



## ANNUAL PROGRESS REPORT

### Mandan Deupur Agro-Forest Resource Centre - Phase II December 2021 – November 2022

#### **Executive Summary:**

With the aim of bringing ecological and socio-economic benefits to rural farming communities, EcoHimal, with financial support from The Glacier Trust, continues to implement the 2<sup>nd</sup> phase of the Mandan Deupur Agroforest Resources Centre (MD-AFRC) – Phase 2 has a duration of 3 years and began in December 2021 in the Mandan Deupur Municipality of Kavre District.

The MD-AFRC is on a sound path towards institutional and financial sustainability, on the basis of the necessary capital (eg. land), basic physical infrastructure, good furniture and arrangements for accommodation, kitchen, agri training, logistics and equipment. In short, all basic structures are established to run the Centre smoothly. The capabilities of the management committee members have been further strengthened which enhances hopes for sustainability. The Board of Directors are working well for the Centre's ever-improving management, and have held 4 meetings in this fiscal year; during these meetings decisions are made for the betterment of the Centre and more than 50% of their decisions have been implemented to date. The management committee was able to obtain some resources from the local government both last year and this year, and have constructed a cowshed from the financial support of the local government. During the current fiscal, local government finances are allocated for a hi-tech greenhouse but these are yet to be released. A 3-year business plan has been developed and the activities are being undertaken to meet the planned targets.

As support to the Centre, six satellites nurseries (three established in Phase I and three newly established) are providing services to local people on a microscale, and a total income of more than NRP 0.413 million (Nepali Rupees, £2,755 equivalent) have been generated by the 6 nurseries in the reporting period. All the nurseries are equipped with basic physical infrastructure such as land for nurseries, greenhouses for seedling production, and a plastic pond for irrigation. All have been registered as institutions with the local government, and all the nursery management committees are active and working well.

MD-AFRC also acts as an outlet of seedlings, seeds and agro-products. The seedlings of different tree crop varieties are distributed to the local farmers as per their demand and need. To develop a small enterprise and a private outlet Centre, 33 women have been trained in pickle production and other consumer products from local raw materials.

In the reporting year, a total of 567 farmers have been trained in different subjects. Amongst these, 310 local farmers (157 male and 153 female) have been trained in tree cropping technologies including organic farming promotion and 33 women for pickle production – the training includes topics such as plantation techniques, climate change adaptation, organic farming, multi-layer/intercropping, pest infestations and control, and nursery management. These trainees were also supplied with tree crop seeds/seedlings. 7,890 tree crop seedlings (eg. litchi, mango, avocado, lemon, banana, orange, macadamia nuts), were distributed and planted by these local farmers. In addition, 2,013 tree crop seedlings were planted at institutions (eg. schools, private farms).

In 13 monthly trainings, 294 local farmers (more than 68% female) were trained on organic farming, vegetable production and tree crops nursery management. From 8 different school, 618 students through 16 training events were also educated on climate change, and improved their skills in organic farming.



Two more new school gardens were established at secondary schools, thus, including the previous 6, the 2022 total is now 8 school gardens established. The students are taking ownership of the gardens and are taking care through regular weeding and irrigation and other activities.

11 radio episodes have been produced and broadcast with greater focus on the impact and success of the project in transforming local communities towards organic farming and a culture of consumption of improved diets. Two documentary films have also been made on the product – this is helpful in terms of documentation and promotion.

Two agriculture technicians and a support staff are based in the AFRC field office to support farmers in day-to-day activities. Senior management visits the field frequently, monitoring the project activities and guiding staff members and farmers.

Two visitors from TGT visited the area in 2022: the donor representative, Ms. Amy Wilson visited the project area in February 2022, and between 11<sup>th</sup> to 13<sup>th</sup> November 2022, Ms. Ruby Glasspool, the new Executive Director of TGT, carried out monitoring visits to the MD-AFRC project areas. Both were accompanied by senior Eco-Himal management and local staff, visited the AFRC Centre, the satellite nurseries, the organic villages and organic farmer groups to review the farmer's success and challenges, and provided their feedback on project progress and implementation strategies. During both visits, a few new ideas for mini projects arose and these concepts are presented in the Annexes.

