



Eco-Village Development as Climate Solution

Eco-village development (EVD) of existing villages is a practical, flexible concept allowing poor rural communities to achieve gradual climate-resilient, low-carbon, socio-economic progress. Already, EVD projects are succeeding in South Asian villages under the care of INFORSE members in Bangladesh, India, Nepal, and Sri Lanka.

EVD is about finding and using the best of traditional and new solutions, but it is also about:

- Planning of the right solutions for each village,
- Integrating solutions with stepwise development,
- Training residents for permanent use and maintenance of solutions, and
- Providing a supporting framework such as funding that offers equal opportunities for local solutions compared to centralised solutions.

The project started in early 2015. Since then, project partners have demonstrated the concept in villages in the four countries and have drawn in experiences from

many other villages. This has led them to formulate a number of recommendations as to how EVD can be used on a larger scale in existing villages as part of low-carbon development.

One such insight is the requirement that funding and subsidies for local solutions be equal to those for centralised solutions.

Another point in their recommendations is to make local solutions a focal point of climate-related support mechanisms such as the international climate funding and technology transfer.

You can read about the progress of the EVD villages in the four participating countries on the following pages, as well as on the project website and publication.

The eco-village development concept, practice, and recommendations for wider use are documented in a 60-page Publication and Policy Briefs.

▲ Village dialogue and planning in India. Photo by WAFFD.

▼ The 60-page publication, and the 4-page Policy Brief are available online. Both documents will be available in an updated version in May 2016, which reflects the outcome of the COP21.



Read more on the Project Eco Village Development (EVD) in South Asia in 2015-17 :
 - INFORSE-South Asia: www.inforse.org/asia/EVD.htm.
 - Publication Updated May 2016: www.inforse.org/asia/pdf/Pub_EVD-SouthAsia.pdf
 - Policy brief for UNFCCC COP21:
www.inforse.org/asia/pdf/EVD_Policy_Brief_UNFCCC_COP21_Dec3_2015.pdf

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▲ Village dialogues and visit to renewable energy technology exhibition. solar PV, portable cookstoves, water mill, rainwater tanks. Photos by CRT Nepal.

Nepal

CRT-Nepal has worked actively to implement Eco-Village Development (EVD) in three local villages in the earthquake-affected Kavrepalanchowk district. The organisation also has advocated for EVD from grassroots to the national level.

Introducing EVD Solutions after the Earthquake

It has been almost a year since a massive earthquake struck Nepal in 2015. People from the villages in areas in which EVD solutions are demonstrated are returning steadily to normal life. The EVD project has been a significant positive factor in their recovery.

The earthquake affected the initial planning of the EVD demonstrations. After the earthquake, immediate needs assessments were made through dialogues with the communities. New EVD solutions were identified in all three villages based on their needs and feasibility. These included **portable improved cookstoves, solar PV, plastic tunnel houses for vegetable cultivation, micro-irrigation systems, and rainwater harvesting.**

In addition to local demonstrations, building capacity was also a priority. The villagers learned to integrate water-lifting technologies with micro-irrigation systems and with their agricultural practices to accomplish more with less water. Training in repair, handling, and maintenance of PV components was also given to the communities, as well as training in climate-resilient agricultural practices that allow them to cultivate off-season vegetables.

Raising awareness and disseminating knowledge is an important part of sensitizing project communities and neighboring communities. The local governmental energy officer of the district also participated in knowledge dissemination on government programs

relevant to EVD. Among results were development of used-water-collection ponds, cow-shed management, development of fish ponds, pit composting, and growing fruit trees in backyards.

Village Development Plans

The EVD project gives villagers the tools and guidance that they need to plan the development of their own village. Primary emphasis is placed on village development plans and on enabling communities to communicate their plans to the concerned stakeholders.

Through continuous dialogue with the communities, the project team is supporting village development plans from the grassroots level. For that purpose, the villagers have learned about climate change and about the impacts of climate change on their livelihoods.

Representatives from the villages were trained to do assessments of needs and resources, to identify the problems faced by their communities along with the potential solutions to the problems. They were also invited to participate in a national renewable-energy technology exhibition organized by the Alternative Energy Promotion Center to get first-hand experience and to learn about various potential solutions.

