The Marr-Munning Trust

Grant Monitoring Form – End of Project Report

Please complete this form and email to:
You must complete and return this form by: _____

NOTE: When discussing your project please do not use any actual names or provide information that could identify an individual.

1. Name of Organisation	The Glacier Trust

ABOUT THE GRANT WE AWARDED:

2. Summary of purpose for which the grant from MMT was awarded Mandan Deupur Agroforestry Resource Centre (MD-AFRC)	
3. Amount of Grant Awarded:	£55,658
4. Period Covered By This Report:	01-12-2018 to 30-11-2021

TELL US ABOUT YOUR PROJECT AND THE IMPACT IT HAS HAD SO FAR:

5. During the 3 years covered by this report, what activities have you undertaken?

Output 1. Detailed Baseline and Feasibility Studies Completed

Coordination with local government, concerned line agencies and local communities

a) Coordination with Local Government

Project initiation workshop**:** the project modality, concept and budget were shared with the local government at an initiation workshop on 7 June 2019, and approved by the Municipal Council. Subsequently, most of the project activities were planned in cooperation with the local government and implemented in their presence. Regular communication and cooperation was carried out with the office of the Municipal Executive, and all ward offices throughout the project period.

Feasibility studies and surveys were carried out to locate suitable sites for the Agroforestry Resource Centre in Mandan Deupur Municipality (MDM) Ward 11 and satellite nurseries with the active involvement of the Ward Chairperson and local government officials. Their engagement supported the selection of the best location for the Centre.

The annual project plans for all 3 years have been submitted to the local government and included in the annual programme of the local government for each year.

The COVID-19 pandemic: we carried out regular communication and coordination with all the ward offices to ensure the satellite nurseries survived during the lockdowns.

Legalization of CBOs: the MD-AFRC (Mandan Deupur AgroForestry Resource Centre), the organic farmer groups and the satellite nurseries have been registered as agriculture groups with the local government – as follows.

- The Sunaulokot Organic Agriculture and Livestock Farmers Group (registered on 18.01.2020)
- The MD-AFRC (03.01.2021)
- The Jyamdi Chandeni Satellite Nursery (17.01.2021)
- The Bayerbot Organic Agriculture Group (20.02.2019)
- The Kalidevi Organic Farmers Group[1] (22.04.2021)

The Plant Health Camp: this was organized jointly as a plant health camp and pathology clinic with the local government on 20 December 2019 to diagnose the disease and insect problems of crops and vegetables in the area.

The Soil Testing Lab.: the project assisted the Municipality in functionalizing the soil test lab at MDM from 20 December 2019. The lab. had been established by the Municipality but there was a lack of technical knowledge to operationalize it. It is now in operation and tests have been carried out on soil from 7 locations in MDM; results, explanations and recommendations have been provided to the farmers.

Irrigation kits: five sets of drip irrigation kits were purchased by the MD AFRC with a 50% subsidy from the local government and installed at the Centre and the satellite nurseries.

Seedling distribution: regular coordination was carried out with the Agriculture Section of the MDM in relation to the distribution of fruit and tree seedlings, which was carried out jointly. The seedling distribution programmes were carried out each time in the presence of local government representatives to ensure a high level of transparency.
In the 2nd year, the MDM Mayor, Mr Tok Bahadur Waiba, was present during the plant distribution at the Centre on 6 July, 2020. He much appreciated the plantation techniques and progress at the AFRC, and encouraged the local farmers to take up tree cropping.

Support to farmers: the local government supported the project's request and approved the supply of irrigation pipes to 3 villages; likewise, our request for materials to construct 30 greenhouses and 35 plastic ponds was also approved (refer to Activity Section - Output 3 for further details).

Distribution of agri-materials (e.g. plastic tunnels and ponds, secateurs, pruning saws and water cans) was organized in cooperation with the local government. Larger agri-materials such as greenhouses and plastic ponds, were provided to the local farmers on the recommendation of the respective ward offices.
Cardamom promotion: a 4-day training on cardamom cultivation was organised in cooperation with the local government from 20 to 24 March 2021.

[1] a women led agriculture group

Local Government subsidies: the local government provided a 54% subsidy for the construction of an office building and nursery truss house and fencing at the Jyamdi Chandeni Satellite Nursery, MDM Ward 12. The balance of NPR 2,65,635/- (approx. £ 1,630), 46% of the cost, was contributed by EcoHimal Nepal - the construction was completed and seedling production at the satellite nursery is on-going.

Greenhouse support: EcoHimal and the local government also jointly invested in the construction of a permanent greenhouse with an iron frame on the land owned by the Kalidevi Organic Farmers Group to support organic farming. EcoHimal provided NPR 167,540/-, some 50% of the total construction cost of NPR 333,611/-.

Animal shed support**:** Support from the local government: a request from the MD-AFRC for funds to construct an animal shed was approved by the local government and is included in the annual Redbook 2078/79 (2021/2022), a record of officially approved expenditure.

The MD-AFRC: in Year 3, the local municipality government also committed to allocate NPR 300,000 to promote MD-AFRC as a seedling production and outlet centre, costs to be shared with the Eco-Himal project. The first fruits ever produced fruit at the Centre, peaches and apples, were gifted as souvenirs to the Mayor and his team at the Municipal Office. Mr. Waiba tasted and shared them among the officials and other stakeholders and requested the project staff to share the bio-intensive plantation techniques with as many farmers as possible.

The National Rice Day Celebration was celebrated on the 15th Asadh (29 June) of each of the 3 years in coordination with the Ward Office. The Ward Chairperson and Chief Guest, Mr. Madhab Acharya, inaugurated the rice day by planting rice seedlings.

Ward Office Cooperation: to promote bio-intensive techniques recommended for fruit cultivation, all 12 Ward Offices were contacted and requested to identify farmers for practical training. All Ward Chairpersons supported us by selecting farmers from their respective wards.

Coffee promotion programme in 5 model farmers' fields were conducted in cooperation with the local government, which provided 500 coffee seedlings while the project provided the technical support during plantation.

Training programmes: most of the other training programmes undertaken during the 3-year project duration were organized in coordination with the local government. Where possible, the Chief of the local agriculture section participated and facilitated the trainings organized by the project.
Organic Certification: the local government's Agriculture Section has been closely cooperating with the project in the organic certification process for the local farmers in the organic villages.

Guidance and project monitoring from the local government: the Ward Chairperson of MDM Ward 11 regularly attended the periodic meetings organized by the MD-AFRC management committee, and his guidance to the committee has been beneficial for both institutionalization and performance. The Ward Chairpersons of

all wards of MDM and the Mayor and Deputy Mayor of MDM provided useful feedback after their regular monitoring visits to the AFRC, including appreciation for our work.