About 150 kg of almond were produced by farmers but it was not possible to de-husk them due to lack of proper tools, which has discouraged farmers. The de-husking tools are not available in Nepal, thus Eco-Himal is looking elsewhere for the appropriate equipment.

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## A. ACTIVITIES

The following **activities** have been conducted during the reporting period.

### ***Output 1: Complete the Hub and Spoke model; institutionalize the central MDAFRC (hub), and the 6 Satellite Nurseries (spokes)***

#### **Indicator 1: Financially self-sustaining and fully equipped MD-AFRC**

- A proposal for infrastructure to assist in seedling production is under process for submission to the Office of Mandan Deupur Municipality. The submission is planned in line with the recommendation from the Deputy Mayor to enlarge the seedling production capacity of the Centre.
- Facilities for irrigation in the demonstration plots, nurseries and garden have been managed by digging a well (37 feet deep), and the acquisition of a rocket water pump in order provide sufficient irrigation water. The funds were managed by EcoHimal from its internal resources.
- The Centre produced more than 100 kg organic vegetables, consumed at the Centre and shared to different people for organic promotion.
- A day long pickle production training was conducted in the Centre, and, in line with promoting the MD-AFRC as an outlet centre for agri-products, the resultant pickles were sold from the Centre.
- A nursery for lemon seedling production was established through the cultivating of 0.5 kg lemon seeds; more than 400 seedlings are growing well.
- A new support staff, a nursery caretaker, has been appointed at the MD-AFRC, and assigned with roles and responsibilities, with a focus on caring for the demonstration plots and nurseries.



- Nurseries of peach (3 kg), avocado (2 kg) along with vegetable nurseries (cucumber, pumpkin & luffa gourd) have been established, and 250 mango seedlings have been grafted. Seedling production and distribution is a regular activity of the Centre.
- Training on grafting, nursery management, cutting and pruning, is provided to the staff members of MD-AFRC in coordination with Deusa Agro-Forest Resource Centre, Solukhumbu. Mr. Keshab Prashad Rai visited the Centre and trained the staff members.
- 1,405 seedlings of 16 varieties of tree crops are being hardened, and will be ready soon for distribution to farmers.

Income generated by MD-AFRC during the reporting period included the following.

- Of the 639 kg of ginger and 50 kg of turmeric, the Centre stored 222 kg ginger and all the turmeric as seed for subsequent cultivations. The surplus 417 kg of ginger was sold and generated an income of NPR 12,510/- (£ 83).
- MD-AFRC generated an income of NPR 3,080/- (£ 21) from the sale of vegetable and herb seedlings as given in Table 1. Such sales motivate the farmers to grow organic seedlings in their home garden.
- Vegetables were also sold for income: this included 10 kg of tomato, 12 kg of cauliflower, 8 kg of beans, 2 kg of coriander, 15 kg of squash, and 10 kg of guava. Approximate total value of these sales was NPR 2,660/- (£ 18).
- The MD-AFRC also generated an income of NPR 7,500/- (£ 50) from sales of forage seedlings, such as Napier and Broom grass).
- About 150 kg of almond has been produced but it was not possible to de-husk the nuts as proper tools and equipment are not available in Nepal, which has discouraged farmers. Such nuts attract a good market price, thus the necessary tools are being sought from outside Nepal.

Table 1: Vegetable & Herb Seedlings – production & income generation at the MD-AFRC

#	Seedling	Number of seedlings	Rate in NPR	Amount in NPR	GB £ equiv.
1	Cucumber	2	10	20	0.13
2	Pumpkin	86	10	860	5.73
3	Bitter gourd	200	10	2,000	13.33
4	Aloe Vera	2	50	100	0.67
5	Rose	2	50	100	0.67
<b>Totals</b>		<b>292</b>		<b>3,080</b>	<b>20.53</b>

In total, in this reporting period, MD-AFRC generated a total income of NPR 25,750/- (£ 172) from the sale of products, seed and seedlings.

### **Indicator 2: 6 fully operational satellite nurseries (SLNs) in place**

The status of the 6 satellite nurseries (3 already established in Phase I (1-3 below) and 3 new nurseries established in Phase II during the reporting period is as follows.

