

# 20 Years *of* MDI-Nepal

(2002-2022)

(Manahari Development Institute -Nepal)

**SOME OBSERVATIONS ON THE STATE OF ITS PAST & PRESENT COURSE**

**An NGO working in Social Transformation,  
Environment, Food Security, Nutrition and  
Livelihood Sector**



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## ABBREVIATIONS AND SYNONYMS

<b>AFU</b>	: Agriculture and Forestry University
<b>APFED</b>	: Asia-Pacific Forum for Environment and Development
<b>BAU</b>	: Bangladesh Agriculture University
<b>CBOs</b>	: Community Base Organizations
<b>COMDEKS</b>	: Community Development and Knowledge Management
<b>COVID</b>	: Corona Virus Diseases
<b>CTP</b>	: Cash Transfer Programme
<b>DADO</b>	: District Agriculture Development Office
<b>DANIDA</b>	: Danish International Development Agency
<b>DDC</b>	: District Development Committee
<b>DTMP</b>	: District Transport Master Plan
<b>ERB</b>	: East-Rapti River Basin
<b>FAO</b>	: Food and Agriculture Organization of United Nations
<b>FCR</b>	: Feed Conversion Ratio
<b>GEF</b>	: Global Environment Facility
<b>GIZ</b>	: German Technical Cooperation
<b>GoN</b>	: Government of Nepal
<b>Ha</b>	: Hectare
<b>INGO</b>	: International Non-Government Organization
<b>Kgs</b>	: Kilograms
<b>MCHN</b>	: Mother and Child Health and Nutrition
<b>MDI</b>	: Manahari Development Institute
<b>NGO</b>	: Non-Government Organization
<b>NPR</b>	: Nepalese Rupees
<b>NTFPs</b>	: Non - Timber Forest Products
<b>PAF</b>	: Poverty Alleviation Fund
<b>RCIW</b>	: Rural Community Infrastructure Works
<b>SALT</b>	: Sloping Agriculture Land Technology
<b>SGP</b>	: Small Grants Programme
<b>SIS</b>	: Small Indigenous Species
<b>UGs</b>	: Users Group
<b>UKAID</b>	: United Kingdom Agency for International Development
<b>UN</b>	: United Nations
<b>UNDP</b>	: United Nations Development Programme
<b>USD</b>	: United States Dollar
<b>VDC</b>	: Village Development Committee
<b>VFM</b>	: Village Model Farms
<b>WFP</b>	: World Food Programme
<b>WWF</b>	: World Wildlife Fund

## BIOGRAPHY

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A freelance consultant having an extensive experience in programme management, coordination and evaluation in emergency, recovery and development contexts. Have worked in some of the major humanitarian emergencies (Indonesia, Iran, Iraq, Myanmar, Nepal, Kyrzgystan, Ukraine, Uganda, and Bangladesh) at both operational and strategic levels within UN and INGOs. Have coordinated emergency programmes/clusters/sectors and in design, implementation. Have reviewed projects and institutions to draw lessons for further improvements.

Proven capabilities and experience in developing strategic and technical documents including needs assessment, review and/or assessment of projects, formulation of SOPs/ framework documents, mapping of

service providers (in in-kind and cash transfer projects) in humanitarian contexts. Well experienced in inter-agency coordination and facilitation of teams for vulnerability and humanitarian needs assessments and/or feasibility assessments.

Very well versed in organizational capacity building including training design and facilitation of the training and workshops. Personally, able to deliver capacity building training on all major aspects of cash transfer programming (CTP/CVA) to professionals including mainstreaming of social protection, GBV and environment within the project cycle management and appraisal processes.



# 20 Years of MDI-Nepal

(2002-2022)  
(MANAHARI DEVELOPMENT INSTITUTE -NEPAL)

## Some Observations on the state of its Past and Present Course

### 1. Background

Manahari Development Institute-Nepal (MDI Nepal), established formally on September 19, 2001 with contemporary groups of professionals led by Mr. Khop Narayan Shrestha who were committed to uplift communities from poverty, hunger and destitutions. It is now one of the well-established NGOs in Nepal with more than two decades of its remarkable and successful institutional growth and development under the continued leadership of its Executive Director Mr. Khop Narayan Shrestha. As a professional staff of the UN World Food Programme (WFP) which was one of the initial agencies to engage MDI in its rural livelihood projects in Makawanpur district, I have personally observed its gradual growth since 2002 - from near scratch to this stage. In our very first observation as WFP staff in 2002, we realized the potentials of MDI for prospective partnership in delivering livelihood supports to the vulnerable communities in Makawanpur district where they have already been working both voluntarily and through supports from DANIDA. WFP and MDI formally entered into collaborative partnership to implement Rural Community Infrastructure Programme (RCIW) in Makawanpur district which was a flagship programme of WFP and the GoN in 21 districts including Makawanpur district.

MDI's work in the district has been one of the modular and exemplary partnerships with WFP and some of its work locations in Makawanpur district have been showcases of sustainable livelihood promotion involving vulnerable hill communities. Several organizations have taken their teams to MDI implemented sites for practical learnings. The writer has been in close contact with the NGO since the beginning and has visited their programme areas several times, both as WFP staff and as an individual well-wisher and supporter of MDI – the last visit in July 2022.

Registered in the district administration office of Makawanpur and affiliated with Social Welfare Council, Kathmandu, MDI Nepal has proven its strength to improve the livelihoods of rural poor primarily through interventions in agriculture and water sectors. The organization is steered by 9 Board Members of whom four are women.

Since its establishment, MDI had a strong commitment to work for the vulnerable communities such as Chepangs to create capital and use it efficiently to improve their quality of life and achieve self-reliance. Land and labour, being the primary asset of the poor, promoting sustainable

optimal use of available natural resources through the management of degraded land and maximizing agricultural productivity through improved practices and skills should be some of the core interventions for a sustainable food and income security of such vulnerable communities.

This short and independent write-up is based primarily on my own observations from various past field visits of the NGO's programme areas, its institutional growth since its establishment and analysis and reflections from the reports it has published over the years. Information was also gathered through direct observations of project sites and recent remote interactions with some of the community entrepreneurs who have worked with the MDI in the past and now have established themselves as leaders and social influencer in their work areas. The structure of this report, therefore, is informal with the aim of providing an independent analysis of strengths and successes as well as recommendations on areas for improvements and way forwards.