The Motivated Mayor**:** the Mayor, Mr. Tok Bahadur Waiba, provided ½ ropani (2,738 square feet) of land free of cost to motivate 17 local women farmers to adopt collaborative organic farming.

b) Coordination with the Local Communities

A farmer's exposure visit was organised to the Deusa Agroforestry Resource Centre in Solukhumbu in Year 1 between 13 and 15 December 2019 under the leadership of Mr. Madav Neupane, the Ward Chairperson of MDM-11. The cost of this visit was shared between the project and the Ward Office.

Regular communications and coordination were undertaken with the satellite nursery lead farmers, even through the pandemic lockdowns, to provide orientation, encouragement and technical guidance to ensure proper care of the nurseries and plants during these difficult times.

Trainings: a training on bio-intensive plantation techniques was provided on 9 June 2020 to the Chandeni Mandan Small Farmers Agriculture Cooperative, and monthly trainings in different topics were organized at the AFRC on the 16th day of each month, whenever possible. Farmer field schools and door-to-door advisory visits were also undertaken when possible.

Create and annually update the farmer database: profiles of all trained farmers and receivers of tree crop seedling from the MD-AFRC were created in a database which was updated annually, as were both written and digital databases of farmers engaged in the project.

Undertake a study to ascertain best AFRC location: the assessment of the area for the best AFRC location was carried out in Year 1, and the final selection of land under the Community Forest Users Group of Bokse Samudayik Ban at Timalsina Gaun was approved by the local government and the local communities. Consequently, the MD-AFRC was established at this site.

Feasibility survey/study to ascertain the best high value crops for the target area: this detailed baseline survey was carried out in Year 1, and the best high value tree crops in line with geographical aspects and climatic conditions were identified and proposed and discussed in depth with the communities - the project implemented and promoted tree crops seedlings in the project area on the basis of these comprehensive survey findings.

Output 2. Establishment of the AFRC, Outlet Centres, and Satellite Nurseries Completed

Construction of prefabricated farmstead building

A prefabricated farmstead building was constructed in Year 1 at the MD-AFRC, comprising a training hall, a small office, a staff room, and a kitchen and toilet and bathroom. Basic furnishing and decoration were done in all rooms. The planned budget was limited and insufficient to complete the office but EcoHimal Nepal managed additional internal funds of NPR 477,846/- (approx. £ 2,900) for completion of the construction, office set-up and the interior decoration. The centre is now in full operation.

An 'Eco-San' system was installed in the toilet so the AFRC could utilize urine and excreta as manure. A simple grey water management system was also installed as a model and the grey water is being used for irrigation.

A two-storey full metallic pre-fabricated house has recently been constructed at the Centre through the use of additional EcoHimal Nepal internal resources to provide a store on the lower story, and an office and staff room on the upper story. This also frees up space in the original building for guests and visitors.

The amount contributed by Eco-Himal from its own resources for the two buildings at the MD-AFRC over the 3-year period totals NPR 1,085,111/-.

The satellite nurseries: all three established satellite nurseries are resourced with land, agri-materials and planting materials, and greenhouses and irrigation facilities are in place.

Land preparation and establishment of the MD-AFRC nurseries and demo plots:
the project established 18 demonstration sites of specific species, and various nurseries to produce saplings and seedlings of tree crops and vegetable seedlings at the AFRC. The fruit trees in the demonstration sites have started bearing fruit, which were consumed locally and gifted to the local government and stakeholders.

In 2018, a greenhouse was installed within the MD-AFRC premises using local materials, essentially bamboo and wood poles to demonstrate improved farming techniques to the local farmers. Organic vegetable production had been started in the greenhouse when a very heavy wind and rain event occurred which, unfortunately, destroyed the structure; it has been repaired twice - the plastic sheet was changed and the bamboo poles were replaced.

In 2021, an iron-poled greenhouse was installed at the MD-AFRC to produce more seedlings in a more protected environment and to benefit more farmers with healthy seedlings. The greenhouse will promote commercialization and professionalism in seedling production, provide greater protection against extreme weather events, and currently houses grafted seedlings for hardening of diversified tree crops and vegetable seedlings.

The demand for seedlings from the local farmers continues to increase, and multiple farmers now visit the Centre for seedlings, requesting more seedlings than the MD-AFRC can provide. There is an urgent need for more greenhouses for seedling production; as a result, an application has been submitted to The Britain Nepal Society through The Glacier Trust for funding support.

Current status of seedlings in MD-AFRC/Nurseries: the seedling status at the MD-AFRC nurseries is updated regularly in each interim reporting period. At November 2021, the status of seedlings is as follows.

Table 1 Summary of seedlings produced at MD-AFRC nurseries

Species	**Seedlings Produced& Hardened at the MD-AFRC**	**No. of distributed and planted seedlings**	**Number of seedlings deceased**	**Current seedlings in stock**
24	1,847	1,583	43	221

The survival status of the planted seedlings of fruits, nuts, ornamental trees and spices at the MD-AFRC is also updated regularly. Table 2 below compares the survival status of seedlings planted over the 3 years from field observations; the survival rate of seedlings to date is 78% which is satisfactory. Some 22% seedlings died due to a variety of circumstances.

Table 2 Summary of the survival status of the tree crop seedlings at MD-AFRC

#	**Particulars**	**Survival Status of Seedlings**				**Total**
		Active	%	Deceased	%	
1	Seedlings planted in 2019	143	68	68	32	211
2	Seedlings planted in 2020	113	93	9	7	122
3	Seedlings planted in 2021 (to date)	6	100	0	0	6
Total		**262**		**77**		**339**
%			**78**		**22**	

Bio-fencing: 1,532 plants of 15 species have been planted around the boundary of the AFRC, for protection from grazing animals and as a demonstration to local farmers; these plants have a survival status of almost 100%, have grown well and can now be described as bushes.

Fodder and forage plants: 825 saplings of 7 species of fodder and forage have been planted to minimize soil erosion; survival status is also nearly 100%.

Purchase of nursery, polytunnel tools/equipment and planting materials: the project promoted high value tree crops at the MDM, and the seedlings of improved varieties of fruits, nuts, and spices procured from various nurseries and planted at the MD-AFRC and satellite nurseries were distributed to the local farmers. A summary of the procurement of seedlings is show in Table 3.

Table 3 Seedlings procured by MD-AFRC by year

#	**Year**	**Number of Seedlings Procured**
1	2019	1,656
2	2020	3,335
3	2021	2,120
	Total	**7,111**

Of the procured 7,111 seedlings, 4,015 seedlings were distributed to 1,940 local farmers. The remaining 3,096 seedlings were planted in the centre and satellite nurseries for demonstration, training and production. A summary of the seedlings purchased, distributed and under current hardening is presented in Table 4 below.