1. **Chandeni SLN:** 2,400 seedlings have been produced and generated an income of NPR 3,800/- (£ 25). It also made an income of NPR 87,200/- (£ 581) from the sale of 2.2 tons of vegetables (eg. cauliflower, chilly and cabbage). At present, there are 63 tree crops growing well as mother plants.
2. **Jyamdi SLN:** the production and income generation from vegetables and cash crops was affected due to sad death of the Chairperson of the SLN. During last summer, 1,013 seedlings were planted as part of a formal plantation programme in coordination with the



Rotary Club of Durbar Marg. The plantation was carried out under the leadership of the Mayor and Deputy Mayor of the Municipality. At present, there are 213 tree crops along with 900 forage plants, and all are growing well.

3. **Halde SLN:** an income of NPR 109,000/- (£ 727) has been generated from the sale of 1,910 kg of vegetables, and, at present, there are 56 tree crop seedlings growing at the SLN.
4. **Jay Laxmi SLN:** this new SLN in Bhatpole has generated an income of NPR 107,000/- (£ 713) from the sale of 1,420 kg vegetables in its first operational year. A plantation of tree crop seedlings is planned for establishment in the forthcoming winter season.
5. **Sapta Kanya SLN:** this new SLN in MDM-8 has also succeeded in generating NPR 110,000/- (£ 733) from the sale of 3,000 kg of 3 varieties of vegetables; 24 high value tree crop seedlings were planted in the summer plantation season.
6. **Churithumka SLN:** this new SLN has just started nurseries of onion and cabbage; more than 2,000 saplings are growing well and are ready for sale at the local level.

Recently, the project has provided more than 60 kg vegetable seeds for intercropping and organic vegetable production in 5 SLNs as provided below in Table 2.

Table 2: Summary of vegetable seeds support to the SLNs

#	SLN	Cauliflower	Carrot	Radish	Onion	Coriander	Capsicum	Cabbage	Total in Grams
1	Jaya Laxmi	130	70	80	60	180	40	300	860
2	Jyamdi	100	60	400	100	440	100	20	1,220
3	Churithumka	180	90	360	180	360	60	90	1,320
4	Halde	357	53	357	74	357	0	59	1,257
5	Sapta Kanya	520	78	440	138	440	20	20	1,656
<b>Total</b>		<b>1,287</b>	<b>351</b>	<b>1,637</b>	<b>552</b>	<b>1,777</b>	<b>220</b>	<b>489</b>	<b>6,313</b>

## **Output 2: Establish 2 Outlet Centres for organic produce**

### **Indicator 1: Outlet Centre established at MD-AFRC**

MD-AFRC has been promoted as an Outlet Centre for the provision of seedlings, seeds and agro-products. The revolving fund established in Phase I is used for procurement and seeds, and sales at the local level. The seedlings of different tree crops varieties have been distributed to the local farmers who visits the Centre.

To promote MD-AFRC as Outlet Centre of final products and to enhance household incomes, the one day practical pickle production training was organized to enable 33 local women to run pickle enterprises. A linkage for marketing the pickles in Kathmandu has been established in cooperation with the training facilitator. 100 pickle jars were produced during the training - 8 of ginger and garlic pickle, and 92 of lemon pickle.

### **Indicator 2: An Outlet Centre established in Nagarkot**

The establishment of the planned Outlet Centre in Nagarkot remains under discussion with the Municipality office.



### **Output 3: Deliver training in agroforestry organic farming and adaptation to farmers**

#### **Indicator 1: Total attendance at farmer training events in phase 2.**

Total attendance at farmer training events in phase 2: 14 field-based practical trainings among farmers were carried out in the reporting period with a total of 310 local farmers being trained on different aspects of agroforestry – see Table 2 below.

Table 2: Farmers Trained through farmer field schools (FFS)

#	Training on:	Trained farmers		
		Male	Female	Total
1	Climate Change Adaptation	7	11	18
2	Cutting and pruning training (4 trainings)	38	33	71
3	Nepali Bio-intensive plantation techniques (6 trainings)	85	86	171
4	Negative impact of pesticide	18	10	28
5	Kitchen garden cultivation	9	13	22
<b>Total</b>		<b>157</b>	<b>153</b>	<b>310</b>

Details of the trainings are provided in Annex 1.

