

DHUNGENTAR'S POST-EARTHQUAKE JOURNEY TO RECOVERY AND RESILIENCE

ICIMOD

FOR MOUNTAINS AND PEOPLE



About ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD), is a regional knowledge development and learning centre serving the eight regional member countries of the Hindu Kush Himalaya – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalisation and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream-downstream issues. We support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now, and for the future.



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PHOTOBOOK

DHUNGENTAR'S POST-EARTHQUAKE JOURNEY TO RECOVERY AND RESILIENCE

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Foreword



The NRA is highly pleased with its partnership with ICIMOD and IDRC on this earthquake reconstruction and rehabilitation project in Dhungentar, Nuwakot. Following the catastrophic 2015 earthquake in Nepal, the NRA has been committed to helping people in all affected regions rebuild and recover. We have been implementing and assessing reconstruction of disaster-resilient infrastructure by optimally utilising local labour, resources, and international assistance. The NRA signed a memorandum of understanding with ICIMOD to extend full cooperation in this pilot demonstration project aimed at rebuilding disaster-resilient houses for a vulnerable community. To facilitate low-cost housing construction, we approved the disaster-resilient interlocking compressed stabilised soil block (CSSB) technology. This technology has been a widely used alternative in disaster-affected regions in Nepal and around the world, and its use in Dhungentar demonstrates how innovative, alternative solutions can be tailored for mountain villages. The transformation in the village beyond reconstruction has been remarkable, and the project's accomplishments go in line with the NRA's aim of establishing secure and prosperous communities in Nepal.

Sushil Gyewali,
CEO, NRA



I am very pleased that ICIMOD's pilot demonstration project in Dhungentar has been successfully concluded after over two years of resolute effort. We wanted this project to extend beyond post-disaster reconstruction towards strengthening the village in a holistic manner. I am happy to see that the community has taken huge strides towards greater security and improved livelihoods. The project's integrated approach was based on the concept of resilient mountain villages, which was developed at ICIMOD to address challenges and opportunities specific to mountain communities. The project addressed a wide range of critical development areas to build the foundation for a self-sufficient village, and the locals showed remarkable willingness to embrace and contribute to the project's vision. Today, the village has admirably rebounded from the earthquake to become adaptable and resilient. The project's integrated approach has great potential for replication in regions across the Hindu Kush Himalaya. I would like to congratulate all collaborators, our dedicated ICIMOD team, and the Dhungentar people on the successful implementation of this project.

David Molden,
Director General, ICIMOD

Foreword



I am delighted that the earthquake reconstruction and rehabilitation project in Dhungentar has been successfully concluded. We began with a vision of creating a model mountain village with adequate infrastructure, proper access to basic services, and livelihood opportunities. We wanted to develop the local capacity so that the village could withstand future shocks, and we sought to ensure that this development was sustainable and replicable. I am pleased to see that we have come a long way and stayed the course. IDRC has been supporting research and development in Nepal since 1972 and has also had a longstanding partnership with ICIMOD. The Dhungentar project is a great example of our approach in Nepal: We have secured livelihoods, mobilised the locals, introduced innovative technologies, and created opportunities. Our experiences with this project will help share knowledge of integrated post-disaster rebuilding and rehabilitation in other regions. This is significant.

Anindya Chatterjee,
Regional Director – Asia, IDRC



It is heartening to witness the transformation of Dhungentar village after reconstruction. The change from dejected to smiling faces in the before and after photos speaks volumes of this transformation. It was a fulfilling experience overcoming challenges and realising what we envisioned for Dhungentar: a pilot reconstruction project focused on not only rebuilding shelters but also uplifting livelihoods by involving many different actors, including the private sector. Being a part of this project has been a rewarding experience, especially winning the hearts and minds of the marginalized community and making a small difference in their lives. I hope the opportunities that we have created will go a long way in rebuilding the community and I will be happy if locals will now find opportunities in Battar and not Qatar. I am sure that the overall experience of reconstruction and rehabilitation can be replicated in other parts of Nepal and the Hindu Kush Himalayan region in a post-disaster situation.

Basanta Raj Shrestha,
Director Strategic Cooperation, ICIMOD

Introduction

The 7.8 magnitude earthquake that struck Nepal on 25 April 2015 resulted in 8,790 deaths and the destruction of 498,852 private houses, with losses estimated to be around USD 7 billion, or about a third of Nepal's GDP. In the aftermath of such a catastrophe, the International Centre for Integrated Mountain Development (ICIMOD) partnered with the National Reconstruction Authority (NRA) and with support from the International Development Research Centre (IDRC) began implementing a project from April 2016 – 'Resilient Mountain Village: A Pilot Demonstration Project on Earthquake Reconstruction and Rehabilitation in Dhungentar, Nuwakot'.

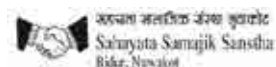
This pilot demonstration project focused on helping Dhungentar locals rebuild, recover, and rebound in a manner that insulates them from future shocks. With socioeconomically marginalised communities comprising the majority of the project beneficiaries, the aim was to support a particularly vulnerable village through a difficult transition period and to ensure that the village builds on its strengths and grasps opportunities. The project intended to address infrastructural frailties, reduce socioeconomic vulnerabilities, and elevate the living standards of Dhungentar locals in the long term, thereby building a resilient mountain village that is smart and adaptable to change.

Accordingly, the project divided its development activities into four core areas, or building blocks: disaster-resilient infrastructure, community mobilisation and capacity development, livelihoods and enterprise development, and access to services and environment improvement. These core building blocks address the community's vulnerabilities and involve activities that comprehensively strengthen all five village clusters in Dhungentar: Dhand, Mathillo Dhand, Archale, Karamfedi, and Ratamate. The wide-ranging development and resilience-building activities will also serve as a showcase for sustainable reconstruction and rehabilitation in a post-disaster situation, with the potential for up-scaling and wider knowledge dissemination.

This photobook shows the progression of Dhungentar's recovery, from the agonising destruction wreaked by the earthquake to the hope and resolve that slowly permeated people's lives. The locals' inherent resilience is reflected in their efforts to rebuild from the rubble, and their willingness to adopt new practices and lifestyles shows their appreciation of the need for change. The book is interspersed with short narratives of locals who present distinctive outlooks regarding their hardships following the earthquake, their fears and hopes, and their experiences with the project activities in Dhungentar. These photos depict their long and arduous journey from a vulnerable settlement to a more interconnected, close-knit, and resilient mountain village.