Table 4 Summary of seedlings purchased and distributed over the 3-year period

#	Particulars	No. of seedlings
A	**Number of Seedlings Purchased over the 3 years** (25 varieties)	7,111
	Total	**7,111**
B	**Seedlings distributed up to the summer 2021 planting season**	
	No. of seedlings planted at the MD-AFRC in the 3 years	1,698
	No. of seedlings distributed to farmers	4,015
	No. of seedlings distributed/ planted at Satellite Nurseries	218
	No. of seedlings planted in school agroforestry gardens	67
	No. of seedlings died	892
	Total	**6,890**
C	**Seedlings under the hardening process at the MD-AFRC at December 2021**	**221**

Plant distribution was followed by technical knowledge and skills transfer on alternative farming technologies. All fruit and nut trees were planted using bio-intensive techniques.

Establishment of nurseries in 2 other wards: 3 satellite nurseries have been established – 2 were established in 2019 and 1 in 2020. The progress of all 3 satellite nurseries is summarized below.

- *The Satellite Nursery (SLN) at Nayagaune, Ward no. 3:* the nursery is well managed by the lead farmer Mr. Chutar Bahadur Tamang. 290 fruit seedlings (190 Pomegranates, 50 Citrus, 30 Peach and 20 Pomelo) are growing well. In addition, 140 seedlings of multipurpose, forest and flower species (20 China Berry, 100 Rose and 20 Moringa) have been planted.
- *The SLN at Chandeni (Ward no. 10):* this satellite nursery is also properly managed by the lead farmer, Mr. Shyam Kumar Lama. 390 seedlings of nuts, fodders and forest tree species (15 Walnut, 125 Ipil Ipil, and 250 China Berry) have been planted, and seasonal vegetable seedlings are produced and sold.
- *The SLN at Jyamdi (Ward no. 12):* 520 mother plants (400 Birendra flower, 100 China Berry and 20 seedlings of 8 different varieties of fruits) are growing well and are in good condition in the nursery.

At all the above nurseries, the necessary infrastructure for seedling production are in place; these include a small office building, a nursery house, and fencing. The costs for these was provided by a joint 50:50 funding partnership between the local government and Eco-Himal, the latter contributing NPR 265,635/- from its own resources. 18 local farmers and committee members contributed voluntary labour equivalent to NPR 295,150/- during the construction.

Establishment of Organic Villages (OVs): in total, 6 OVs have been established, 4 of which have been registered with the Mandan Deupur Municipality as agriculture groups. The two newer OVs, Jailaxmi Organic Group in MDM-11 and Saptakanya Organic Group in MDM-8 are in the registration process.

A total of 109 farmers, of which over 40% are female, have been enrolled in 5 OVs, and all continue to produce vegetables organically.

The project has provided trainings and orientations to the local OV farmers. As use of chemical fertilizers and pesticides in the area is very high, awareness raising was vitally important at the beginning on the dangers of these chemicals (some of the pesticides are on the banned list in Nepal) and the importance and advantages of organic cultivation practices. Following on from this, capacity building training was provided to the farmers on organic agriculture, compost and bio-pesticide preparation. Progress is being made on weening farmers off the use of chemicals.

Establishment of an outlet for organic produce and seeds and seedlings: outlets for the sale of organic produce will be established later – this was delayed by the pandemic and subsequent lockdowns, but will be undertaken in cooperation with the local government when the farmers have fully accepted organic production, and production at the OVs has increased.

Currently, the MD-AFRC and the 3 satellite nurseries are providing local farmers with seeds, seedlings, mother plants and agri-materials; these 4 institutions are thus the outlet centres for the present time, which local farmers frequently visit for procurement of seedlings and seeds. For organic seed and seedling production, the farmers are provided with capacity building, training and advice to promote organic seedling and crop production.

Establishment of a system for low interest micro loans: a revolving fund under the ownership and control of the MD-AFRC has been established to provide keen local farmers to adopt organic farming and transform them into small entrepreneurs. This revolving fund of NPR 570,000/- (circa £ 3,500), contributed from Eco-Himal internal resources, has been established with 2 purposes:

a) utilizing the seed money for production, procurement and distribution of vegetables, vegetable seeds and seedlings to enable the MD-AFRC to be economically independent; the revolving fund facility will also support the MD-AFRC to run an outlet for organic produce;
b) to permit the provision of micro loans to individual farmers and community groups for small agri-enterprises; individual farmers can receive up to NPR 25,000/-, and farmer groups up to NPR 100,000/-.

The revolving fund is operational; funds have been deposited in the MD-AFRC official bank account, and the MD-AFRC management committee has recently finalized operational guidelines, and are now ready to receive applications from local farmers for use of the revolving funds in 2022.

Output 3. Quality Training of Farmers in Agro Forestry and Agri-Options Delivered

Provision of training workshops: the project organized a total of 82 trainings on different agroforestry and agri-options, such as: bio-intensive plantation; organic farming; nursery establishment; fruit farming; organic and liquid manure preparation; disease and pest management.

The project organized most of the trainings at field level through demonstration and practical sessions. Community trainings were also organized with face to face interactions between the project team and benefiting farmers. However, during COVID-19 and the subsequent lockdowns, due to travel and communal gathering restrictions, training delivery was on-line; 9 virtual trainings were conducted.

During the pandemic, small community groups were also educated and trained on preventive and protective measures, such as social distancing, compulsory mask wearing and regular hand washing and sanitizing.

To support the training efforts, 94 training manuals have been prepared in both Nepali and English, on different aspects of farm management, cropping and cultivation.

Provision of regular monthly farmers training courses at the AFRC: the MD-AFRC conducted 13 monthly trainings to deliver technical knowledge on improved farming techniques among local farmers. Practical knowledge on different aspects of tree cropping with a focus on diversified production (vegetables and fruits) was disseminated. MD-AFRC was promoted as a training hub and organized farmer field school with practical demonstration at the centre. Due to the pandemic and subsequent two lockdowns, the programme was interrupted, and it was not possible to organize the number of monthly farmer trainings at the MD-AFRC as had been planned, which was unfortunate.

Organic certification: organic certification of the local organic producers was carried out in coordination with *Organic Certification Nepal* (OCN). In Year 2, field observations in the three organic villages and the satellite nurseries was undertaken. Mr Bhola Kumar Shrestha, the senior organic certifier, oriented the farmers about the organic certification, its process and importance.
An orientation workshop was then organized to explain to 17 farmers from 5 groups the basic procedure for organic certification, the basic principles of organic agriculture, its importance, associated problems, and organic product marketing; the farmers were trained to maintain diaries with regular updates, which is an internal control system at farm level.
The OCN carried out supervision and monitoring follow-up visits of the trained farmers and checked the diaries, and provided advice for improvement and encouragement.
A final inspection of the farms is planned for the future and if they are found eligible, the farms will be certified, after which their products can be marketed as organic products through the outlet centres as planned.