Along with the capacity buildings, the trained famers have been supplied with tree crop seedlings. 7,890 seedlings, of which, 7,785 seedlings were high value tree crops such as litchi, mango, avocado, lemon, banana, orange, macadamia nuts, were procured and distributed for plantation. Of these, 5,877 seedlings were provided to 167 local farmers for plantation, and the remaining 2,013 tree crop seedlings were planted by institutions:

- i) in coordination with the Rotary Club of Durbar Marg, 1,013 seedlings were planted in Jyamdi Chandeni Satellite Nursery under the leadership of the Mayor and Vice Mayor;
- ii) 250 seedlings were planted in the Thami Danda View Tower premises also in the presence of the Mayor and the Deputy Mayor of MDM;
- iii) 250 litchis were cultivated on marginal land of the MDM to establish a collective litchi orchard; and -
- iv) 500 lemon seedlings were planted in Jogitar Park, MDM 10 in coordination with the local government.

In addition, 6,000 Super Napier grass saplings were supplied to Sindhuplachowk by the MD-AFRC.

#### **Indicator 2: No. of monthly trainings provided at the AFRC**

A total of 13 monthly trainings were organized and 294 local farmers (68% female) were trained on organic farming, vegetable production and tree crop nursery management as outlined in Table 3.

Details of the trained farmers are provided in Annex 2.

A field visit by the organic certification inspectors was organized and the organic fields were inspected. The expert, Mr. Bhola Shrestha, carried out a 2 day field visit, observed the farmers, checked the documentation and provided further instruction and feedback to ensure the eventual accomplishment of organic certification. The certification process concerns 17 model farmers and is ongoing.

Table 3: Trained farmers through monthly trainings

#	Training on:	Participants:		
		Male	Female	Total
1	Organic farming	10	30	40
2	Organic farming	3	22	25
3	Organic farming	5	9	14
4	Organic farming	0	14	14
5	Seasonal vegetable production	5	4	9
6	Seasonal vegetable production	10	11	21
7	Seasonal vegetable production	10	5	15
8	Seasonal vegetable production	8	12	20
9	Tree crop nursery management, and pest and disease management	1	28	29
10	Tree crop nursery management, and pest and disease management	30	6	36
11	Tree crop nursery management, and pest and disease management	8	13	21
12	Tree crop nursery management, and pest and disease management	3	23	26
13	Tree crop nursery management, and pest and disease management	1	23	24
<b>Total</b>		<b>94</b>	<b>200</b>	<b>294</b>

**Output 4: Educate students at 11 Secondary Schools in the project area**

**Indicator 1: No. of students engaged in the education programme**

618 students through 16 training events at different schools were educated and skilled on organic farming and climate change, as described in Table 3.

Table 3: Record of Coached Students

#	Training on:	No. of School Children		
		Male	Female	Total
1	School garden management at Mahakali Secondary School	17	22	39
2	School garden management at Dedithumka Secondary School	5	15	20
3	Bio-intensive techniques at Dwarpaleshwor Secondary School	11	23	34
4	School garden management at Janakalyan Basic School	12	15	27
5	Cutting and pruning at Uma Shah Secondary School	12	17	29
6	School garden management at Baluwa Secondary School	15	26	41
7	Bio-intensive techniques at Bagdevi Secondary school	12	12	24
8	Organic farming technologies at Dedithumka Secondary School	22	17	39
9	Organic farming technologies at Tapeswor Secondary School	7	37	44
10	Organic farming technologies at Mahakali Secondary School	32	53	85
11	Organic farming technologies at Janakalyan Basic School	14	33	47
12	Organic Farming Technologies in Baluwa Secondary School	20	26	46
13	Bio-Intensive pit preparation at Dwarpaleshwor Secondary School	4	22	46
14	Agro-Forestry garden establishment at Dwarpaleshwor Secondary School	11	25	46
15	Climate change and adaptation at Mahakali Secondary School	8	21	29
16	Climate Change and adaptation at Bhadrakali Basic School	8	14	22
<b>Total</b>		<b>210</b>	<b>378</b>	<b>618</b>

Details of the students trained are provided in Annex 3.