Local Collaborating Partner:





DISASTER-RESILIENT INFRASTRUCTURE

Building back better with earthquake-proof infrastructure

Photo: Santosh Raj Pathak

Earthquake Damage in Dhungentar: Ground Reality



(Top left) All but one house in Dhungentar were completely damaged by the earthquake. **(Top right)** Mud-bonded houses damaged by the earthquake. Before the earthquake, only two houses in Dhungentar were constructed with durable materials. **(Bottom left)** A house owner stands beside the ruins of his old house in Archale. **(Bottom right)** A house made uninhabitable by the earthquake.

Voices from Dhungentar

“ I remember the 1990 (1934 AD) earthquake. It seemed like the earth spun towards the sky. It made everything dance. And it took everything with it – there was nothing left. The recent earthquake wasn't as bad. But my house was flattened again. I had to struggle once again to build a new house. My youngest son helped me because he lives with me, but the rest don't even visit me ... I don't know. That's life. People go away, things are taken away. And it hurts. It pains me when I look at the new house. I had to sell my buffalo for it. I cry every time I see that the grass has grown wild in my field. I'm still living in my shed because I can't move into the new house till I perform a puja. It's ok though. I'm nearing 100, I think. I'm not scared of earthquakes. I've been through enough. I'll be gone soon anyway.”

Kanchhi Maya Tamang,
Karamfedi

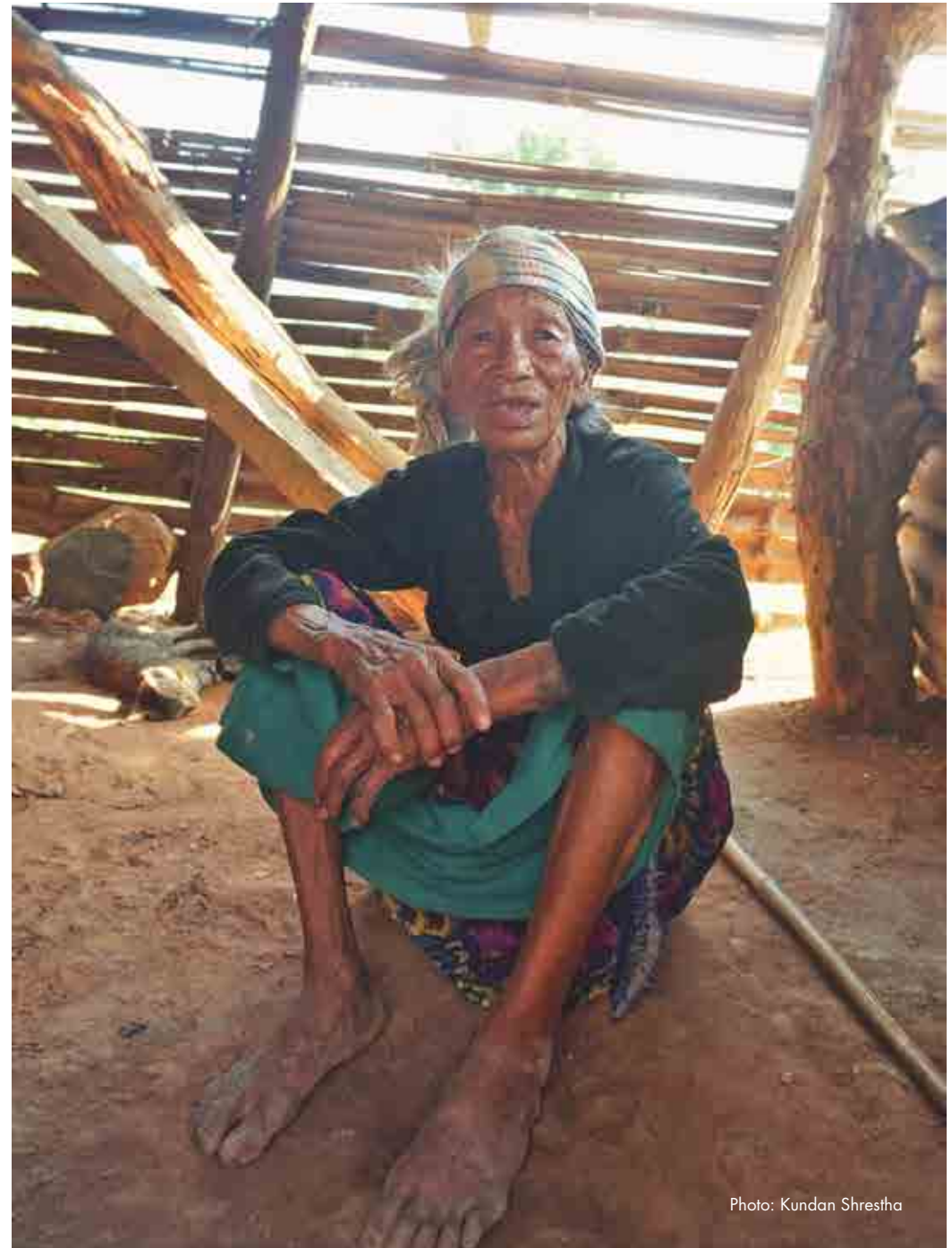


Photo: Kundan Shrestha

Geohazards in Dhungentar



(Top left, top right) Houses in Dhungentar damaged by the earthquake. Marginalized/Dalit communities constitute almost 96% of the settlement.
(Bottom left) Steep slopes and monsoon rains make some of Dhungentar's infrastructure vulnerable to landslides.
(Bottom right) A landslide during monsoon 2018 disrupts the main road from Battar to Dhand. Archale village has been designated a landslide-prone area.

Site Plan and Social Surveys



Photo: Samikshya B.K



Photo: Govinda Joshi



Photo: Govinda Joshi



Photo: Ram Kumar Tamang

(Top left) ICIMOD conducted a preliminary social survey in 2016 to assess each household's socioeconomic status and the state of Dhungentar's infrastructure.

(Top right) Site plan surveys were conducted for approval from the municipality regarding the reconstruction of houses.

(Bottom left) A one-day survey on community health and personal hygiene was conducted in February 2018 to identify areas of action.

(Bottom right) Geohazard assessments were conducted to identify vulnerable areas.

Knowledge partners:



Interlocking CSSB Production



All photos: Ram Kumar Tamang

(Top left) Locals trained in the production of interlocking compressed stabilised soil blocks (CSSBs) sift local soils. Walls constructed with interlocking CSSBs adjust progressively without damage or cracking during earthquakes as they are not bonded with cement.