Provision of specialist training: 9 advanced trainings from specialists were carried out during the project on the following: bio-intensive plantation techniques; diseases and pests of citrus fruits and their control; soil structure, soil problems and Bordeaux-paste and mixture preparation; management of diseases and pests of paddy; organic vegetable farming; vegetable farming in greenhouses; tree cropping technologies and climate change adaptation; intercropping, mixed cropping and multi-layer cropping; the impact of chemical pesticides and fertilizers on soil health, human health and the environment.

Post training promotion of high value tree crops and alternative farming systems and technologies

A. Alternative Farming Systems

- Imported organic fertilizer trial on potatoes: a trial was conducted with an organic fertilizer called *Black Wonder* (10kg was imported from Thailand) on potatoes in Year 2. The fertilizer was applied to beds of the improved NS variety, and production compared against a plot which was treated with locally farm-produced farmyard manure (fym) - 156 seed potatoes were planted in each plot. Production from the *Black Wonder* plot was significantly better than from the plot treated with fym; 45 kg potato was produced from the *Black Wonder* plot, while only 30 kg was produced from the fym plot. As the cost of importing such fertilizer from Thailand is out of the reach for our farmers, the lessons learnt from this trial are i) to increase the amounts of fym applied, and ii) to ensure that the farmers are preparing good quality compost and fym.

- Utilization of local resources**:** use of local resources along with innovative technologies has been prioritized in the farmer training sessions – for example the use of bamboo for construction, and as an alternative to poly bags, the leaves of Sal (Shorea robusta, a hard wood tree) were made into bags and filled up with a soil/organic fertilizer mix and used for seedling production.

- Soil testing and results sharing with local farmers: 13 soil samples of 5 farmers from MD-11 were collected and analysed for pH in cooperation with the local government. The results were explained to the 13 farmers, and technical recommendations and suggestions on soil improvement provided. Most of the soils tested were acidic, and farmers were requested to use agricultural lime to improve the quality of their soil.

- Drip irrigation: drip irrigation technology was introduced at the MD-AFRC and satellite nurseries, to enhance production and water management, and as a demonstration to farmers.

- Provision of seedlings and seeds along with technology transfer: trained local farmers were provided with improved and new species of fruit, nuts, and vegetables to promote layer farming and agroforestry techniques through adoption of high value tree species, as well as the necessary knowledge, skills, and alternative farming technologies.

- System of Rice Intensification (SRI): an SRI rice plot was demonstrated at the MD-AFRC to permit farmer observation and deal with the water shortage. However, this trial failed as the seedlings were damaged by wild rabbits, and the plot failed to yield.

B. Agri-materials Support

- Supply of tools and materials: to promote tree cropping in the organic villages (OVs) and satellite nurseries (SLNs), various agri-tools/materials (as listed in

Table 5) were provided as well as plastic for tunnels and ponds, and sprayers. These agri-materials were distributed to 101 local farmers.

Table 5 Agri-materials distribution

#	Type of Tool/Material	Total Quantity	Distributed Quantity	Remaining quantity yet to be distributed
1	Plastic tunnel	67	67	0
2	Plastic pond	44	44	0
3	Secateurs	75	62	13
4	Pruning saw	75	40	35
5	Watering can	75	45	30
6	Back-pack sprayer	4	4	0
7	Grafting knife	5	1	4

All benefited local farmers are cultivating vegetables in their poly-tunnels, applying the new technologies and practices.

- Irrigation pipes: 3 villages were supported with irrigation pipes at the request of the local government. 600 metres of 2" pipe for irrigation were provided to MDM Ward 7 to serve 41 families; 450m of 4" inch pipe to Thuldihi village of Jyamdi, MDM-12 benefitting 14 farmers for vegetable farming; and 2,400m of 1" pipe to Salbisauna village of MDM-12 benefitting 70 farmers.

- Support from the Eco-Himal internal sources: EcoHimal channelled agri-materials support through the MD-AFRC. The total amount contributed by Eco-Himal from its own resources in the 3-year project period for various infrastructure, agricultural materials and supplies, and establishment of the three satellite nurseries totalled NRP 3,765,816/-; these funds were used as shown in Table 6.

Table 6 Support received from Eco-Himal internal sources

Support from EcoHimal Internal Sources in the 3 year Project Period				
#	**Particulars**	**Unit**	**Quantity**	**Amount in NPR**
1	Construction of original building, toilet and other arrangements for office, training hall etc.	No.	1	402,061.00
2	Fixed assets for office running	No.	1	27,085.00
3	Seasonal vegetable seeds			7,685.00
4	Grafting knives	No.	5	2,825.00
5	Secateurs	No.	84	54,600.00
6	Watering cans (10 ltr)	No.	77	34,804.00
7	Pruning saws	No.	77	43,505.00
8	Plastic tunnels (30*50)	No.	35	383,492.50
9	Plastic tunnels (30*40)	No.	10	77,970.00
10	Plastic tunnels (12/6 mtr)	No.	22	134,640.00
11	Plastic pond (24*30)	No.	42	252,115.00
12	Plastic pond (31/43)	No.	2	12,240.00
13	HDPE pipe (32 mm)	Metre	2400	136,948.28
14	HDPE pipe (110 mm)	Metre	450	290,049.22
15	HDPE pipe (32 mm)	Metre	200	147,705.02
16	Wheelbarrow	No.	1	5,085.00
17	Backpack sprayer (16 ltr)	No.	4	9,040.00

18	Agri gloves	Set	5	452.00
19	Revolving fund support to MD-AFRC	Sum	-	570,000.00
20	Agri-materials transportation & distribution	Sum	-	57,297.48
21	Jymadi Satelite nursery -truss building construction support	No.	1	265,635.00
22	Kalidevi Organic Farmer group - metal greenhouse construction support	No.	1	167,531.37
23	2 story truss house installation cost at AFRC	No.	1	683,050.00
Total Investment				**3,765,815.87**

Output 4. Engagement and coaching of secondary school students delivered

Monthly training provided to students at 5 secondary schools: in total, 20 student trainings were conducted in 7 secondary schools; as a result, 524 school children were educated on climate change, its effects, and adaptation measures in line with improved agricultural practices. The children learnt new technical knowledge and skills, and it is hoped that these will be transferred to family members and neighbours.
Along with the students, 7 lead support teachers from the targeted schools were involved in the training sessions. The resource teachers helped to organize and disseminate the improved technologies among the students.
In addition, extracurricular activities (7 speech competitions, 3 educational exposure visits, and 3 school to school visits) were organized to share knowledge and experience among their peers.

