livelihoods of poor farmers, promote awareness on violence against women and sexually transmitted infections like AIDS, and provide women better access to safe transportation services. These components have helped ensure the long-term socioeconomic benefits of the project.

A case in point is that of Gabriel Wai, a villager in one project site. "The microfinance scheme has benefited my family a lot. We borrowed 600 kina (about \$245) to help us buy additional merchandise for our store. Now we are able to attract more customers with the variety of goods we sell. We use the additional income for our children's school fees and clothing."

Wai Samson, a community health worker, is just as enthusiastic about the water tank provided by the project. "It was so taxing to fetch our own water. But now, we can easily get water from the tank. It has also influenced the attitude of the people toward cleanliness."

To ensure sustainability and community involvement, a road committee has been established in each of the project's eight road sections. Other committees have been established dealing with microfinance, health and gender, agriculture and livestock, and community peace and resolution.

"In the beginning, we had to keep saying to people: 'it's your road, you have to maintain it on your own, especially during the rainy season.' But later, they understood



Water is life: Wai Samson and fellow villagers are all smiles after setting up the first water tank in their community.

this and were proud of their efforts. They promised to cut the grass and clean the drainage,” says Tanaka. “What is important is building a sense of ownership and responsibility among the people who made the project succeed.”

By the time the project ended in September 2013, 81 kilometers of roads had been rehabilitated, through the efforts of 2,780 community laborers, 41% of them



Meeting of minds: Regular meetings help ensure continuity of activities and community involvement.

women. Peace-keeping trainings have also been successful in reducing tribal conflicts and building consensus. A notable effect of the gender sensitivity campaign has been increased awareness of the need to assist women in carrying heavy loads—a big step in a culture where women are considered inferior.

“One may think that the roads that were built are too remote or too short to be of much significance,” notes Ninebeth Carandang, ADB social development specialist with the Pacific Department. “But better roads play a profound role in reducing poverty.”

In one of the most rural places in the world, these roads, built by team spirit—with a dose of music—are helping close the gaps that hamper development.

Tajikistan

With the help of ADB and CSOs, rural villagers learn that their greatest resource in addressing devastating floods is to come together as a community to protect themselves better.

“It was midnight. We had been warned that the river had changed its course and was coming toward our village. People all left their houses. That night, the crying of women and children and the lowing of animals reached the sky.”

For Gulsifat Khalilova, sky and earth were joined that night when water and mud engulfed her village of Metintugay. The rampaging flood—“higher than any man”—wiped out everything in its path. Houses, roads, bridges, farms, and whatever hopes and dreams Gulsifat had for improving her little patch of land were swept away in that deluge of misery in July 2005.

The swollen Pyanj River surged over a series of antiquated embankments in Khatlon province in the rural south of Tajikistan, destroying more than 4,000 hectares of agricultural land. Lack of routine maintenance during

“When villagers act together, they can save each other from disaster”