As of now, villagers are in the process of identifying the development indicators based on which the village development plans will be finalized and shared with the concerned stakeholders.

Large Potential

This initiative of piloting EVD concept, including establishing demonstrations in villages, has a *large potential* to contribute in targets and objectives of rural plans, policies, and programs of the government of Nepal.



by Niraj Shrestha, project officer (left), and Ganesh Ram Shrestha, executive director (right) CRT-Nepal



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▲ Village dialogues, bamboo constructions for compost baskets, solar dryers, organic gardening, green house, biogas inlet. Photos by WAFD and INSEDA.

India

In India, Women's Action for Development (WAFD) has been promoting Eco-Village Development (EVD) actively, demonstrating local solutions with villagers in the states of Uttarakhand and Rajasthan.

WAFD, together with INSEDA (Integrated Sustainable Energy Development Association, INFORSE – South Asia Coordinator), Climate Action Network - South Asia, and others, is advocating for EVD at local and national levels.

Demonstrating Solutions in Villages

WAFD has now completed demonstrations of solutions in four villages of our local NGO Partners in Alwar district of Rajasthan.

The technologies used are simple, low-carbon, and cost-effective. Neither the village people nor the Partners had seen or used these technologies before, but they showed great interest.

The technologies were **biogas plants, polyester greenhouses, roof-runoff rainwater-harvesting systems and storage tanks, solar dryers, and organic-compost-making baskets**. The solutions are working well, but even after training, the villagers still need support for maintenance as well as to run the technologies properly and efficiently.

In the Ranichauri village in the Tehri Garhwal district, Uttarakhand, we already have established a base, with the women using EVD technologies and benefitting from them. Here, we have constructed *six improved cookstoves* that are now in field trials and testing to show how they consume less firewood and produce less smoke.

Promoting EVD Solutions from local levels to National Dialogue

We and our Partners are starting to promote EVD solutions from the grassroots level upward.

The first step was to create awareness among the communities and the Partners on the subject of climate change. The villagers already experience shifting and reduced monsoon rain, which is disrupting the farming cycle.

The second step was to introduce people to the EVD solutions, which mitigate the problems, and which they can adopt.

The third step is in progress now. It includes meeting with governmental officials at the district and block levels and telling them about the concept of EVD. These district officials have shown keen interest, and most of the Partners now are invited to participate in the monthly meetings of the District Magistrate. The Partners also are meeting with the elected local governance bodies to inform them of the EVD project and to tell them how they can help by having some funds for EVD solutions, such as water tanks.

The fourth step will be a National Dialogue Meeting, which is scheduled for June in Uttarakhand. It will bring together experts in climate change, university leaders, key NGOs, and autonomous governmental institutions such as the Forest Research Institute, Pollution Control Board, Soil and Water Conservation Board, and others. Our aim is to have recommendations for policy-makers by the end of the day. The recommendations also will be given to local media as well as shared with other stakeholders and decision-makers.

In preparation for events, we have compiled **21 case studies** of women using the EVD solutions.



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▲ Organic gardening, village planning workshop, efficient biomass stoves for household sweet industry, workshop on climate awareness including results of the UN negotiations. Photos by IDEA.

Sri Lanka

In Sri Lanka, Integrated Development Association (IDEA) has worked actively on Eco-Village Development (EVD) in three local villages in the central province. IDEA also advocates for EVD at all levels, from grassroots to national.

Demonstrating Solutions in Villages

The village activities started with gathering stakeholders and villagers for an initial workshop to raise awareness of climate change adaptation and mitigation, and of the EVD concept. The feedback from the participating division-level stakeholders was positive and the project could be implemented at the village level with their support.

A local community based organisation (CBO), "Arunalu", is now carrying out activities at divisional and village levels under the supervision of IDEA.

Following the initial workshop, EVD plans were developed for the villages with active involvement of the villagers through several village dialogues and PRAs (Participatory Rural Appraisals also known as Participatory Learning for Action).

Three-year plans dealing with environment, agricultural livelihood, non-agricultural livelihood, social sector, and infrastructure sector were developed. Emphasis was placed on solving issues and satisfying needs of the villagers in a low-carbon, sustainable manner and with village community empowerment. Contributions from village-level governmental officials was another special feature of this planning exercise.