Support provided to schools for establishment of school agroforestry gardens: in order to establish model school agroforestry gardens at the 5 secondary schools (Chendeni, Uma Saha, Bagdevi, Dedithumka and Dwarpaleshwor), the project provided resources and technical support – such as seedlings and training of the school students to establish and manage their gardens. The seedlings were planted applying bio-intensive plantation techniques, and funds were provided to each school for garden management on a regular basis.

Afforestation of denuded areas with assistance from students: four plantation campaigns were also organized through mobilization of the school children from 4 secondary schools (Chandeni, Uma Saha, Bagdevi and Dedithumka). 549 fodder and forage seedlings were planted in the summer of 2021.

Output 5 Awareness of environmental issues and agroforestry options raised

Awareness raising and coordination with local communities, government and nurseries: the project and the Agriculture Section of the MDM jointly conducted awareness campaigns on improved agriculture practices, the importance of organic farming, and impacts of chemical fertilizers and pesticides. Most of the agricultural programmes of the MDM in agriculture and environment were implemented in cooperation with the MD-AFRC.

Coordination with nurseries to identify suitable high value tree crop seedlings was undertaken with great success, and much learning and sharing took place.

Awareness raising on agroforestry options, organic farming and environmental issues including impacts of commercial chemical pesticides and fertilizers was provided at many different field based trainings and orientations.

A student of the Master of Business Administration (MBA) Agribusiness from King's College carried out his agro business consulting project as a partial academic requirement. He recommended the promotion of cooperative farming to encourage organic farming, institutional strengthening of organic groups and satellite nurseries for agro-entrepreneurship and marketing of products at a fair price.

Targeted awareness campaigns to reduce local reliance on the use of pesticides: radio programmes, information campaigns, and educational materials and a one day event were carried out with the aim of reducing the use of pesticides.
In the lower areas of MDM, farmers are dangerously reliant on pesticide and chemical fertilizer use, as the occurrence of pest infestation is comparatively high. Soils are acidic and difficult to cultivate, in part due to the heavy use of pesticides and fertilizers, and farmers are using chemicals from the early stages of cultivation and plantation. They know some of the impacts on soil, environment and human health of these chemicals, but continue to use them, even though the use of some of them is banned in Nepal.
To reduce this dangerous local reliance on the use of pesticides, regular farmer field visits, person to person communication was carried out by the AFRC management committee and project staff in the areas prone to over-use of pesticides prone area. The project also promoted the farm-based manufacture and use of bio-pesticides as an alternative solution, along with awareness raising and capacity building on preparation and use of organic manures and compost.

Broadcast monthly local radio programmes on environmental issues: in total, 59 radio programme episodes were produced and broadcast in cooperation with Radio Namobuddha – topics included the environment, climate change, organic farming, pest and disease control, and improved agriculture and tree cropping practices. The radio programmes also broadcast on two other community radios - Radio Malamchi and Sunkoshi.
The aim of the radio programmes was to educate and raise awareness on numerous issues in the local farming communities, including project activities on agriculture and environment, and the role of the MD-AFRC. Local, regional and national experts and local farmers were often on the programmes.
During the pandemic and lock-down periods, the radio programmes were basically focused on the impact of the pandemic, how to keep safe and healthy, the nationwide lockdowns, and the effects on agriculture, food security, kitchen garden and agri-product marketing. Solutions and recommendations were provided.

Promotion of good public relations and media cooperation

- the radio programmes are considered be an important and successful feature of the promotion of good media cooperation. Social media channels (eg. Facebook, Instagram, and the Eco-Himal and TGT websites) were regularly updated with

progress reports, recurring activities, learnings and discussion. Programme contents were archived and shared with different stakeholders and donors - please refer to Section 13 and Annexes 7 and 8.

- 6 x bi-monthly talk programmes (under the banner *Agri-Talk*) were organized in collaboration with Kings College in Kathmandu, Krishi Prabidhi, Baliyo Nepal and the Institution for Suitable Actions for Prosperity. Practical problems were discussed, and solutions suggested in collaboration with academics.
  The major discussion theme of these *Agri-Talks* was agribusiness career opportunities for the young who are interested in agriculture businesses.
- 2 x three day workshops on "Do Camp for Agripreneurs" were successfully conducted in collaboration with King's College – these focused on the entrepreneurial mind-set for stakeholders working in the agriculture domain.
- An exposure visit for MD-AFRC committee members, local government representatives and lead farmers was undertaken to Deusa AFRC in Solukhumbu for the purpose of learning from a success agroforestry model.

6. Have these activities differed from what you originally planned?

There is no major deviation from the activities original planned, although a few activities could not be completed due to the COVID-19 pandemic and the subsequent national lockdowns, as follows:

- establishment of the outlet centres for organic products which was planned in Year 3 but had to be postponed due to the pandemic – the situation remains unfavourable, but the satellite nurseries and the MD-AFRC have been used as interim outlets. The situation will be reviewed going forward into 2022;
- monthly trainings at the MD-AFRC – of the 30 sessions planned, only 13 trainings were possible. Online trainings in the long lockdown periods were introduced as a substitute measure;
- organic certification: the process of certification is complete bar the awarding of Certificates to the participating farmers.

Despite the pandemic and its impacts, the remainder of the planned activities were implemented according to the original plan.

7. Please describe how these activities have helped you progress towards your planned outcomes?

Outcome 1 Local Government promotes agro forestry as a mainstream farming system in Kavre District

Indicator 1: Local government documents, change in regulations, and provision of incentives to farmers to adopt agro forestry

The local government has adopted agroforestry as the best alternative solution for sustainable rural livelihoods through the promotion of the tree cropping and the organized marketing of the produce. The local government included agroforestry options, crop diversification, agriculture modernization and commercialization in its Policy and Programme 2078/079 (2021/2022) – point no. 11 (page 12). In addition, the local government has prioritized high value tree crop seedling production and

distribution at the local level (point no. 13, page 12). The local government aims to enhance rural resilience promoting sustainable agro-production and the marketing of the produce (point nos. 12 and 14, page 12).

As a result, the local government has provided 50% matching funds to develop structures, such as nurseries, greenhouses, and offices, for 2 agricultural groups. Likewise, Mr. Tok Bahadur Waiba, the Mayor of MDM, has provided land free of cost to a local women's group to promote agroforestry in MDM-3. Enthusiastic involvement of all 12 Ward Chairpersons and elected representatives was enlisted to promote tree cropping in their respective wards by selecting lead farmers for training, and ensured the local government's inclination towards promotion of agroforestry as a mainstream farming system. Local government sees the MD-AFRC as a local partner for agroforestry promotion.

In the fiscal year 2078/079, the local government also prioritized improved breeds in animals, and diverted the budget of seedling distribution to agriculture tools and livestock support, simultaneously requesting the MD-AFRC to distribute the necessary seedlings to the whole municipality.