## 2. MDI Nepal Journey with the Communities

Since its establishment, MDI's primary focus has been on the improvement of livelihoods, income, and nutrition of the poorest and vulnerable communities. Makawanpur and Chitwan districts have been their main geographical focus areas. It later expanded its activities to other districts in the east (Udaypur and Khotang), west (Tanahun), central (Kavrepalanchowk, Sindhupalchowk, Makawanpur and Chitwan), mid-west (Rolpa, Rukum, Salyan, Jajarkot, Pyuthan and Dailekh) and in the Karnali region (Jumla, Kalikot and Dolpa).



The geographical coverage of MDI's activities has been gradually expanding owing to the increased trust among donor agencies in its field performances primarily their community-based approaches.

The programmatic path MDI adopted to improve community livelihoods and income included locally and environmentally feasible and adaptable activities such as fisheries, agroforestry, infrastructure works, horticulture, apiculture, and high value agriculture (vegetables etc.). While promoting these activities, MDI was very conscious of avoiding damage to the local environment in terms of preservation of sources of water and maintaining green cover.

MDI, through their outstanding works and visible impacts given to the community, the organization has been able to receive number of national and international deserving awards in the past. Major awards received are Ryutaro Hashimoto APFED Award 2008 (Gold Prize USD 20,000), UNEP Sasakawa Prize -2010 (USD 100,000), Environment Conservation Award (NPR 25,000) by Government of Nepal-2011, Social Award by National NGO Federation of Nepal (NPR 25,000) and UKAID Adaptation at Scale Prize 2016 (€ 10,000) including various appreciation letters from respective communities and local governments.

### **3. Helping Communities to Help Themselves**

The promotion of sustainable livelihoods for marginal and very poor communities in Makawanpur and Chitwan districts has been the central theme of programme activities that MDI initiated since its establishment. Created as a community-based organization, it strongly believed in the possibility of changing lives of the vulnerable by improving age-long land utilization practices, physical access to markets and timely social-behavioural transformation of the communities.

For the first few years MDI worked exclusively with the impoverished and vulnerable communities of Chepang, Tamang and others within its birth-districts of Makawanpur and Chitwan. Realizing that these marginal communities relied on land-based activities for their livelihoods, MDI began working with them on ways to improve on traditional farming practices as well as innovative ways to positively exploit degraded slopes along the mid-hills and improving land productivity along the Churia foothills through fish-farming.

#### **3.1 Growth of a Fishery Village - The Carp-SIS Fish Farming in Masine village in Handikhola**

During our recent visit of Masine village in Handikhola we observed 10 fishery ponds constructed and owned by Mr. Sanu Kanchha Titung in the same cluster attached with each other. These ponds have fish farming adopting Carp-SIS technology where carp fishes like common carp, grass

## Key Messages

SIS such as Mara (*Amblypharyngodon mola*) have been found for the first time in Rhino lake, located in Bharandabhar forest corridor of Bharatpur Municipality-12 through a study sponsored by MDI Nepal and conducted by the fish specialists of Agriculture and Forestry University (AFU), Rampur, Nepal supported under fish diversity project of UNDP GEF Small grants Programme of Nepal. This species has very high profile of Vitamin A and is widely used in Bangladesh and other South East Asian countries in improving nutrition of women and child through fish in nutrition projects. Similarly, other nutrient rich species such as Dedhwa (*Esomus danricus*) and Pothi (*Puntius sophore*) are also adequately found in these lakes. These can be valuable assets in improving nutrition of women and child in the days ahead if conserved and harvested properly.

carp, silver carp, rohu, naini, catla are grown together with native fish species called as small indigenous fish species (SIS). Thus, this system is called as Carp-SIS polyculture. This is the innovative approach of fish farming promoted with technical support from MDI. It has been a proven form of aquaculture which was developed in Bangladesh in collaboration with Bangladesh Agricultural University (BAU) and World Fish. This was later extended in Kathar of Chitwan among Tharu women members during 2010 and tested successfully by Agriculture and Forestry University (AFU), Rampur, Nepal. The system is proved having potential of producing 10% higher productivity. The adoption of this technology has potential to make a crucial contribution towards reaching recommended dietary micronutrient intakes to the community, including for women and children since the SIS are rich sources of key micronutrients such as calcium, zinc, and vitamins A and B12.

SIS are self-recruiting in nature thus they need to be harvested weekly and biweekly to maintain their population balance in the pond. The SIS fish thus harvested could be consumed while the big fishes are sold for additional income.

Carp-SIS polyculture is also considered as environment friendly technology. Though the system is more sensitive to nutrition, it also promotes habitats for native fish species. Ponds work as ideal breeding ground for them. Because the ponds are fed with natural water from associated rivers and streams, local fish species can easily migrate from the ponds to the nearby streams and vice versa.

MDI launched this programme in Handikhola with the support from UNDP GEF Small Grants Programme of Nepal during 2012. The main purpose of this project was to restore SIS population in natural water bodies since the native fish species are declining at an alarming rate. In Nepal, of the known 236 native species, 34 species are found threatened different level. Among other reasons, uncontrolled and unconventional fishing using electricity, dynamiting and poisoning in the open water bodies are the major threats causing the decline of native fish species.



Mr. Leelaraj Upadhyay discussing with the fish farmers of Handikhola, Masine during his field visit in Makawanpur  
(Photo credit: Mr. Sagar Shrestha, MDI Nepal)



Fish pond of Mr. Sanukanchha Titung located in Handikhola Masine village, Makawanpur.  
(Photo credit: Mr. Rajan Lamichhane, MDI Nepal)

This project developed some 250 ponds around the Masine Khola, Twangra Khola and Thado Khola corridor in Handikhola VDC.

Carp-SIS integration piloted in Handikhola VDC has been seen as one of the potential alternative option for people dependent on fishing. With this integration they have opportunity to sell carps for additional income and SIS for family consumption preventing them to swing for fishing in rivers and streams in search of SIS. This has reduced indiscriminate killing of SIS and has ensured conservation of natural SIS stocks in their habitats. Different studies have already showed success story of SIS polyculture through carp-SIS integration. During our discussion, people claimed that SIS populations are starting to show sign of recovery in rivers and streams even with this short cycle of experiments. We learnt that the positive changes have already been acknowledged by the local communities and their perception about SIS conservation has widened too.