(Top right) Locals engage in the production of CSSBs. Construction costs for CSSB houses are cheaper than those for reinforced cement concrete (RCC) houses as they can be produced using local resources by trained locals. **(Bottom left)** Locals pass around CSSBs for storage. **(Bottom right)** CSSBs ready for use stacked in a pile. These blocks have low CO₂ emission since they are not fired during production.

Collaborating partner: Knowledge partner:



Voices from Dhungentar

“ I didn’t even know how to use a shovel when I went for the block production training. They said we should learn how to make these blocks and that we would get them for free to build our houses. So I went. We were mostly women there as the men were away working. In 20 days, I slowly learned about the process and about all the materials needed. Then for around two months, we made those blocks every day. It became quite easy after a point. We made up to 500–600 blocks a day. I was one of the faster ones there. The blocks you see in my house—I probably made them! Having been involved in the process, I think they’re quite strong. But who knows how strong the next earthquake will be.”

Sunita Mijar
Ratamate



Photo: Kundan Shrestha

Interlocking CSSB Production



(Left) A trained local sieves soil, which is mixed with sand and cement to produce interlocking compressed stabilised soil blocks (CSSBs). Twenty-two participants, including 19 women, participated in the block production training.

(Right) Trained locals use machines to compress the mixture. Given the benefits and demand for CSSBs in the market, establishing a production enterprise that can generate employment opportunities is a viable option for locals.

Collaborating partner:



Knowledge partner:



CSSB Houses Constructed as per NRA guidelines



(Clockwise from top left) A total of 54 disaster-resilient houses and toilets were constructed in Dhungentar using cost-effective and eco-friendly interlocking compressed stabilised soil blocks (CSSBs).

Collaborating partner:



Voices from Dhungentar

“We weren’t prepared for the earthquake. The project built my house. I couldn’t put much money into it. I didn’t help in the construction either because I was working as a mason in Battar. I get better pay there. We agreed to rebuild our house using the blocks offered by the project because we couldn’t afford an RCC house and we don’t have enough land. But the blocks seem to be solid, even though they were produced right here in the village. They use a lot of rods, so the house must be strong. The construction work is complete, but I don’t have money right now to add the doors and windows. Dashain is coming. And wood is expensive! Even if I work on the doors and windows myself, I’ll only be able to get them when I get the third grant instalment.”

Bharat Sunar
Archale



Photo: Kundan Shrestha

RCC Houses Constructed as per NRA guidelines



Photo: Kundan Shrestha



Photo: Tashi Chonjur



Photo: Tashi Chonjur



Photo: Kundan Shrestha

(Clockwise from top left) A total of 36 disaster-resilient were constructed in Dhungentar using reinforced cement concrete (RCC). Although the project promoted the use of CSSBs for construction, the perception of safety associated with the RCC technology was a major factor for the construction of RCC houses. In addition, beneficiaries with greater spending capacity preferred more freedom in determining the size and design of their house.

Collaborating partner:



Voices from Dhungentar

“My son’s house [right] was built using the locally produced blocks. I used the RCC technology for my house [left]. I chose it because I have faith in RCC. I worked as a contractor for 25 years; I built many RCC structures. They’re extremely strong. Fired bricks just have a different strength that I don’t think the locally produced blocks have. They’ve said my son’s house will withstand earthquakes. I suppose it will—they’ve used a lot of rods. But then they don’t use much cement. That’s also what makes the house cheaper to build, and that’s why my son opted for it. I want something I can rely on, even if it means taking a loan and paying more. If I wish, I can add floors to my house too. I have one eye on the future!”

Surya Bahadur Sunar
Mathillo Dhand



Photo: Kundan Shrestha

Before and After Reconstruction



(Top left) Saila Tamang's damaged house after the 2015 earthquake.

(Top right) Saila has constructed a new house in Karamfedi using reinforced cement concrete (RCC).

(Bottom left) Lachhuman Kami stands in front of his damaged house in Archale.

(Bottom right) Lachhuman Kami's new house, constructed using interlocking compressed stabilised soil blocks (CSSBs), was one of the first disaster-resilient houses to be built in Archale.

Collaborating partner:



Before and After Reconstruction



(Top left) Goma Tamang's house in Karamfedi after the earthquake.

(Top right) A new house has been reconstructed with the project's support.

(Bottom left) Kanchhi Maya Tamang in front of her damaged house in Karamfedi.

(Bottom right) Kanchhi Maya now has a disaster-resilient house.

Collaborating partner:



Dhungentar: A Disaster-Resilient Village



(Top left) Construction work at a house made of interlocking compressed stabilised soil blocks (CSSBs).

(Top right) CSSB houses in Dhand.

(Bottom left) Locals work in the field in Karamfedi, with CSSB houses to the right.

(Bottom right) A cluster of blue-roofed CSSB houses in Archale.

Collaborating partner:



Dhungentar: A Disaster-Resilient Village



Photo: Santosh Raj Pathak



Photo: Santosh Raj Pathak

(Left) Sabitri Mijar sits atop the sill of her newly constructed house in Ratamate.
(Right) Junkiri Sunar makes herself at home in the porch of her new house in Archale. Secure infrastructure is particularly important in Dhungentar given the settlement's socioeconomic fragility.

Collaborating partner:



Roads and Trails



Photo: Govinda Joshi



Photo: Kundan Shrestha



Photo: Santosh Raj Pathak



Photo: Govinda Joshi

(Top left) Locals participate in the construction of the 115 m Dhand-Karamfedi trail.

(Top right) The completed Dhand-Karamfedi trail, which eased transportation of construction materials to Karamfedi.

(Bottom left) A woman uses the 367 m Dhand-Archale trail.

(Bottom right) The 1,537 m Ratamate-Archale access road supported by the project.

Roads and Trails



Photo: Kundan Shrestha

A wide view of the Dhand-Archale trail and bridge, with Archale in the foreground. The construction of new roads and trails has drastically improved connectivity within Dhungentar.

The Dhand-Archale Bridge and Irrigation Channel



Photo: Santosh Raj Pathak



Photo: Santosh Raj Pathak



Photo: Kundan Shrestha

(Top) Without a bridge along the Dhand-Archale trail, the Khahare Khola between Dhand and Archale was hazardous to cross during monsoon. The project constructed a bridge to connect the trail road.
(Bottom left) The project's social mobilisers on the Dhand-Archale bridge (span 6.5 m and width 1.65 m).
(Bottom right) An irrigation canal was constructed beside the bridge to deliver water to nearby farms.