In addition, a satellite nursery was established in MDM-12 through the support of the local government which created great momentum towards agroforestry adaptation by the Ward 12 farmers. The nursery was inaugurated and monitored by Mr. Laxman Lamsal, the Bagmati Province Parliament Member, also added impetus to tree crop promotion, indicating Province level support.

Indicator 2: Local government requests that at least 3 more AFRCs are constructed in other wards

Despite the project's original intention of working in just 3 wards, the local government requested the project to replicate the MD-AFRC success to all 12 wards; in response, the project extended coverage of activities to all 12 wards.

All Ward Chairpersons and elected representatives are supportive towards cooperating with the programme to establish an AFRC in each ward along with the construction of the required infrastructure. The local government has thus committed a matching fund on a 50:50 ratio for this extension of the AFRC initiative to all wards. During our project, the local government provided a 50% subsidy for the construction of infrastructure required for seedling production and agriculture commercialization in ward 3 and 12.

Due to current lack of funds, a consensus has been reached between the local government and the project to establish satellite nurseries in all wards, provide the necessary resources, and institutionalize them, following which they will be upgraded to AFRCs in the future.

The Mayor shared their previous failure on tree crop promotion when he requested for the establishment of an AFRC in all wards:

"Previously, we invested a huge amount in the distribution of fruit seedlings every year, but I have not seen any effective results from these plantation initiatives. I have been impressed with AFRC modalities, approach and seedling promotion strategies, and realize that the technology and better practices has made a

significant difference in tree crop survival and production. So, I recommend that MD-AFRC extends its services to all wards to transfer the necessary technical knowledge and skills, so all people can benefit and replicate the success of the AFRC".

Outcome 2 Trained beneficiary farmers more optimistic about the future of their livelihood

Indicator 1: Higher income levels of trained beneficiary farmers.

In line with the project document, farmers were trained in the necessary new skills and provided with the essential resources, and most of the trained farmers have benefited from planting of tree crop seedlings.

A project-end assessment of the income generation benefits received by farmers from the tree crops was undertaken on 206 samples; those also assessed in Year 2 from 5 wards, were also considered. Farmer annual incomes was assessed on the basis of their income from agriculture (tree crops, vegetables-intercrops/mixed crops). Although the farmers have yet to generate an income from the tree crops planted in the project period (as the tree crop seedlings provided by the project are yet to mature), they have consumed and sold the vegetables, and fruits from tree crops that were planted some years ago.

In 2020, the average annual mean income of the 206 families was NPR 7,548.54, but it reduced to NPR 5,553.57 in 2021 as shown in Table 7, due to the 2nd wave of the COVID-19 pandemic, and the subsequent lockdowns and market closures.

Table 7 Average mean annual income 2021

	Range of Income								
Ward No. MDM	<1000	1000-5000	5000-10000	10000 - 20000	20000 - 50000	50000-100000	>100000	No income	**Total**
3	3	1	0	0	0	0	0	2	6
4	5	7	3	4	4	0	0	5	28
10	5	3	0	0	0	0	0	19	27
11	17	21	9	6	1	2	2	17	75
12	27	8	6	2	0	0	1	16	70
Total	**57**	**40**	**18**	**12**	**5**	**2**	**3**	**59**	**206**
Mean Income	500/-	3,000/-	7,500/-	15,000/-	35,000/-	75,000/-	100,000/-		
Total - family * mean income	28,500/-	120,000/-	135,000/-	180,000/-	175,000/-	150,000/	300,000/-	-	1088500
Average Mean Income	**5,553.57**								

Details of the review findings are shown in Annex 1. In the baseline study, the annual average mean income of the surveyed families was NPR 2,886/-. In the post-project situation, the annual average mean income increased by 2,558/-.

Indicator 2: Number of tree crops planted by the trained beneficiary farmers.

In total, 998 trained farmers were supported with 41,889 tree crop seedlings. All the planted seedlings are growing well. Of the 41,889 seedlings, 251 farmers received 4,767 seedlings from the MD-AFRC, while 747 trained farmers received 37,122 seedlings from the MDM. The seedlings derived from the MD-AFRC are summarised in Table 8.

Table 8 Number of tree seedlings from the MD-AFRC planted by farmers

#	Species of Seedling	Number of Seedlings Distributed
1	Lemon	1,600
2	Apple	258
3	Grape	153
4	Almond	109
5	Dragon fruit(Red)	165
6	Dragon fruit(White)	42
7	Jack Fruit	73
8	Snake plant	5
9	Litchi	193
10	Mango	157
11	Timur (Szechuan pepper)	3
12	Walnut	133
13	Orange	257
14	Junnar	27
15	Avocado	194
16	Kurilo	19
17	Rojmeri	3
18	Peach	10
19	Red Sandalwood	5
20	Aloe Vera	1
21	Pomegranate	5
22	Dhupi (Gold Crest)	10
23	Coffee	521
24	Buddhachitta (Ziziphus Budhensis)	4
25	Guava	3
26	Betel Nut	6
27	Lime	769
28	Nectarine	10
29	Plum Beauty	17
30	Wood(Hussi)	11
31	Plum	4
	Total	**4,767**

Further details are shown in Annex 2.

Output 1 Detailed baseline and feasibility studies completed

Indicator 1: Baseline survey report delivered

The project area baseline survey was completed early in Year 1 of implantation; findings, both quantitative and qualitative data, were documented in the baseline survey report. The report was considered as a milestone.

Indicator 2: Feasibility study on marketable crops delivered

A feasibility study on marketable crops was also carried out in Year 1 of the project, and the project plan adjusted as a result of the findings. The creation of the Organic Villages was in line with the findings of the study.

Output 2 Establishment of the AFRC, outlet centres, and satellite Nurseries completed

Indicator 1: Fully functional AFRC (Year 1) & Outlet Centres (Year 2) in place

a. The MD-AFRC

The MD-AFRC is now well equipped on the necessary land, infrastructure for office, accommodation, kitchen, and training logistics, as well as furniture and other materials and tools, and all necessary structures are in place for running the institution smoothly.

The Centre is institutionally sound with established essential administrative and managerial capabilities and requirements. The institutional capability for sustainability is well developed and has been strengthened over the years. In 2021, the MD-AFRC obtained financial support for the construction of an animal shed from the local government.

The benchmarks for AFRC institutional sustainability are fulfilled as follows:

- registered as an agriculture institution with the local government;
- the Board of Directors is fully functional, and conducts regular meetings;
- the AFRC has properly managed and accounted fixed assets;
- the human resources are capable of properly managing administration and agricultural activities;
- there are strong linkages with the local government, line agencies and like-minded organizations;
- the AFRC and its programmes have a major influence on the local community and Municipality as a whole.

