

# Saving Lives and Livelihoods, and the Planet – One Village at a Time

Most villages in Nepal are lucky to have a river running through them, or near them, for sheer accessibility to water. In western Nepal's Banke district, the Duduwa River surrounds the Farm Tole village on three sides. As picturesque and convenient as this may appear, the river also makes the village naturally vulnerable to floods. Over the years monsoon flooding has become progressively more serious, threatening not just the lives of the locals, but also their livelihoods: every year land along the river is washed away, a significant loss for the predominantly poor Dalits and subsistence farmers who make up the village's population. And it isn't monsoon floods, it is delayed monsoon. Like much of Nepal, locals here too depend on rainfall for agriculture. And with increasingly erratic monsoons, farmers are beginning to see unreliable crop production and chronic losses. But Farm Tole is on the cusp of transforming itself. With impressive advances in livelihoods, women's empowerment, health, sanitation, and climate change adaptation, Farm Tole is today more resilient to climate and economic shocks and stresses. And in June 2013 it was declared Banke district's 'First Model Village.'

Part of that transformation was enabled through USAID's Global Climate Change (GCC) Initiative in Nepal. The Agency's flagship GCC project in Nepal, called Hariyo Ban or Green Forests, is designed to help reduce threats to biological diversity and vulnerability to climate change, with an emphasis on conserving critical bio-diverse forest areas in two large landscapes in the country and supporting local livelihoods that reduce pressure on forests and help people move out of poverty. Hariyo Ban is implemented by a consortium of World Wildlife Fund (WWF), CARE, the National Trust for Nature Conservation (NTNC) and the Federation of Community Forest Users Nepal (FECOFUN), with WWF as the lead partner.

To achieve its goal, Hariyo Ban helps villages like Farm Tole identify their most pressing risks and develop sound local solutions to address those life-and-livelihood-threatening challenges. To make the efforts effective, the approach is holistic by design.

The project first helped establish a community learning and action center (CLAC) at Farm Tole – an informal platform for rural women and marginalized people to unite and organize, enabling them to take a leadership role in local social transformation efforts. Ganga Nath, 47, Farm Tole resident and recently elected CLAC chairperson shares, "thanks to the classes and discussions in the Center, we are now more informed about climate change, and see our problems in a new light, especially those related to health and environment. This understanding is helping us in proposing ideas for our community adaptation plan, which was created in an effort for us to adapt to climate change. The plan is currently being implemented."

The risk of flooding in Farm Tole is too real and too dangerous to ignore. "Our village was inundated with a huge flood in 2006. Eleven houses were swept away by the flood," recalls resident Shambhu Nath, 52. "Every other year, there were floods that eroded our fertile lands and made life difficult. We wanted to do

something to protect ourselves, but did not know what or how."

That is why to reduce its risks, the Hariyo Ban project supported village residents to plant cactus and bamboo along a 1,500 meter stretch of the Duduwa River, helping bind the soil, slow the water, and reduce the risk of soil erosion.

With their farmlands better protected, locals were trained in off-season commercial vegetable farming so that they could make the most of their land and improve their income. Today, residents of Farm Tole are producing asparagus seeds for medicinal purposes with plans to produce the seeds on a commercial scale and establish a seed processing plant. USAID is supporting the purchase of a grinding machine for asparagus roots that will be packaged along with seeds for sale in the market. Officials from the District Agriculture Development Office and Plant Resource Office are now also part of this livelihood-creation initiative at Farm Tole, and are supporting asparagus farming in the village, thereby ensuring sustainability of its future production.

Through projects like Hariyo Ban, USAID's efforts have enabled over 162,000 of Nepal's poorest and most vulnerable people to build the resiliency they need to thrive, including by conserving biodiversity, mitigating greenhouse gas emissions, adapting to a changing environment and sustainably managing their natural resources.

There is more. Hariyo Ban project support has enabled Farm Tole to reduce the use of firewood, previously their primary source of fuel. Today, with improved cooking stoves and biogas plants in the village, indoor air pollution and pressure on local forests have been significantly reduced.

Local resident Mina Malla Pun, 29, says, "Earlier, we spent a lot of time foraging for firewood because of our traditional stoves, but now with the installation of improved cooking stoves and biogas, we have drastically reduced the use of firewood. This has led to improved health of those of us who slogged over a smoky stove earlier."

In Hariyo Ban's priority forest regions, in many places adjacent to forests like Farm Tole of Banke district, Jumdanda of Tanahu District and Kumroj of Chitwan district, USAID funding has installed more than 2,500 biogas plants in the last two years alone. Each biogas plant helps reduce the amount of carbon emissions by 4 tons per year.

Kumroj Village Development Committee (VDC) in Chitwan district, in fact, was declared Nepal's first model biogas VDC, also in June 2013 (a VDC is an administrative unit that in rural areas contains nine wards with several hamlets). Today, over 80 percent of the 1,750 households in Kumroj VDC have biogas installed.

Laxmi Rana, a satisfied biogas user from another

village, Jumdanda, shares, "Installing biogas in our home has saved a lot of time. Women use this spare time to participate in community activities that in turn have raised our confidence. We're more vocal about our needs, and thanks to platforms like CLAC, we are organized and know how to identify our priorities and resolve our problems. Recently, to help conserve biodiversity in our nearby community forests, we have set penalties through CLAC for anyone involved in wildlife poaching."

Installation of biogas plants is one of the most widely used methods to help families and communities both conserve their natural resources and improve the resilience and wellbeing of families. The restored forest is also expected to absorb more rainwater and help reduce flooding of the river. It offers a more suitable environment for local wildlife and flora.

USAID funding was first used for biogas in Nepal in the early 1990s, starting with 10 plants. This waste-to-energy tool has been scaled up across the country with funding from several donors. With over 290,000 biogas plants in operation in Nepal, the country is widely regarded as a pioneer and forerunner in biogas technology. It has the world's highest number of biogas systems per capita, outnumbering China and India. Almost every district in the country boasts a biogas company.

Following the biogas installation, villages like Jumdanda, Kumroj and Farm Tole have also seen improved sanitation, with open defecation practices significantly reduced. After all, human waste, cattle dung, and other biodegradable matter are the main ingredients for the biogas, and households construct a toilet from which the organic matter is channeled into the biogas digester.

Speaking at the Kumroj VDC inauguration event organized earlier this year on World Environment Day, Agricultural Development and Forests and Soil Conservation Minister Tek Bahadur Thapa Gharti remarked, "The use of biogas not only helps to reduce the use of firewood, thereby decreasing pressure on the forests, but is also a much healthier fuel. Agricultural development is essential for national progress, and the use of biogas slurry as an organic fertilizer will help to ensure healthy crops. Biogas plants require cattle which also provide nutrition to families and communities and can open up new livelihood opportunities. Also, biogas projects introduce communities to toilets – communities with toilets are healthier communities."

Biogas is also an example of how poor countries like Nepal can help combat global warming. According to climate change experts, over 1.05 million metric tons of carbon emissions was avoided in the last five years by Nepal through large-scale use of biogas.

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A beneficiary in Kumroj demonstrates how the mixture is churned in the biogas pit, typically constructed next to a toilet.



A Kumroj dweller cooks food with the help of her newly installed biogas plant.



Local CLAC members from Kamdi VDC, Banke District.