Voices from Dhungentar

“ I was one of the first ones to build my shelter in Archale. But Archale was so inaccessible then; it was so difficult to get here, let alone bring in construction materials. During monsoon, the path was very slippery and we couldn't cross the stream. On bad days, my husband couldn't get to work and our children couldn't go to school. We struggled to complete our house. But it was necessary. It was much, much easier for people who made their shelters after the trail from Archale to Dhand was constructed. It's even better now with the bridge over the stream. It's very, very easy now. I can't believe we used to struggle to get to places. ”

Santa Sunar
Archale



Photo: Kundan Shrestha



COMMUNITY MOBILISATION AND CAPACITY DEVELOPMENT

Recovering with greater community engagement and ownership

Photo: Kundan Shrestha

Community Familiarisation and Engagement



(Top left) ICIMOD organized a two-day familiarisation programme for 9 Dhungentar villagers at Godavari and Sankhu.

(Top right) Different technologies were demonstrated, and the project's plans were explained to the Dhungentar representatives.

(Bottom left/right) The participatory 3-dimensional model (P3DM) is an interactive mapping method used to familiarise locals with their landscape. Locals were engaged in creating this model under the guidance of ICIMOD experts.

(Bottom right) P3DM helps locals acquire a broader perspective regarding their area's geography.

Collaborating partner:



Encouraging Community Action: Aamasamuha



Photo: Kundan Shrestha

This local community organisation meets monthly to empower women and collectively address social issues, create social safety nets, and actively lead the community. With a sizeable number of men working away from Dhungentar, the vacuum in community leadership needs to be filled by women. The Aamsamuha (Mothers' Group of Dhungentar) has volunteered for different project activities as well, such as clean-up campaigns and manual construction works.

As a community safety net, the Dhungentar Aamasamuha has opened a community savings fund, with small monetary contributions collected from community members each month.

Voices from Dhungentar

“Before the Aamasamuha (Mothers’ Group), there was no formal women’s group for anything. We have common problems but we’ve never organised to tackle them together. I’ve been attending the Aamasamuha meetings regularly because we try to work on things that help us all. We’ve been regularly cleaning the village. We’ve helped out in construction activities. We even contribute 100 rupees to a savings fund every month. We’ve come together in a way women haven’t done before. That really makes me happy. I hope it continues. I really do. But then the men have been allowing us to do this because the project has helped us organise. I’m not sure how things will continue after the project is complete. We want to continue, but there’s bound to be resistance. For example, we’ve been discussing how we can deal with alcoholism and gambling in the village. But men will be resistant to that idea. And naturally they’ll be opposed to our group.”

Mamata Sunar,
Mathillo Dhand



Photo: Kundan Shrestha

Mobilising the Community: Social Mobilisers



(Top left) Four young women were identified from different village clusters in Dhungentar to help mobilise and engage the local community.

(Top right) They engage in basic door-to-door data collection, information dissemination, procurement, and community mobilisation.

(Bottom left) The social mobilisers are being imparted basic computer skills through informal training using four Dell computers donated by World Distribution Nepal.

(Bottom right) Social mobilisers assist in World Environment Day 2018 activities in Dhungentar.

Knowledge partners:





All Photos: Santosh Raj Pathak

Voices from Dhungentar

“When the project approached us for working as social mobilisers, we were uncertain about what we’d be able to do. But we were sure we wanted to contribute. We had been seeing houses being rebuilt and different development activities being conducted. As young locals affected by the earthquake, we wanted to be useful in whatever way. We help with procurement. We maintain records and inventories. We knock on doors and collect and give information. We’re part of this community, so we know the people. They know us. It’s easier to help and ask for help that way. We attended and helped organise trainings and learned how to participate in meetings. We began to speak up for the village. We’ve learned so much, and we hope we’ve done some good.”

(L-R) Social mobilisers Bhawani B.K., Apsara B.K., Sarmila Sunar, and Samikshya B.K.

Improving Community Spaces: Chautari



(Top left) The old chautari in Dhand, Dhungentar.

(Bottom left) The chautari was improved to enable community bonding and beautify an important community landmark.

(Right) The chautari offers space for community engagement and is an important part of information flow in the community

Multipurpose Community Centre and Health Clinic



Photo: Santosh Raj Pathak



Photo: Kundan Shrestha



Photo: Ram Kumar Tamang



Photo: Ram Kumar Tamang

(Top left) A multipurpose community centre was constructed in Dhand to create a venue that facilitates community mobilisation and capacity building. **(Top right)** Construction work on the community centre and the health clinic (background). **(Bottom left)** The two-room health clinic will provide basic health services to the community. **(Bottom right)** The 1,810 sq. ft. centre will accommodate group activities such as meetings of the local community organisations, workshops, and trainings and provide community services such as health camps and child care.

Co-financing partner:



Knowledge partner:





LIVELIHOODS AND ENTERPRISE DEVELOPMENT

Bouncing forward through socioeconomic
resilience and livelihood opportunities

Photo: Santosh Raj Pathak

Hira Lal Sunar's Agriculture Model



Photo: Kundan Shrestha

The project's overarching goal of promoting sustainable development in Dhungtar involved engaging the locals as stakeholders in their own livelihood betterment. Hira Lal Sunar, a project beneficiary residing in Mathillo Dhand, was identified as a champion who would be committed to creating a model agricultural farm. By shifting traditional, subsistence agriculture to a modern, integrated farming system for agribusiness, this sustainable model offers diversified income sources and can be replicated throughout the community.

Voices from Dhungentar

“ I used to be away constantly for construction work. But after the earthquake struck and my little daughter was diagnosed with a heart condition, I wanted to work closer to home. I got the opportunity to work on the plastic tunnel installed in the project’s model house. I was quite impressed with what you could do with it, so I was readying bamboos to construct my own. Then, as luck would have it, the project approached me. They said they’d help me in creating a modern farm in my land. But they also warned me that I would need to work hard. And so I did. You have to slog if you want something to be good, don’t you? We started with a plastic tunnel, we kept adding new systems, and now we’ve got something the whole village can learn from. They come to me and ask advice now! And I tell them what I’ve learned: you need to care for each sapling like you would your children—like everything depended on it. And you need to learn from learned people and work hard. Anything will grow then. ”

Hira Lal Sunar,
Mathillo Dhand



Photo: Kundan Shrestha

Hira Lal Sunar's Agriculture Model



Photo: Santosh Raj Pathak



Photo: Santosh Raj Pathak



Photo: Kundan Shrestha



Photo: Kundan Shrestha

(Top left) Hira Lal Sunar, owner of the agriculture model, and his family in front of the plastic tunnels in his farm.