The establishment and operation of the MD-AFRC has motivated local farmers and they have been inspired with technical knowledge in tree-cropping and the introduction of resilient new farming technologies. Local farmers have observed the improved practices and technologies and have replicated on their farms. More importantly, the community have accepted the MD-AFRC as their own property and institution.

b. The Outlet Centres

The 4 operational organic villages and 3 satellite nurseries are producing and supplying seedlings and products to the local community; 3 organic villages and 3 satellite nurseries have been registered with the local government. Production of organic vegetables and healthy disease free seedlings has begun; a summary is provided below, and in Table 9.

Of the vegetables produced in 2020:

49% were consumed by the farming households
51% were sold, generating a collective income of NPR 91,150/-

In 2021:

47% were consumed by the farming households
53% were sold, generating a collective income of NPR 79,925/-.

In total, over the two years since production and sales began, an income of NPR 171,075/- was generated by the local farmers from organic vegetable sales.

Table 9 Organic vegetable production and income generation in 2020 and 2021

#	Organic villages	Production in kg	Household consumption (kg)	Sold (kg)	Income in NPR
1	Organic village in MDM 1, Halde	7,694	3,409	4,285	88,695
2	Organic village in MDM 3, Bayarbot	3,251	1,377	1,874	34,525
3	Organic village in MDM 10	6,239	3,504	2,735	45,505
4	Organic village MDM 3, Hile	264	144	120	2,350
	Total	**17,448**	**8,434 (48%)**	**9,014 (52%)**	**171,075**

See Annex 3 for further details of production, consumption, sales and income.

Production and productivity will be increased sustainably in the future through the use of high-quality organic manure – the farmers are adopting organic farming enthusiastically and have been well trained in the preparation and use of farmyard manure, compost and bio-pesticides. They have begun to sell their produce at a fair price, which will help to uplift the living standards of people in the 4 villages. Ultimately these 4 villages will turn into an organic enterprise, and the outlet centres in the villages will be institutionalized as a collective and sustainable agro-enterprise. The programme had planned to establish and operate the outlet centres in Years 2 and 3 but due to the pandemic and the lockdowns and its effects on project implementation, the outlet centre establishment plan was postponed. Despite this, the organic groups have been motivated to plan their own outlet centres - for example the Halde Organic Farmer Group is planning to establish an outlet at Nagarkot, one of the main tourist destinations of the area.
Project staff encouraged the farmers and their households to consume the organic vegetables themselves, and this helped them to change their convictions and perceptions, and to adopt organic agriculture.

Indicator 2: Fully operational satellite nurseries in place
3 satellite nurseries (SLN) are in full operation; all 3 nurseries are well managed by the lead farmers, seedlings and vegetables have been produced for sale, and incomes have been generated.

The SLN at Nayagaune, Ward no. 3**:** the lead farmer has earned NPR 69,000/- in the 3-year project period from the sale of 8,567 seedlings and 0.825 tonnes of vegetables.
The SLN at Chendeni, MDM-10: an income of NPR 118,000/- has been generated by the lead farmer from the sale of 9,411 seedlings and 0.92 tonnes of vegetables.
SLN at Jyamdi, MDM 12: seedling production has just begun, but to date an income of NPR 19,500 has already been generated.

All nurseries have minimal nursery operating costs (eg. seeds,tools, and local materials) which are covered by the generated income. All SLNs are well endowed with the necessary land and basic structures (eg. agri-materials, polyhouses, and water collection systems). All are progressing well toward sustainable operation.

Output 3: Quality training of farmers in agro forestry and agri-options delivered

Indicator 1: Number of farmers trained

Following the multiple trainings, the farmers are now capable on agroforestry principles, and climate smart agriculture practices with knowledge on tree diversification for the sustenance of their livelihoods. In total, 1,836 local farmers are skilled in multiple agri-options through 82 different training programmes.

There was an excellent gender balance. 56% of the farmers trained were female and 44% male, a very satisfactory involvement of women in the capacity building as shown in Table 10 below.

Table 10 Summary of trained farmers

#	Particulars	Number of trainings	Male	Female	Total
1	Trained farmers in 2019	11	75	190	265
2	Trained farmers in 2020	32	310	358	668
3	Trained farmers in 2021	39	425	478	903
	Total	**82**	**810**	**1,026**	**1,836**
	%		**44**	**56**	

403 local farmers attended more than one training (124 thrice and 279 twice) and 906 attended one training as shown in Table 11 below.

Table 11 Frequency of participation

#	Particulars	Number of trainees	Number of trainees on the basis of attendances	Remarks
1	Participants attending 1 training	906	906	
2	Participants attending 2 trainings	279	558	279p*2t = 558
3	Participants attending 3 trainings	124	372	124p*3t = 372
	Total	**1,309**	**1,836**	

The details of the trainees are provided in Annex 4.

Indicator 2: Number of monthly trainings provided at the AFRC

Despite the pandemic and the lockdowns, it was possible to organize 13 monthly trainings at the MD-AFRC for a total of 169 farmers to deliver technical knowledge on improved farming techniques to our local farmers, who were taught to carry out collective and collaborative action to address environmental and agricultural problems, and to understand the opportunities presented by agroforestry, and multi-layer tree crop farming. During these trainings, they also undertook day to day practical farm management activities, and learnt about the risks and threats posed by climate change, especially in relation to diversified production of tree crops, vegetables and fruits.

Indicator 3: Number of farmers with organic certification

17 local farmers with the necessary skills, aptitude and interest are in the process of obtaining organic certification, through the strict national regulations. The fields of all 17 farmers were inspected to ensure they were following the correct procedures. After a second inspection in 2022 and fulfilment of the stringent criteria for organic certification, they will be officially awarded their certificates.

Output 4: Engagement and coaching of Secondary School students delivered

Indicator 1: Number of students coached at 5 secondary schools

524 school children (346 female - 66%, and 178 male - 34%) from 7 secondary schools have been educated on climate change and its potential effects, as well as adaptation measures in line with improved agricultural practices – see Table 12.

Table 12 Summary of educated school children

#	Particulars	Number of trainings	Male	Female	Total
1	Coached students in 2019	10	96	152	248
2	Coached students in 2020	1	5	11	16
3	Coached students in 2021	9	77	183	260
	Total	**20**	**178**	**346**	**524**
	%		**34**	**66**	

Further details are provided in Annex 5.

Indicator 2: Number of school gardens established and supported

Model school agroforestry gardens have been established at 5 secondary schools (Chendeni, Uma Saha, Bagdevi, Dedithumka and Dwarpaleshwor); all schools were provided with the necessary funds for purchase of seedlings, tools, maintenance and management. The current condition of these gardens is good, and the gardens survived the lockdown periods, when schools were closed, by MD-AFRC staff monitoring their condition. 67 plants (fruits and ornamental plants) were planted at the 5 schools – AFRC staff replace the few seedlings that died, and current condition of all plants is good.