Mr. Sanukanchha Titung harvesting fish from his pond for sale.  
(Photo credit: Mr. Navin Subedi, MDI Nepal)

### 3.2 Rice or Fish Farming: Issue of Land Productivity

Fish farming has been one of the main initiatives of MDI that has attracted interest of both communities and donor agencies as well as research institutions. MDI has been motivating farmers to diversify their traditional land-use practices to fish farming owing to its higher productivity per unit area of land and in view of the growing labor shortages and declining productivity of land for crop cultivation. Although reluctant to change

initially, few households decided to take risks of transforming their cultivable lands to fishponds that ultimately turned to be profitable in its first-year yield. The profit demonstrated by selected households led to the adoption of the model by several other households that gradually spread to other villages too.

One of the farmer Mr. Sanu Kanchha Titung who turned his 1 Bigha (0.67 ha) of irrigated Khet land into fish farm tells that fish farming is seven times more profitable than two crops of rice farming in the area. Mr. Titung illustrates the cost of production (Rs./Kattha, 0.03 ha) and revenue from rice farming and fish farming as below based on the price index of August, 2022.

Rice Farming				Fish Farming			
Cost of Cultivation and Revenue (Rs./Kattha)				Cost of Cultivation and Revenue (Rs./Kattha)			
Costs of Production	Amount (Rs.)	Revenue (Rs./Kattha)	Amount (Rs.)	Costs of Production	Amount (Rs.)	Revenue (Rs./Kattha)	Amount (Rs.)
Seed & Nuresery Cost	500	Production (200 kg/ Kattha x 2 crops = 400 kg@Rs. 30/ kg	12,000	Cowdung Manures	500	Fish Production (150 kg x Rs. 275/kg	41,250
Field dykes preparation	1,000	Rice Straw (1,500 kg @ Rs. 2/kg	3,000	Lime	200	(Carps and Local Fishes)	
Ploughing & Puddling	1,700			Urea/DAP	1,250		
Labour (1 person) for Levelling	400			Fingerlings	2,500		
Rice Planter (3 persons)	1,200			Feeds (300 kg x Rs. 50/ kg	15,000		
Weedicide	200			Cost of Fish Harvesting	1,800		
Interculture Operation (1 person)	400						
Pesticide	100						
DAP (6 kg)	300						
Urea (6 kg)	200						
Cowdung Manure	2,000						
Harvesting of Rice (2.5 persons)	1,000						
Collecting Rice Bundles from field	400						
Thresher Cost	800						
Transportation	1,000						
Jute Bag	300						
Food Snacks etc. for Labours	500						
<b>Total Cost</b>	<b>12,000</b>	<b>Total Income</b>	<b>15,000</b>	<b>Total Cost</b>	<b>21,250</b>	<b>Total Income</b>	<b>41,250</b>
<b>Net Revenue (Rs./Kattha)</b>			<b>3,000</b>	<b>Net Revenue (Rs./Kattha)</b>			<b>20,000</b>

Note: 2022 August Price Index

The profit made by some entrepreneurs, groomed by MDI, by converting land from crop (rice) cultivation to fish farming (first few seasons) demonstrated the potentials of diversifying traditional land-use practices depending on the local environment as well as market needs. The need for technical supports and guidance, however, seems crucial for households in taking such decision particularly for marginal holders and subsistence farmers. For fish farming, updating farmers with new research and innovations, the selection of right species and timely availability of quality fingerlings and fish-feed are equally crucial to maintain annual productivity.

### 3.3 Highland Aquaculture

Poverty and associated malnutrition are rampant in Nepal. Highland dwellers are suffering a major brunt from this poverty menace. Though fish is said to be the cheapest source of protein, it rarely reaches the table of upland people. Most of the ponds (94%) are located in the Terai region of Nepal where warm climate prevails. The policy makers generally seem to believe that highlands fish farming is totally unsuitable and unrealistic, a complete waste of effort and resources. Thus, the production potentials of cold-water aquaculture in highland areas have always been grossly ignored.

In order to meet this gap, MDI attempted its venture in 2014 to promote aquaculture in highland areas of Nepal with common carp species which is one of the ideal species to grow in cold temperature. Some 500 fingerlings were supplied to two farmers of Jumla which were delivered through Yeti airlines from Nepalgunj. This support was partially provided by World Food programme through MCHN programme. The purpose of this experiment was to explore the possibilities of common carp culture and its breeding in such remote areas so that the supply of quality fish seed is ensured which remained always daunting task impeding the overall development of aquaculture in highlands.

They were successfully grown in both of the places (Tatopani & Garjyangkot) located at an altitude range of 2500 m. While one of the farmer Mr. Bal Bir Mahat of Tatopani, Jumla also got success in breeding of this species after three years in 2017 from his small cemented tank. He was guided in breeding operations by MDI aquaculture specialists. A semi-artificial method was adopted using hormones (ovaprim) for breeding and Kakaban, a thatch net was used for facilitating spawning. In three years



Breeding cycle of common carp in Tatopani, Jumla  
(Photo credit: Mr. Raghuraj Thapa, MDI Nepal)

of rigorous works, Mr. Mahat produced almost 5000 hatchlings from the matured broods for the first-time during April/May 2017 and was able to sell @ NPR10/fingerling. It's learnt that the breeding works are still on-going in Tatopani and producing fingerlings every year.

### 3.4 Salvaging Khoria for Livelihoods

MDI has taken various strategic approaches to achieve the objective of improving livelihoods including promotion of agroforestry in degraded slopes, rehabilitation of rural infrastructures, provision of diverse set of income generating skills training, gender awareness, and advocacy etc. In operational terms, the activities included agroforestry plantations in khoriya /slash and burn areas, increasing land productivity through fish farming, collective/individual vegetable farming for commercial purposes and livestock rearing were some of their agro-based livelihood activities.