(Top right) Shanti Sunar, Hira's wife, picks tomatoes from a plastic tunnel.

(Bottom left) Oyster mushroom sprouts in the mushroom tunnel.

(Bottom right) Shanti feeds the fish in the farm's fish pond.

Hira Lal Sunar's Agriculture Model



Photo: Santosh Raj Pathak



Photo: Santosh Raj Pathak



Photo: Santosh Raj Pathak

(Right) Shanti weighs tomatoes in her home. The organic produce is sold within Dhungentar and in markets in Battar town.

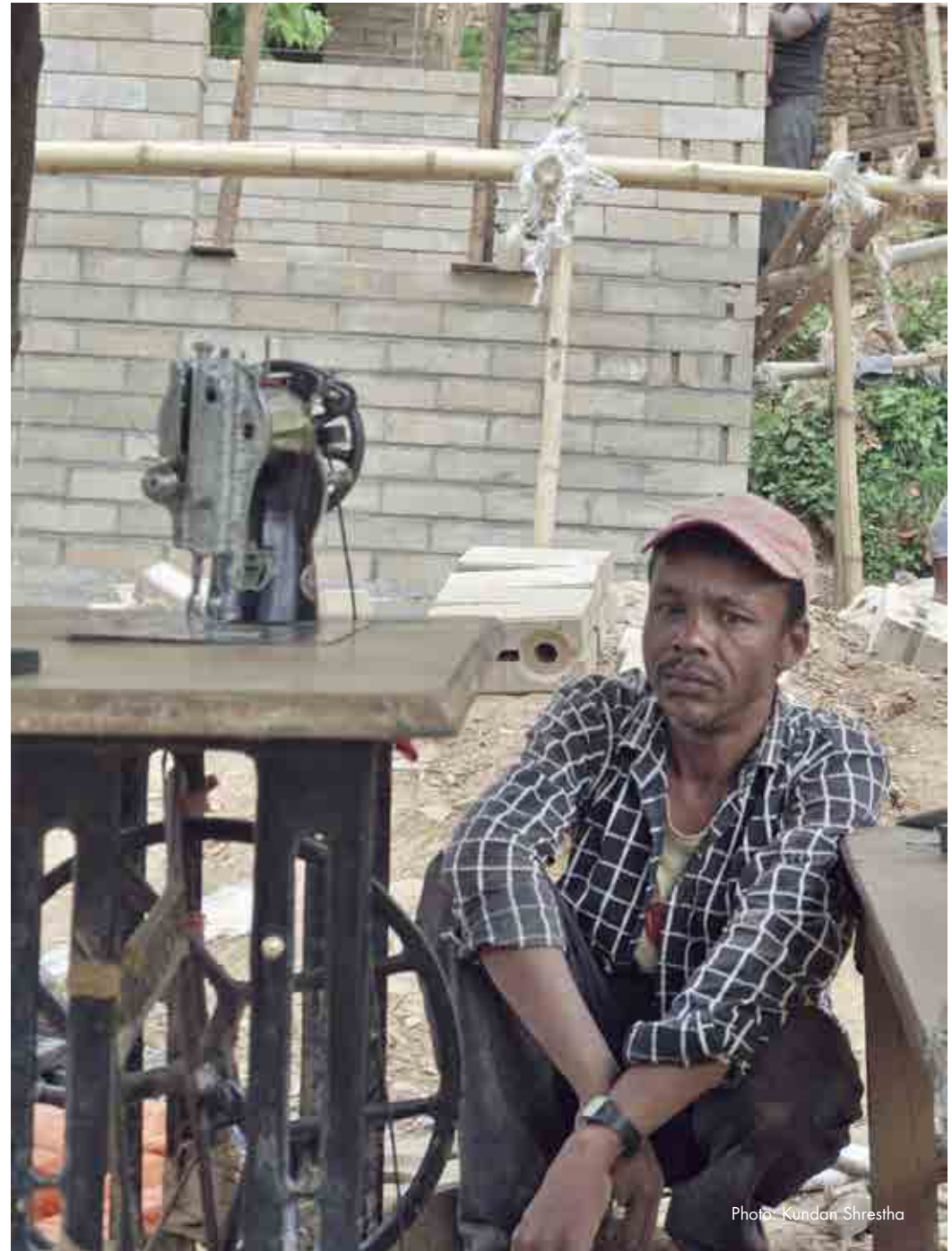
(Top left) Organic tomatoes grown in the plastic tunnels.

(Bottom left) Hira checks a beehive. Honey can be extracted for around six months in a year.

Voices from Dhungentar

“My sewing machine was damaged during the earthquake. I got by the past few years tying a stick to prop it up, but last month the wheel stopped working. I need to take it to its hospital! I can't really afford its repair. I didn't have anything to build my life after the earthquake. People around me started rebuilding, but I just felt hopeless. The people from the project kept telling me to build my house. But I didn't feel I could do anything. They persisted. After I recently received compensation for my old, damaged house that was demolished for road expansion, I used it to buy new land. Then I requested the project to help build a new home. It will be good to have a new roof over my head. But I don't know what I'll do about my machine. I'm hoping something turns up.”

Hari Pariyar,
Archale



Helping Livelihoods: Hari Pariyar



Photo: Ram Kumar Tamang



Photo: Kundan Shrestha



Photo: Santosh Raj Pathak



Photo: Santosh Raj Pathak

(Top left) Hari was landless and homeless after the earthquake, with little hope of owning land or a house.
(Bottom left) With the project's support, Hari was among the last locals to begin construction on a new house.
(Right) As part of the project's livelihoods support, Hari received a new sewing machine.

Watermill Improvement



(Top left) The watermill in Karamfedi became functional after the project's intervention. Two watermills were improved in Dhungentar.

(Bottom left) Ram Bahadur Mijar in front of his watermill in Karamfedi.

(Right) Grains are ground in the watermill.