## **Indicator 2: No. of school gardens sustainably managed and maintained**

A detailed monitoring of all 6 established school gardens was carried out, and updated with the additional plantation of fruit tree seedlings and trained students. An additional agro-forestry garden in Saraswoti Basic School was established and the garden at Mahakali Secondary School, Nagarkot, is almost complete – the layout has been done and plantation is planned during the upcoming winter season.

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## ***Output 5: Awareness on Environmental Issues & Agroforestry Options increased***

### **Indicator 1: No. of programmes broadcast on local radio to raise awareness on (a) climate change risks, adaptation and mitigation measures; (b) organic farming; (c) agroforestry**

In this reporting period, 11 episodes were produced and broadcast with the cooperation of Radio Namobuddha up until the 1<sup>st</sup> week of July, 2022. The radio programmes covered the following thematic issues:

- ✓ commercial organic vegetable farming,
- ✓ pest management and control,
- ✓ disease and pest identification, prevention and treatment on citrus trees,
- ✓ climate change and its connection to crop production,
- ✓ success of the project,
- ✓ community movement towards organic farming culture.

A synopsis of the radio programmes is provided in Annex 4.

After July, 2022, the production and broadcasting of the radio programmes, incorporating the lessons learnt from Phase I along with a more effective strategy, is under discussion, and the new series of programmes will be aired from January, 2023.

A 22-minute documentary has been produced covering the achievements to the date. In addition, a short video on the radio programme, focusing on the impacts and lessons learnt, is under production.

### **Monitoring**

The project staff and project management team has been monitoring the tree cropping orchards of individual farmers to assess the survival status of planted seedlings and general health of the trees during the reporting period. Staff conducted regular visits to each organic group, all the satellite nurseries and individual farmers' fields to provide the necessary technical support. Data and information is entered on the monitoring formats developed by the project management team.

Regular field observations and progress tracking motivates the farmers and ensures improved results and achievements by both farmers and the project. Regular monitoring visits are also undertaken by senior management to provide feedback to the project staff to ensure optimal performance.

The donor representative from The Glacier Trust, Ms. Ami Wilson along with Mr. Narayan Dhakal, the Project Manager and the project staff visited the project area for monitoring in February 2022. The team visited all established satellite nurseries, organic villages and organic farmer groups to overview project progress and the farmer's success. The visit focused on progress and assessed the needs of the farmers. The Project Manager provided technical advice and brief training on organic farming and pruning and other farming aspects to the farmers during the visit.



Ms. Ruby Glasspool, the new Executive Director of TGT carried out a monitoring visit, along with the Project Manager and project staff, to the MD-AFRC project area between 11 and 13 November, 2022. The team also visited all satellite nurseries, organic villages and organic farmer groups to review the progress made by the farmers, and to introduce Ms Glasspool to the project.

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## **B. Next Steps**

- Seek further support based on the mini-project concept and farmers demand during the visits of various donors.
- Winter plantation at all sites.
- Seedling/sapling production for summer plantation season.
- Continued supervision and extension of the satellite nurseries.
- Home visits to local farmers to observe and monitor seedling plantation and survival status.
- Continuation of trainings, orientations and awareness raising activities.
- Continuation of farmer field schools, monthly trainings and orientations to farmers along with plantation of the seedlings and saplings.
- Continued efforts to establish an Outlet Centre for organic products.
- Continual education and awareness-raising on impacts of pesticides and chemical fertilizers, and the importance of organic fertilizers and bio-pesticides during formal training sessions and all farm, nursery and school visits.
- Continuation of regular radio programmes.
- Regular field monitoring visits.
- Continued coordination and cooperation with the local government on all aspects of the project, especially for the extension of the satellite nursery programme.

## **Appendices:**

Appendix 1: Mini-project Concept Note in relation to the Kalidevi Women Group.

Appendix 2: Mini-project Concept Note in relation to Bhatpole Village.

Appendix 3: Nursery Nike salary support (the concept has been shared previously).

Appendix 4: Organic village support (the concept has been shared previously).

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