A ground-breaking activity that MDI has performed is plantation of agroforestry crop species throughout the sloping khoriya land where majority of indigenous chepang communities are dependent for generations. We visited some of the sites where banana, pineapples, broom-grass, fodders were massively planted.



Agroforestry in sloping up-lands,  
Makawanpur  
(Photo credit: Mr. Navin Subedi, MDI Nepal)

The northwest Makawanpur where majority of Chepang and Tamang communities live in rugged terrains follow the slash and burn agricultural practices for generations. Slash and burn farming is an age old rotational agro-forestry practice. Under this practice, a parcel of land is cultivated for a short period and then left fallow for several years so that the soil health is sufficiently restored for next cycle. Thus, this is also called shifting cultivation. This is mostly adopted by poor and indigenous communities, mostly Chepangs and Tamangs who are regarded as the most marginalized and resource poor group in Nepal. Due to lack of knowledge and resources, they adopted a sort of negative coping by gradually reducing the cultivation cycle from 15-20 years to just 3-4 years and even less, consequently inviting serious soil erosion problems affecting not only themselves but also those in the downstream.

During the process, it mobilized the communities (particularly vulnerable and marginal holders) to tap available local resources and motivated people for engaging in improved agroforestry-based income generating activities to improve and sustain their livelihood. As an innovation, the system was tied up with proven form of sloping agriculture land technology (SALT) models in which different agroforestry systems have been combined. SALT is an agroforestry technology for sustaining agricultural production on sloping lands and minimising soil erosion.

It is a relatively simple, practical, low-cost and appropriate method of diversified farming. The project integrated various SALT models, namely food crop production (SALT-1), livestock (SALT-2) and fruit production (SALT-4). Broom grass was planted widely as hedgerows, following SALT-1 principles. Based on SALT-2 and SALT-4, horticultural crops – especially fruits like banana and pineapples, and nitrogen fixing fodder trees were planted and combined with livestock raising, particularly goats. Various rhizomatous crops like ginger and turmeric, and food legume crops such as black gram, horse gram and rice bean (masyang) were also planted in between the rows. These systems were found effective in conserving soil and water, enhancing soil fertility and increasing crop production.

There are many families of Chepang and other marginal tribes in Makawanpur and Chitwan districts who have successfully undertaken and improved their age-long agriculture and land-based practices and have gradually expanded their enterprises to the extent that these have increased income by manifold. Many of them have not only upgraded their farming to a commercial level but have been able to sustain their livelihood and improved standard of living. They have rehabilitated marginal and degraded slopes in the uplands with improved agro-forestry system, planting millions of plants of fruits, fodders and NTFPs like broom-grass and asparagus.

With the introduction of improved agro-forestry system to replace Khoria practices, people have gained plenty of knowledge on how it has turned to be a famine fighter by growing forest weeds like Amrisho, local fruits like pineapple and banana and fodders for livestock have yielded substantial income as well as a sustainable option for their long-term livelihood. They have deeply understood the potentials of such a degraded Khoriya lands if properly managed.

### 3.5 Honey Production - Great Source of Livelihoods

Funded by the UNDP GEF Small Grants Programme of Nepal through MDI Nepal, a few Chepang youngsters of Silinge community established a Janachetna Agriculture Cooperative Ltd. in Lothar Bazar along the east-west highway involving 25 members initially during 2005. After establishment of this cooperative they started agroforestry activities in Silinge, Damarang, Dhusarang and Kharkhantar village with a view to increase and diversify their incomes from



Farmers of Raksirang RM, Makawanpur loading bananas in bamboo basket (Doko) for sale in local market, Manahari Bazar  
(Photo credit: Mr. Navin Subedi, MDI Nepal)



A honey shop run by Janachetna Agriculture Cooperative at Lothar, Chitwan  
(Photo credit: Mr. Rajan Lamichhane, MDI Nepal)

banana, amrisho, citrus and other fruits planted under the agroforestry schemes. Later in 2006, they started bee keeping in this area having high potential due to adequate number of Chiuri trees which are ideal for bee foraging. There were only 5 members in bee keeping in the beginning. These entrepreneurs scaled their businesses using environmentally-friendly practices conserving chiuri trees for bee forages. With support from this project and later by several other NGOs and DADOs assistance, the farmers increased production and productivity, strengthened their businesses and management skills, and built connections to food companies, accessing new markets for their honey products.

Now, there are more than 100 farmers under bee farming and consists of more than 40 thousand bee hives in the area producing 40-50 MT of honey with worth of sales by NPR 26 million annually, says Dinesh Praja, Manager of Janachetna Agricultural Cooperative Ltd. Lothar.

### **3.6 Access for production and marketing: Productive Infrastructures**

The most poor, vulnerable, and marginal communities where MDI worked, have lived for generations, in villages without physical access to major roads nor any mechanisms of marketing of household needs or sell their produce. Accordingly, and with the realization of the needs of physical access, MDI supported communities in the construction and/or rehabilitation of critical roads connecting several villages to major road network in the district as well as other local infrastructures such as irrigation canal, water harvesting tanks, mule trails etc. The construction / rehabilitation of rural roads, irrigation canals, mule trails, river embankments and rehabilitation of schools / health posts have been some of the key infrastructures through collaborative supports of donor agencies and the MDI in many mid-hill districts (mainly in Makawanpur, Dailekh, Kalikot, Jumla and Udayapur districts and some other districts during post-Earthquake and COVID 19 response). In fact, the communities themselves identified and prioritized such infrastructures of critical importance that they believed would play prominent role in increasing productivity and uplifting their livelihoods.

MDI has been one of the leading NGOs working intensively in introducing new and innovative infrastructures to enhance productivity including improving crop productivity of rain-fed farmlands through modified farming practices, development of small-scale irrigation systems, innovative water acquisition and application technologies such as water harvesting tank, infiltration galleries, drip and sprinklers etc.

The experiences gained suggests that if identified carefully and in consultation with communities, supporting the construction and/or rehabilitation of physical infrastructures like rural roads, irrigation canal, water harvest ponds could prove vital to ensuring food security, market access, livelihood opportunities and longer-term income for the ultra-

poor who have difficulty in engaging in self-employment opportunities. Its regular maintenance, however, is critical in maintaining same level of their efficiency and thus the productivity in rural areas.