Voices from Dhungentar

“ I built this watermill around 20 years ago for an alternative source of income. It worked pretty well, but I didn't use it regularly while I was working as a mason. When the earthquake struck, my house and the mill both collapsed. It went a bit downhill for me from there. I'm not on the best of terms with my son and his family, and my wife lives with them. It was hard rebuilding my house, even with help from the project. I've stopped masonry and the little land I have is not really suitable for farming right now. But we've made improvements to the watermill, and I may finally have something to depend on. It grinds grain much faster now. Villagers come to me with barley, wheat, maize, and I get a portion of the final product. The watermill will help for at least six months or so every year. For the rest of the year, I'll figure something out.”

Ram Bahadur Mijar,
Ratamate



Photo: Kundan Shrestha

Blacksmith and Carpenter Work Shed Improvement



(Left) Carpenters in Archale using a new rotary saw. A carpenter work shed was constructed and equipment was provided to improve livelihoods.
(Top right) Makeshift blacksmith work sheds were severely damaged during the earthquake. Groups of blacksmiths in Dhungentar work in such sheds to support their families.
(Bottom Right) A model blacksmith shed has now been built in Mathillo Dhand. Another shed has been constructed in Archale and new tools have been provided.

Voices from Dhungtar

“The old, rickety shed we used for work was bound to collapse. We later built a makeshift shed, but it will give in too. So we are improving the shed now. It will be sturdier and neater. We'll add machines and tools too. It will be better. You know, our forefathers used to fan flames using animal skin. We used to use a manual machine. Now we have an electric machine! Things are relatively easier these days, but it's still a difficult craft. It's hard labour, among flames and metal, throughout the year. My father taught me metal work, and his father taught him, but our children did not want to continue. They say it's too hard. My son works in Kathmandu as a goldsmith. It's ok ... He does well there. If he decides to continue the tradition when he comes back, things will definitely be easier than it used to be for us and our fathers.”

Gopi Lal Sunar,
Mathillo Dhand



Diversified Income Source: Chicken Coops



Photo: Santosh Raj Pathak

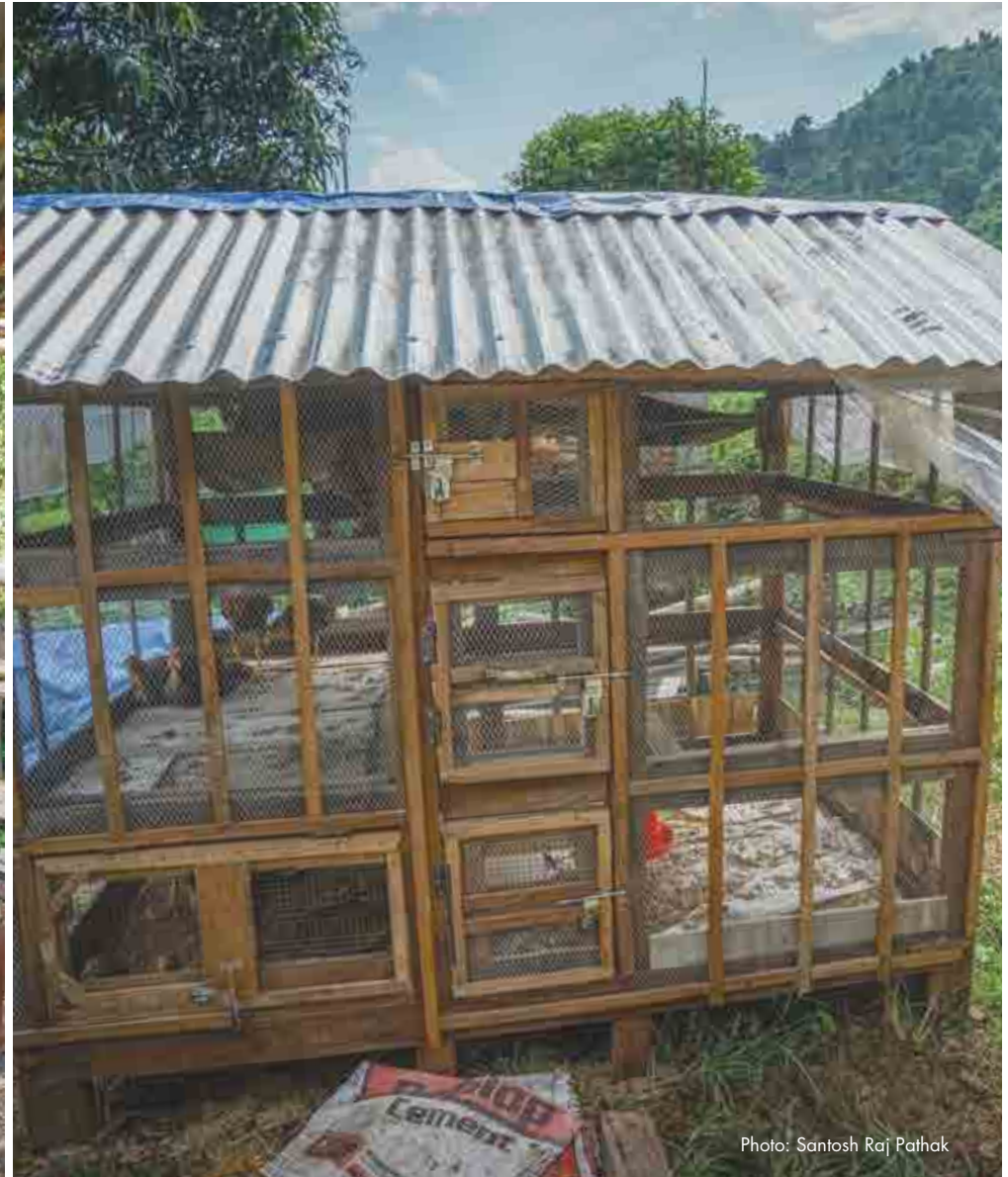


Photo: Santosh Raj Pathak

(Left) Chicken coops are commissioned by locals, providing a source of income for carpenters.

(Right) These chicken coops are two- or three-tiered, unlike traditional coops, and allows more space. Many locals are involved in poultry farming, and these coops allow them to expand their stock.

Livelihood Training



(Top left) Eight different training programmes were conducted to develop practical skills for starting small home-based businesses.

(Top right) Participants of the crystal jewellery-making training practice their skill.

(Bottom left) Incense sticks made by participants.

(Bottom right) A participant rolls a mixture for making laundry soap.