As recommended in the initial planning, IDEA held some demonstrations of technology and some awareness-raising/training workshops for residents.

The integrated approach of this project is supported by IDEA's vast experience as well as its successes with improved cookstoves and other local solutions.

The main solutions demonstrated in the villages are:

- **Two large-scale efficient biomass stoves** have been built and demonstrated in two household businesses that initially were using conventional inefficient stoves. Brick-making improvements have been introduced in one of the villages.
- **Organic home gardening** awareness and training workshops have ignited a lively interest in many families to demonstrate the home-garden improvements. The importance of home gardening, how to prepare nurseries, the different kinds of organic fertilizers, and various other home-gardening techniques/best practices have been propagated through these workshops. Local seeds have been distributed, along with training on the best ways to grow them and to gain the best yields.
- **Energy-conservation workshops** have been held in the villages with facilitation by local government. The involvement of the local government is one of the successes in the project.

Promoting EVD Concept

The EVD concept and project activities have been presented nationally in a national workshop jointly organized with promotion of low-carbon development strategies in Sri Lanka. In addition, IDEA have organised a network for EVD in Sri Lanka that have met and discussed the EVD concept and the implementation of the recent UN "Paris Agreement".



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▲ Efficient cookstove, PV-powered lamp, biogas stove, biogas plant with cows, slurry from the biogas plant, PV on the roof, national consultation on INDC. Photos by Grameen Shakti.

Bangladesh

In Bangladesh, Grameen Shakti has been actively working on Eco-Village Development (EVD) in several villages. It is also advocating EVD solutions in discussions of national energy and climate strategies.

National Prosperous Development

Sustainable energy already is incorporated in Bangladesh's "Vision 2021", with a focus on dissemination of sustainable energy technologies all over the country and a target of 10% of electricity generation to come from renewable energy by 2020.

Sustainable energy also is included in the "One House, One Farm" strategy, with promotion of access to better cooking technologies; 85% of people depend on biomass today for cooking.

On the ground, sustainable energy is developing fast. Grameen Shakti, the pioneer organization promoting renewable energy in Bangladesh, has installed **1.7 million solar home systems, constructed 32,000 biogas plants, and one million improved cookstoves** throughout Bangladesh.

Active Participation on INDC and TNC

Maintaining these efforts and combining solutions, e.g., in the EVD concept, lead to opportunities for strong, low-carbon development of the country.

For this purpose, Grameen Shakti has participated actively in the national consultation on *Intended Nationally Determined Contribution (INDC)* of Bangladesh and in the national inception on the *Third National Communication (TNC)* to the United Nations Framework Convention on Climate Change (UNFCCC).

Demonstrating Solutions on the Ground

Grameen Shakti is highlighting EVD solutions in villages in the Manikganj District, about 50 km from Dhaka. Each of the villages has unique features in relation to usage of renewable energy technologies, demonstrating access to environmentally friendly energy as well as attaining a better standard of living.

In off-grid villages like Khowamuri and Sudhkhira, the focus is on using **solar home systems** to provide electric power. People need longer operating times for their lights, TVs, fans, and mobile-phone chargers. Moreover, **solar-powered water pumps** are suggested, as most of the irrigation pumps are run by diesel. People are also considering biogas plants and if a community-based biogas plant can be adopted.

The village Ashulia is highly focused on **biogas-based energy**. There are several households in the village that raise cattle and poultry. Owners of the cattle farm sell milk in a nearby market, whereas owners of the poultry farm sell their chickens in large city. Cow-dung from the cattle farm and poultry litter from the poultry farm are used to produce biogas to be used for households as well as for cooking on the farms.

The next step is to popularize the usage of **bio-slurry as fertilizer**. Comprehensive approaches to slurry usage as well as electricity generation from excess gas have been suggested in village discussions. Grameen Shakti has brought agriculture and biogas experts to the village to inform residents about better usage of slurry in the agricultural field and about quality of the slurry as organic fertilizer. Experts are considering introducing **solar-based dryers to dehydrate slurry** in an effort to obtain a higher, standardized nutrient content.



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