Some of the rural-road project sites visited clearly demonstrated that how could rural road bring real changes in the lives of the rural communities. A rural road is defined as a road connecting village to the main road leading to the markets and opening-up access to other regional economic and social development facilities/centres.

The Manahari-Dandabas is one of the core rural road corridor accorded highest priority under District Transport Master Plan (DTMP) of Makawanpur which connects Palung to the north with Tribhuvan Rajpath (highway) and Manahari to the south with east west highway with an expected length of 48 km. MDI, in collaboration with DDC Makawanpur and funding support from World Food program (WFP), supported construction of this road through Dandabas alignment.

This construction work started in 2002 and has now accomplished almost 25 km (out of 48 km total length) from Palung end in the north under the food for work programme. We also observed another road alignment connected from Dandabas alignment to Dandakharka (14 km) which was built under the financial support of Poverty Alleviation Fund (PAF). We learnt from MDI that, with the similar support from WFP and respective DDCs, MDI has extended some 189 km road in different districts.

Some of the community members met in Dandabas and Dumsikharka of this road alignment to learn about the impacts of these roads. The community members to whom we met and discussed during our field visit claimed that these roads have turned to be our lifelines and are deeply connected to our livelihoods and additional incomes.

“Everyone who visits Dandabas can’t comprehend how cut off these villages were before 2002,” said Buddhi Man Ghalan, a local resident of Dandabas. “We had been waiting for development to reach our villages for a long time. For those living in Dandabas, a journey to Palung was at least a half day’s walk to meet the highway at Tribhuvan Rajpath in Palung. Dandabas is located at 2200 m altitude from the mean sea level. Because of this appropriate altitude with cold climate, the area has adequate opportunities for cultivation of off-season vegetables similar to Palung.

Earlier the situation was very bad in Dandabas due to lack of access road, their interface with markets thus were extremely limited. They had to carry the potato they produce for nearly 15 kms to reach the nearest market at Ghartikhola or Palung either by themselves or hiring porters, which costs more than half the value of the product. So, there was very little incentive to produce for the market, thus compelling them to adopt either traditional



Irrigation canal constructed in Naraharinath RM, Kalikot under COVID-19 response programme with support of UN-WFP.  
(Photo credit: Mr. Narendra Shahi, MDI Nepal)

subsistence maize/ millet farming or to be involved in illegal marijuana trading. Considered as a golden triangle for farming marijuana, these remote villages had no other livelihood options before. Its remoteness had made it a perfect site for such illegal farming. Many farmers who were unable to pay 'due share' to the police often ended up in jail, serving terms for many years. And the story was repeated every year. Most of the youths in Dandabas were daily wage workers in Kathmandu, Hetauda and some have gone overseas in search of employment, says Mr. Ghalan.



Vegetable farming flourishes in Dumsikharka village in Kailash RM, Makawanpur after rural road construction during 2009 AD.

(Photo credit: Mr. Rajan Lamichhane, MDI Nepal)



Dandabas Bazaar in Agra, Kailash RM after initiation of WFP supported Road, Makawanpur  
(Photo credit: Mr. Rajan Lamichhane, MDI Nepal)

Now, the case is different after construction of this road. Commercial vegetable production actually started in Dandabas after initiation of this road in 2002. Because of road connectivity, each household are earning Rs. 300-500 thousand a year in average from the sales of vegetables, says Sunil Moktan of Dumsikharka. This has also enabled some villagers to send their kids in Hetaunda and Palung Bazar for better education.

The local government has now taken complete ownership of these alignments and is working on its expansion in phase wise basis. Palung-Dandabas section is already blacktopped and bus services are in operation from Dandabas to Kathmandu. Every year the local government sanctions budget for black topping. Hope this road project comes to an end in few years and dreams of community can be fulfilled truly in the days ahead.

## 4. Integrating Cross-Cutting Themes in Programming

MDI has been a people-centered NGO working very closely with them to bring their socio-economic transformation and building hopes and self-confidence among poor and vulnerable households facing multiple brunt of social disparity and anomalies, poverty and environmental degradation/ climate change. Although focused in improving lives and livelihoods of the communities it worked with, MDI has been committed to integrate protection of environment, climate change adaptation, gender, and mother/child nutrition in all their activities. MDI implemented a dedicated MCHN activities in three Karnali districts.

### 4.1 Mother and Child Health and Nutrition Programme (MCHN) in Karnali Districts

By engaging in food security and livelihood improvement activities across its project districts, MDI was entrusted by UN-WFP to implement its Mother and Child Health and Nutrition (MCHN) programme in some of the Karnali districts (Jumla, Kalikot and Dolpa) starting 2014. The main purpose of MCHN programme is to prevent chronic malnutrition among pregnant women, nursing mothers and children aged 6 to 23 months. MCHN has the highest coverage than any other program in the field of nutrition support programme in Nepal.

Although nutrition, particularly of pregnant and lactating mothers and children under 5 years, has been a priority sector of the GoN, its implementation has remained a challenge owing to the lack of awareness



Beneficiaries (Mothers) after receiving fortified blended food at Raralihi Health Post, Jumla  
(Photo credit: Mr. Rajan Lamichhane, MDI Nepal)



Growth monitoring of child in Dolpa district under MCHN programme supported by Karnali Province Government and UN-WFP.  
(Photo credit: Mr. Raghubir Thapa, MDI Nepal)

and physical access to nutritious food to rural and urban poor. The problem is much pronounced in many mid-hill and mountain districts in the Karnali region.

Between 2002 -2010 MDI also implemented nutrition programme in Udaypur and Dailekh districts under the banner ‘Building Livelihood and Improving Nutrition of Women and under 5 Children’ with financial assistance of the Embassy of Denmark and UN World Food Programme. A number of village model farms (VMFs), homestead kitchen gardens, poultry rearing, and fruit plantation activities were interlinked to support nutrition of women and children. In addition, number of micro-irrigation activities such as canal irrigation, water collection ponds integrated with drip and sprinklers have been launched to provide irrigation for vegetable and food crops – all aimed at improved agricultural production to support better nutrition within the households.