Collaborating partner:



Voices from Dhungentar

“My time as Livelihood Officer for this project has been extremely rewarding. As a Nuwakot local myself, it has been an honour to help the people of Dhungentar. Early on, I saw the need for mobilizing and training women in the village, since many men have migrated for work. The participation of women in our skill training programmes and other project activities has been very encouraging. Such empowerment and social mobilization will be very beneficial in the future. I am also very happy with the modern farming practices we have introduced in the village. Hira Lal Sunar’s agriculture model displays some very practical and cost-effective technologies, and we have already seen this encourage other farmers. We have implemented many programmes and toiled to impart skills, provide options, and create new opportunities. I am happy to see that we have created a strong foundation for Dhungentar locals to help them lead more sustainable, fulfilling lives.”

Deepak Pathak,
Livelihood Officer, Sahayata Samajhik Sanstha



Photo: Santosh Raj Pathak

ACCESS TO SERVICES AND ENVIRONMENT IMPROVEMENT

Rebounding with improved services and environment-friendly practices



Photo: Santosh Raj Pathak

Til Kumari Sunar's Model House



Photo: Kundan Shrestha

In an attempt to encourage households in Dhungentar to adopt environment-friendly practices in daily household management, this project constructed a model house that showcases an integrated system of water, energy, and farm management. The model house was constructed for Til Kumari Sunar, a widow living alone in Mathillo Dhand, to support a particularly vulnerable beneficiary and encourage her to champion modern, cost-effective practices for daily household tasks.

Til Kumari Sunar's Model House



(Top left) Biogas is used to cook food.

(Top right) Rain water is harvested for domestic use and irrigation.

(Bottom left) A solar drier is used to dry and preserve agricultural produce.

(Bottom right) Til Kumari rests in the porch of her model house, with her parabolic solar cooker in view to the right.

Co-financing partner: Knowledge partner:



Alternative Energy
Promotion Centre



Til Kumari Sunar's Model House



Photo: Santosh Raj Pathak



Photo: Santosh Raj Pathak



Photo: Santosh Raj Pathak

(Left) Til Kumari tends to the tomatoes in her plastic tunnel.
(Top right) The model house also has a plastic-lined pond to store water for dry seasons.
(Bottom right) Til Kumari checks one of her beehives.

Co-financing partner:



Alternative Energy
Promotion Centre

Knowledge partner:



गुरुवा प्लॉटि अंग
Centre for Rural Technology, Nepal (CRTN)
Rural Technology Development - 2011/12

Solar-powered Community



(Top left) Three solar lamps were distributed to each household by the Vice Mayor of Bidur Municipality.

(Top right) ICIMOD staff demonstrate the use of the 3 W lamps.

(Bottom left) Solar panels placed in each household for domestic consumption.

(Bottom right) Two 1200 W solar panels that will supply power to 70 community solar lamps throughout Dhungentar.

Co-financing partner:



Community Engagement: Environment Improvement Activities



Photo: Kundan Shrestha



Photo: Kundan Shrestha



Photo: Clean Cooking Alliance

(Left) A local woman plants a sapling as part of the community plantation activity on World Environment Day 2018.

(Top right) Dustbins were distributed to each household for a cleaner village.

(Bottom right) Locals gather for a demonstration by Clean Cooking Alliance on the environmental and health benefits of smoke-free kitchens and clean cookstove usage.

Knowledge partners:



Technology and Empowerment: E-Sewa



(Left) Samikshya B.K., a social mobiliser for the project, has become a local vendor for e-Sewa, an e-commerce company.
(Top right) Samikshya offers online services to the entire village, making payments for phones, TV, utilities, and travel.
(Bottom right) The other social mobilisers also assist Samikshya in her role as a vendor.

Co-financing partner:



Voices from Dhungentar

“So many locals approach me these days to recharge their mobile phone account or pay their monthly TV charges. People used to go all the way to Battar for these services; it takes almost 2 hours if you walk. I provide e-Sewa services here as a vendor, and they're all happy they can get work done here. Oh it's quite easy to do: you have an account that you have to log into, just like Facebook. Then you recharge whatever you need. Of course, the internet connection here is very unreliable, so that affects business. But hopefully things improve with time. I'm not sure if people know about all the things you can do online to make things easier. With time the village will become more used to this. We can slowly introduce online payments for water, electricity, travel ... Then everyone can use this service, and that will be good business for me too!”

Samikshya B.K.,
Archale



Photo: Santosh Raj Pathak

Private Sector Collaboration: From Qatar to Battar



Photo: Kundan Shrestha



Photo: Kundan Shrestha



Photo: Ram Kumar Tamang



Photo: Santosh Raj Pathak

(Top left) Private sector engagement was a crucial component of the project's aim to create better employment opportunities in Dhungentar and make the village a resilient and smart community, drawing Dhungentar locals from Qatar to Battar.

(Top right) Dabur Nepal contributed saplings for plantation in landslide-prone areas on World Environment Day 2018.

(Bottom left) World Distribution Nepal has donated 4 Dell computers to be placed in the multipurpose community centre.

(Bottom right) Nabil Bank has contributed to the construction of the multipurpose community centre in Dhungentar.

Collaborating partner:



Knowledge partners:



Private Sector Collaboration: From Qatar to Battar



(Top left) The project's social mobilisers have started working as e-Sewa vendors, offering online payment services for the entire community.

(Top right) The Rotary Club (Durbar Marg) donated 100 units of essential toolkits to the Dhungentar community for their daily household management. These toolkits included water filters, mini water containers, saws, hammers, nails, screwdrivers, pliers, trowels, clotheslines, and tarpaulins.

(Bottom left) Clean Cooking Alliance conducted an open session on the environmental and health benefits of the community-wide use of clean fuel.

(Bottom right) Representatives from various private sector companies visited the project site on World Environment Day 2018 and spoke about collaborative opportunities.

Co-financing partner:



Knowledge partners:



Hear from the Project Team



In Dhungentar, we envisioned helping marginalized people rebound from the catastrophic 2015 earthquake while ensuring that they were fully involved in the rebuilding process. We wanted to understand the locals' problems and get their views on how to create a resilient community. We conducted familiarization programmes and used tools like the participatory 3D model to get a sense of the challenges that lay ahead. We used local labour and resources as much as possible, and we saw great willingness among community members to contribute to reconstruction efforts. I think Dhungentar has come a long way since the earthquake. The people here show great resilience and have high hopes for a better future.