Apart from providing nutrition and health counselling, the involvement in MCHN programme was an entry-point to MDI to advocate and demonstrate interlink ages between agriculture, food security and nutrition and an important role they play in improving community’s overall development. While working for MCHN, the MDI initiated livelihood diversification activities that, in turn, could potentially improve food security and nutrition of the households.

## 4.2 Environment & Climate Change Sensitive Programming

As its commitment towards environment and climate change, MDI has always worked in minimizing environmental degradation by maintaining adequate green cover to prevent soil loss from the slopes vulnerable to erosion. Where possible, it followed the Landscape Strategy for Community Development and Knowledge Management (COMDEKS) project approach under the SATOYAMA Initiative (SI) that aims at managing entire landscape of hill slopes with the twin objectives of conserving environment and restoring livelihood of locals. MDI is piloting the concept in 10 villages in the western Makawanpur with the objectives of managing biodiversity and people’s wellbeing where, a recent survey has indicated high deforestation and environmentally inefficient farming practices including slash and burn.

Besides its direct engagement in environmental activities, MDI supported programmes have a built-in concept of safeguarding local environment during project implementation as well as supporting conservation of soil, water, and forests. Some of such measures include application of green road concept in the construction/rehabilitation of rural roads, SALT

techniques in hilly terrains and water recharge through conservation of rainwater ponds. Its work in the Conservation of Indigenous Fish Biodiversity in East Rapti River Basin (ERB) through CARP-SIS Poly culture and Promoting Local Fish Diversity in Selected Lakes of Chitwan through Eco-system-based co-management Practices are also equally remarkable in terms of engaging local communities in the conservation of local fish biodiversity.

In recognition of MDI's environment and climate sensitive programming and successful implementation of the project 'Mitigation of the Effects of the Carbon dioxide and other Greenhouse Gases by Controlling Slash and- Burn Farming' funded by UNDP/GEF/ Small Grants Programme, it has been awarded with Ryutaro Hashimoto APFED GOLD (1st Prize) Award in 2008. The initiative apparently appealed both communities and other international agencies and UN and thus was expanded in Udaypur and Khotang districts through the support of WFP in 2009.



Agroforestry in sloping up-land, Makawanpur  
(Photo credit: Mr. Navin Subedi, MDI Nepal)

### 4.3 Skills Building and Social Transformation

For implementing various activities by the project, MDI doesn't involve directly. It mobilizes the communities at the ground. Community groups are formed at the grass root level and project activities are endorsed through these groups for implementation. MDI firmly believes that if the community members to whom we target, mostly the disadvantaged ones, are sensitized, mobilized, organized and judiciously supported they release their creativity and takes into account the real needs of the community. Another outcome is the sense of responsibility each individual gets. It could also be a way to stimulate solidarity, the strength of the group and its capacity for self-help is inspiring and brings together the conditions for an efficient and sustainable action.

Taking this approach, a number of community groups have been formed in the villages. Many of these groups are further federated to a higher level institutions i.e. Cooperatives and are linked to saving and credit schemes. These institutions have given equal space to the women members who are the prime movers of the groups and thus are truly ensuring sustainable development. Of the total 1193 members from 58 groups/cooperatives, women constitute the 51% with major positions in executive body.

While supporting implementation of activities (projects) by the communities, MDI worked on the strategy of on-the-job skill building both for the involved household members as well as its own staffs. Learning by doing helped both farmers and the staff to gain knowledge and skills in particular activities and disseminate it across the communities.



Cash for work (CfW) activities; Women members of Dailekh in Pagnath village receiving branchless "Sajilo Banking Sewa" from Siddhartha Bank Ltd., Dailekh  
(Photo credit: Mr. Raghbir Thapa, MDI Nepal)

Many of the former local youths who have worked as community mobilizers in the initial phases of MDI-led community activities (particularly in Makawanpur and Chitwan districts) have ultimately been the key change agents in their communities. Some of them transformed them to become an entrepreneur demonstrating on how the local natural resources (land, forest, and water) could be managed for income generation and ultimate improvements in their livelihoods. The commercialization of Amrisho (broom-grass), honey and fruits/vegetables by some of them have been few examples of successful community entrepreneurship that MDI initiated decades ago.

Their fairness in works, respect to the dignity of community and sincere supports won the admiration from the people to the extent that two of them who worked earlier with MDI as Social Mobilizers were even elected as ward chairperson in the municipal elections giving them bigger roles to incorporate other communities in replicating the concepts of improving livelihoods. These are instances displaying possibility of social transformation through mobilization of youths and communities in sustainable management of local natural resources and to build self-help.

#### 4.4 Transparency

MDI has adopted number of measures to ensure that the transparency value gets translated into action. First of all, the organization has clear organizational goals and plans that everybody working within the organization has clearly understood it. The team members including its managers and subordinates communicates openly and honestly cultivating a culture where information can flow freely between people and teams.

The organization has adopted comfortable framing of its account using modest computerized system showing all details of its expenditures in a very transparent manner. All project costs are included in the system of financial accounts. Recording of transaction is maintained in several books of accounts like cash book, journal book, a ledger account, profit and loss account etc. These entries are a source of documents which act as evidence for all the transactions taking place in the organization.

The organization has its own procurement manager assigned especially to the persons involved in financial management. He is responsible to communicate with vendors to buy, rent or contract products and services needed to achieve project objectives.

Generally, a shared responsibility is given to more than one person to avoid fraud. A bank reconciliation is frequently checked at regular intervals for all bank accounts to ensure control over the receipts and payment of cash.

In addition, MDI assigns independent external auditors for auditing annual transactions and publish in annual reports. These reports are further disseminated through its official websites ([www.mdinepal.org](http://www.mdinepal.org)) regularly.

At the field level, each User Group (UGs) maintains a project book at the community level for each project that they undertake, that all essential information of the project activities is encompassed up to date. Each user group undertakes at least one public audit per project cycle, during which all sections comprising the target group attend, where critical issues relevant to the target group are discussed (e.g. workers entitlements), allocation and use of funds and materials are presented and discussed. Review meetings are organized on periodic basis for respective projects in the districts where representatives from district authorities, local governments, and provincial offices and from respective groups attend the workshop and discuss on the progress.

#### 4.5 Sustainability

The impacts of the project have turned out to be largely sustainable. Even after two decades of its completion, the main outputs are still visible, and in use or effect. The effective social mobilisation under the project has ensured that various informal and formal local institutions keep providing the necessary revolving funds for farmers to be able to conduct most of the activities introduced by the project, particularly those related to agroforestry and livelihood promotion.

The social economic advantages of commercial farming of banana and other fruits and crops and from additional income and food sources such as goat keeping and vegetable growing, as well as the benefits from stabilising the slopes through the various SALT methods including NTFPs, fruits/fodder tree planting, are now well understood by the local Tamang and Chepang communities. Local farmers are now fully aware of the additional income opportunities and many are open to experiment with new types of fruits and crops. The banana saplings provided under the project are now mature ones and being self-regenerative, these mother stocks are adequately producing its off-springs/saplings and rendering production throughout the year. Similarly, the Amrisho which is massively planted throughout the marginal sloping lands, are simply the wild weeds but are sustainable in giving yields year by year because of its self-regenerative value producing enough shoots each year from the same bunch. However, a major challenge to the future of the agroforestry component of the project is that ownership of Khoriya lands is yet to be resolved. The farmers have planted out thousands of banana and other cash crops in the lands which legally belong to the Department of Forests.

The rural road projects are gradually undertaken by the respective district authorities for its improvement. Similarly, the fish ponds have become the stable sources for getting additional income for people. This has become the regular source of income especially for the women making use of their casual labour to earn a living for their families.

## **5. Partnerships and Collaborations**

Since its establishment, MDI has continuously strived for collaborative partnership with both national and international agencies in achieving the common goal of poverty alleviation, food security and securing livelihoods of the most vulnerable and marginal population in Nepal.

Over the last two decades, MDI has partnered successfully with several Government, UN, INGOs and NGOs in livelihoods, food security, nutrition, income generation and environment sectors. It has earned very high trust of several agencies and donors since its establishment and have been entrusted with financial resources to implement community-based activities across the country. Till date, MDI has collaborated with UN World Food Programme (WFP), UN-Food and Agriculture Organization (FAO), UNDP/GEF, DANIDA, GIZ, Poverty Alleviation Fund (PAF), World Wildlife Fund (WWF), Agriculture University Rampur/Nepal and Bangladesh etc.

MDI has drawn significant attention on its community-based works as demonstrated in some of the mid-hill districts in east, central, mid-west and Karnali region of Nepal and has been entrusted with financial supports by various national and international agencies for the implementation of livelihood, food security and nutritional activities. Although such external supports may continue, MDI's focus on the partnership with local and provincial governments remains as a task of paramount importance to sustain and disseminate its community-based models beyond its work area.

## **6. On going Innovations**

Over the last two decades of its community-based works, MDI has introduced some useful technical and social innovations aimed at supporting communities in better production and management of agricultural and natural resources and rural infrastructures within the local contexts. Some of them are;

### **6.1 Carp-SIS technology in fish farming**

This technology is unique in terms of preserving local/native fish species and producing table fish for market purpose. Both local/native fish species and exotic fishes (especially the carp species) which are commercially grown are grown together in the same pond. Carp-SIS integration piloted in Masine village of Handikhola has been seen as one of the potential alternative option for people dependent on fishing. With this integration they have opportunity to sell carps for additional income and SIS for family

consumption preventing them to swing for fishing in rivers and streams in search of SIS. This has reduced indiscriminate killing of SIS and has ensured conservation of natural SIS stocks in their habitats. Different studies have already showed success story of SIS polyculture through carp-SIS integration. This production cum conservation practice leads to sustainability-a better term in fishery as ‘social fishery’.

## 6.2 Aquaponics

We had also opportunity to observe the aquaponics technology demonstrated by MDI in Bharatpur-11, Chitwan. Aquaponics, as we understood by seeing, appears to be a combination of aquaculture, the growing of fish and plants (without soil) together in one recirculating environment where the fish produces waste that the nitrifying bacteria convert into nutrients (nitrates) for the plants. The technique, apparently is environment friendly technology which could be adopted in the urban contexts where land and water are limited for production of fish and vegetables. This is an organic gardening method that can be established around homesteads.

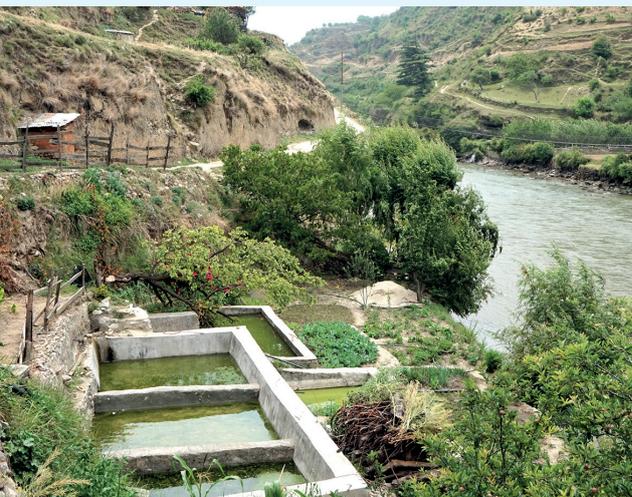


Mini Aquaponics System: This symbol indicates the flow direction of water.

## 6.3 The SALT system: Agroforestry for Sloping Lands

The Sloping Agriculture Land Technology (SALT), first developed in the Phillipines during 1980, is one of the pioneer and diversified agroforestry technology suited in sloping lands in which different permanent shrubs like banana, citrus, coffee and other fruit trees are dispersed throughout the farm plot in hedge rows creating a living barrier that traps sediments and control the soil erosion. In many areas visited had the banana, amrsho, pineapples and citrus densely planted along the contours of the slopping lands which has worked as barrier to control erosion in one hand and producing fruits and NTFPs on the other?

The area like Rabang, Raksirang where we visited is one of the erosion prone areas because of its high slope gradient. The run-off water carries huge amount of fertile soil every rainy season reducing productivity day-by-day. We were unaware of this situation previously. We never recognized such a potential much earlier. Now, our area is green as never before with banana, broomgrass in alleys, pineapples everywhere on our field dykes. Our village has been transformed from the situation of hell to that of heaven, says Amrit Praja, chair of Rabang Community.