Govinda Joshi,

Programme Coordinator, Reconstruction and Rehabilitation,
ICIMOD



It was a privilege to work in the Dhungentar project for 16 months. My sincerest thanks and gratitude to ICIMOD and others who contributed to this magnificent project. We faced many challenges along the way, but we pushed through with our distinct vision. The impact of the caste system and migration (particularly men) on families in Nepal is considerable, and it should be a sacred duty to minimise this. On a personal note, working away from my family, who are in Australia, was difficult, which unfortunately cut short my time with the project. However, as the project progressed, it was heartening to see the villagers' despair change into security and hope. I would like to extend my heartfelt thanks to the Dhungentar villagers – especially the women folk – who were truly inspirational! My best wishes and happiness to all at ICIMOD.

Achut Man Singh,

Programme Coordinator, Reconstruction and Rehabilitation,
ICIMOD

Hear from the project team



We were able to mobilise private sector participation in the Dhungetar project. More than 25 companies were invited for field visits to raise awareness of the resilient mountain village pilot and to explore their interest as partners. The in-kind and cash contributions were very much appreciated and welcomed. The engagement of the private sector added value to the multi-stakeholder partnership in this unique project. Thus, the project is also a model of partnerships with businesses to showcase how companies can be involved in the sustainable development agenda as well. We are very grateful for the support and cooperation extended by the private sector in Nepal.

Naina Shakya,

Partnership and Private Sector Specialist, Strategic Cooperation Unit,
ICIMOD



The 2015 earthquake was a tragedy. However, in its aftermath, there was the opportunity to build back better. The community in Dhungentar joined hands with ICIMOD to build a sustainable and thriving community. I was fortunate to be part of this project from its inception, and over two years of continuous effort and commitment by the project team and local people has brought us together in a way I had never thought was possible. Having lived among the locals throughout the project, I have shared their hopes and fears as we have transformed the community into a beautiful settlement. Public and private infrastructure are now in place to make the lives of Dhungentar locals easier. There are income-generating opportunities to sustain families and a multipurpose community hall to unite the community. We have achieved what we set out to do: change the lives of vulnerable disaster victims for good.

Ram Kumar Tamang,

Reconstruction and Rehabilitation Assistant,
ICIMOD

Hear from the project team



It was a great opportunity for the Innovative Design Concern (INDECO) team to work as a technical partner with ICIMOD on the Dhungentar project. Our main objective was to support an owner-driven reconstruction module to bounce forward better with the help of Habitech Building Technology, which emphasises cost-effective, labour-intensive rural construction. We have emphasized the use of locally available materials to produce energy efficient and environment friendly blocks. In addition to construction, the project also focused on technology transfer and skill development of local people to help them find employment or even start out as entrepreneurs after completion of the reconstruction project. In addition, the project offered various training and awareness programmes to improve their livelihoods and increase incomes. This is a complete reconstruction package focused at the grassroots level that will help in developing every aspect of the community and create a resilient mountain village.

This is a great achievement for INDECO and its project team. It is overwhelming to see Habitech technology spreading happiness all around.

Ishwar Lal Joshi,
Chairperson, INDECO



What I appreciated the most about the project was the integrated approach for post earthquake reconstruction and recovery. Integrated approach in the sense that it was not just about physical reconstruction of houses and infrastructures but an equal emphasis on strengthening social capital and environmental stewardship. Moreover, the project encouraged active engagement and participation from local people in every step of the project from planning and decision making to project implementation. Ensuring community participation was no mean feat while dealing with entrenched local village politics and elders. Yet we achieved this after tireless and continuous consultation with every stakeholder in the community. Today, it gives me immense satisfaction to see that every bit of effort we put in for the project has brought smiles on people's faces, once shattered by the devastating earthquake of 2015.

Sunil Tamang,
Reconstruction and Rehabilitation Assistant,
ICIMOD

Project Field Team

ICIMOD

Govinda Joshi, Project Coordinator

Achut Man Singh, Project Coordinator

Ram Kumar Tamang, Reconstruction and Rehabilitation Assistant

Sunil Tamang, Reconstruction and Rehabilitation Assistant

Ramesh Singh, Reconstruction and Rehabilitation Assistant

Sahayata Samajik Sanstha

Santosh Rijal, Project Coordinator,

Deepak Pathak, Livelihood Officer

Laxman Khadka, Sub-Engineer

Sarmila Sunar, Social Mobiliser

Samikshya, Social Mobiliser

Apsara Sunar, Social Mobiliser

Bhawani Sunar, Social Mobiliser

Innovative Design Pvt. Ltd.

Bishal Raj Vaidya, Engineer

Sijan Joshi, Civil Engineer

Dikshant Gautam, Sub-Engineer

Ghanshyam Khadka, Sub-Engineer

Rakshya Kunja Supply Pvt. Ltd.

Tirtha Bahadur Bajgain, Labour Supervisor

Sameer Sapkota, Labour Supervisor

Ganga Prasad Dabadi, Labour Supervisor

Partners

CORE PARTNERS



Government of Nepal
**National Reconstruction
Authority**



IDRC | CRDI

International Development Research Centre
Centre de recherches pour le développement international

COLLABORATING PARTNERS

The following organisations were involved in the implementation of the project's core activities at the local level:



सहायता सामाजिक संस्था नुवाकोट
Sahayata Samajik Sanstha
Bidur, Nuwakot



GOVERNMENT PARTNERS

ICIMOD acknowledges the guidance and cooperation of the following government bodies during the implementation of the project:



- District Coordination Committee (DCC)
- Bidur Municipality
- Department of Urban Development and Building Construction (DUDBC)
- District Administrative Office
- District Agriculture Development Office (DADO)
- District Horticulture Office
- District Disaster Risk-Reduction Committee (DDRC)
- District Emergency Operating Centre (DEOC)
- District Forest Office (DFO)
- District Soil Conservation Office (DSCO)
- Nepal Electricity Authority

CO-FINANCING PARTNERS

ICIMOD expresses its appreciation of the following co-financing partners for their financial contribution towards different project activities:



Government of Nepal
**National Reconstruction
Authority**

Co-financed the reconstruction
of houses



**Alternative Energy
Promotion Centre**

Co-financed the construction of biogas
plants; contributed 96 sets of solar lamps for
all households; two 1,200 W solar panels
for community solar street lamps



Supported the construction of the
multipurpose community centre



Donated 100 units of
Aquabox - water filter to each household

PRIVATE SECTOR PARTNERS

The involvement of the following private sector partners was integral to the project's livelihood improvement and capacity-building activities:



KNOWLEDGE PARTNERS

The following organisations were instrumental in creating and disseminating knowledge related to reconstruction and rehabilitation in Dhungentar:





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