Fish pond of Mr. Balbir Mahat located at Tatopani, Jumla  
(Photo credit: Mr. Rajan Lamichhane, MDI Nepal)

## 6.4 Aquaculture in highlands of Nepal

Though the aquaculture is said to be the fastest growing primary industry, the production potentials of cold-water aquaculture in highland areas have always been grossly ignored. Most of the ponds are located only in warm climate zones. Thus, MDI conducted an experiment in Tatopani of Jumla at 2500 m altitude during 2014 to explore the possibilities of common carp culture and its breeding in such remote and highland areas so that the supply of quality fish seed is ensured which remained always daunting task impeding the overall development of aquaculture in highlands.

Ultimately, MDI got success in this experiment. According to MDI reports, the growth rate of parent stocks were found satisfactory (1 kg in average in almost three years). The survival rate was 76% with mean growth 0.54 g/day, and extrapolated gross fish yield 9.37 ton/ha/year. The FCR was 5.93 and feed cost NPR 297/kg. The market price was NPR 800/kg in Jumla. Five thousand hatchlings were produced for the first-time during April/May 2017 and sold @ NPR 10/fry. As learnt from MDI, one of the farmers in Tatopani is still continuing this breeding work, producing fingerlings and selling in the market especially to the new comers (above figures from MDI Reports).

## 7. Concluding Remarks & Recommendations

In its two decades of operations, MDI has established itself as a prominent NGO in Nepal that carries a remarkable legacy as a real community-based organization in the districts where it was borne (Makawanpur and Chitwan in particular). It later extended its activities in 14 additional districts from east to west Nepal. Over all these years MDI has made significant contributions to communities it has worked with in terms of their socio-economic transformation and building hopes and self-confidence among poor and vulnerable households facing double brunt of poverty and environmental degradation/climate change. The communities were not only made aware of new measures to improve land productivity but have introduced innovative farming practices for sustainable income generation. Many of the households (particularly in many villages of Makawanpur district) continued pursuing and improving upon the agro-forestry practices and raised income by manifolds year by year. All of these have brought the MDI in the forefront amongst NGOs in Nepal and have been recognized through various national and international awards for the excellent achievements made over these years.

MDI was equally focused on its own organization building through increased professional capacity of its staffs and improving office equipment and

facilities. As an active, motivated, and dedicated NGO, it has tremendous potential to influence communities towards self-help and sustainable management and utilization of local natural resources (land and forest) for their wellbeing yet maintaining environmental balances. However, MDI poses a big challenge to also mobilize resources, influence, and engage with local and national governments, private sector, international agencies, and other community-based organizations in this daunting task of securing livelihoods and maintaining local ecosystem for improved on / off-farm productivity.

## 7.1 Recommendations

MDI Nepal has achieved remarkable results from its supports to poor and marginal communities dependent on degraded land and forests and many of the households have even graduating from their subsistence level to affluent families. To sustain impacts of such interventions and disseminate the concept elsewhere, MDI is recommended the following to continue consolidating its operational capacities and to capitalize on the prevailing opportunities within the private and public sector:

- MDI to remain focused on various concepts and technologies it promoted for any new offer it receives for collaboration. However, it should continue adapting technologies and innovative approaches appropriate for the new location (e.g SALT, SATOYAMA etc).
- The NGO should maintain contact with community groups and/or individual entrepreneur to monitor their successes and difficulties and try to support where required including help for linkages with relevant agencies, government organizations, banks etc. It is important for MDI to be updated on issues faced by the communities and incorporate (where appropriate) in its strategies for future supports elsewhere.
- MDI should explore possibilities to link established entrepreneurs with relevant organization(s) specifically for marketing of products like honey, broom-grass, vegetable, fish since individual farmers (or even their local group) may not have same access and voice as the NGO may have. Some of the products (e.g organically grown honey, fish, chiuri etc) may even have international markets if they get certification for acceptable quality. Similarly, there seems a greater need for proper storage for non-perishables and cold storage for perishable products that MDI may take lead in linking banks, government municipalities and the entrepreneurs for their construction and management.
- In the context that many fish farmers do not have easy and timely access to quality fish fingerlings and fries causing gradual decline in production, MDI is recommended to explore possibilities of availability at government farms or work closely with Rampur Agriculture University to establish its own or private commercial hatchery in the area.

- The NGO's community support programme strategies must inherently include environmental conservation and be adaptive to climate change issues in the locality particularly while exploiting natural resource for community wellbeing. The promotion of SATOYAMA and SALT concepts may be desirable. MDI should strongly advocate and influence communities and their leaders not to compromise on activities that cause damages to environment and climate (e.g physical construction activities in churia range and vulnerable hill slopes).
- MDI should lobby with private sectors particularly to develop and build partnership with public sectors for better production and marketing of products like fish, honey, broom-grass and vegetables (off/seasonal). The prospects of their commercial production may also require significant financial investments from the private sector or banks.
- Should work to diversify its present geographical focus to Makawanpur to help disseminate the concept. Similarly, it should also explore diversification of products based on local knowledge, interests and feasibility including diversification of fisheries - the innovation on promotion of Tilapia fish and aquaponics is well appreciated.
- MDI should strongly lobby with local municipalities and Provincial governments to support communities for the continuity of various concepts and approaches (agroforestry, productive infrastructures etc.) that were proven to be effective in improving livelihoods, food security and nutrition in the vulnerable areas. The Provincial government should be encouraged and supported to disseminate such successful concepts across the provinces in other communities and even support with matching funds.
- Besides expanding and strengthening its own resource base, MDI is recommended to also support local organizations (e.g government municipalities, CBOs) to also work jointly to build community financial, social, and physical resources for their sustainability. Under the present governance system, it seems that local government bodies are financially strong and have capacities to further strengthen their resource base but may require technical and advisory support to do this.
- As an established NGO, it is greatly appreciated that MDI has developed its organizational and human resource capacity to the extent that many other NGOs/CBOs will look upon its advisory supports for their own growth. The NGO is recommended to make their senior staffs more pro-active in exploring avenues and opportunities for collaborative works to building local organizational capacities.

Thank you !