Output 5: Awareness on environmental issues and agroforestry options raised

Indicator 1: Number of farmers adopting agro forestry and organic agriculture after 3 years

A total of 929 local farmers were skilled on agroforestry and organic agriculture, 85% of whom (790 farmers) have applied the acquired technical knowledge on their farms. Of these, 323 trained farmers are now cultivating tree crops on their farms.

Table 13 Number of farmers adopting agroforestry and organic agriculture

#	Particulars	Number of farmers	%
1	Number of farmers trained on agro forestry and organic agriculture	929	
2	Number of trained farmers applying acquired technical knowledge	790	85
3	Number of trained farmers cultivating tree crops applying acquired technical knowledge	323	35

A more detailed record of these farmers is provided in Annex 6.

Indicator 2: Number of programmes broadcast on local radio to raise awareness on climate change risks and mitigation measures

59 episodes were produced and initially broadcast on Radio Namobuddha, Dhulikhel. These episodes were broadcast 168 times through 3 local radio stations as shown in Table 14.

Table 14: Number of radio programmes broadcast

Particulars	Number of programmes broadcast		
	Radio Namobuddha	Radio Melamchi	Radio Sunkoshi
Number of Radio programmes produced	59		
Number of produced radio programmes broadcast	62	62	44
One time (56 episodes x1)	56	56	38
Two times (3 episodes x 2)	6	6	6
Total number of radio episodes broadcast			**168**

Radio Namobuddha were excellent partners in producing the programmes and responsible for broadcasting them; the programmes were provided to 2 other radio stations, as airing the episodes three times in a fortnight benefited a much wider community than solely the MD Municipality.

A synopsis of the radio episodes is provided in Annex 7.

8. Do you expect to meet your outcome targets at the end of the project?

The outcome targets of the project have been accomplished despite the COVD-19 pandemic, lockdowns, and heavy rainfalls and floods which restricted access.

The local government is very supportive of the project programmes, is promoting agroforestry as a best livelihood option in MDM, and local level policies and programmes have been influenced by the success of the project; they have taken on board numerous interventions and approaches promoted by the project staff. The local government has also started to allocate resources for seedlings (in considerable numbers), agri-materials and other agri-inputs to the local famers for tree crop promotion, and has provided matching funds for infrastructure development at the 3 satellite nurseries.

Many of the lead farmers in MDM have adopted techniques introduced by the project, and the perception of organic farming and behavioral practices on the farm have been changed. The lead framers have adopted organic production practices and a new consumption culture, and their new focus now sees tree cropping as essential for long-term income generating opportunities.

In cooperation with the local government, the extension of the AFRC and the transformation of the established satellite nurseries into AFRCs is now an agreed plan for the future.

Responses from trained and resourced farmers clearly indicate a more optimistic outlook in terms of improving their livelihoods. The promotion of alternative agroforestry systems through significant training and resources has benefited the farmers with enhanced opportunities of gainful employment which in turn enables them to build resilience and adapt more permanently to climate change.

Furthermore, in response to COVID-19, the project created opportunities for entrepreneurship and local employment for returning migrants by building on agricultural training for commercial farming as livelihood options. Likewise, there has been increased awareness on biological solutions to reduce injudicious use of commercial pesticides and fertilizers, especially in the organic villages. In general, local communities and some students at the target schools are now more aware of climate change risks and environmental problems.

The MD-AFRC is institutionalized and now performs as an effective training and resource centre to ensure high levels of farmer engagement in improved farming systems and adopting new more sustainable practices and technologies, which are more appropriate to combatting climate change and environmental issues, as well as strengthening livelihoods and resilience.

9. What have you learnt this year and how might this change how you approach the project in the future? If you have undertaken any evaluations or learning exercises relating to this project, please describe them here.

A. Learnings

a) <u>Successful and tested models are always replicable:</u> the project was developed on the foundation of the successful AFRC project in Solukhumbu, supported by The Glacier Trust, and is now a flagship project of EcoHimal Nepal and The Glacier Trust. The concept has now been replicated in different parts of Nepal – e.g. with funds from two different donors, the Swiss Foundation and Nepal Hilfebonn (German), 7 new AFRCs are now being established in Khotang (4), Solukhumbu (2) and Sindhupalchowk (1) Districts. In total, 8 AFRCs are operating or being developed in 4 districts on the basis of the success in Solukhumbu.

b) <u>Proposed projects must understand the local needs and aspirations:</u> the project was designed on the basis of local needs, and it is essential that it is well supported and owned by the local communities and local government. The

promoted technologies must also be appropriate to the local ecosystems, cultures and traditions. The local people must be fully satisfied with the proposed modalities and technologies to ensure a successful outcome.

c) Innovative technology feasible to local context must be adoptable: innovative and community-led interventions need to attract the local farmers to application and adaptation. For example, the bio-intensive plantation techniques introduced by the project in the local community have been passionately adopted by many farmers, and even the local government has requested to share the bio-intensive plantation technologies to all lead farmers, agri-technicians and stakeholders throughout the municipality.

d) The production and resilience depend upon the quality of seeds and seedlings**:** it is very important to promote and distribute quality seedlings from reliable nurseries despite their relatively higher cost to ensure a better survival rate and longer term result. The local government appreciated the strategies, and shared their failure in tree crop promotion:-

"We distributed seedlings for years, but the survival of seedlings and output is invisible, but this project distributed a limited number of quality tree crop seedlings, properly and thoroughly trained the local farmers how to plant them through applying the bio-intensive plantation techniques, and consequently the result is evident". The Mayor of MDM, Mr. Tok Bahadur Waiba.

e) "All of sudden change" is not possible but influencing the farmers with the right technologies and support is not impossible: the approach of using a good model to disseminate new ideas and technologies is the right strategy to convince local communities that adoption is not a risk. The use and over-use of commercial pesticides and chemical fertilizers in the lower landscapes of Mandan Deupur Municipality is commonplace, and it is difficult to change people's deep-rooted behavioural practices and perceptions with one or two interventions. In the project area, despite knowing of some of the impacts of using these often dangerous pesticides and fertilizers on the soil, environment and human health, they still use pesticides and chemical fertilizers on their farms.
The project has developed organic villages to promote the organic farming culture, and shared the success of organic production and the resulting income generation of these villages with the farmers of the lower landscapes. This dissemination of the success has motivated some famers in the lower areas to follow the organic culture as an alternative solution to the endless spraying of chemicals, and they have begun to produce vegetables for self-consumption.

f) Personal realization is important to begin social change: the project encouraged those farmers who adopted organic practices to first consume the vegetables themselves, and this helped them to change perceptions and convictions. The local farmers, their neighbours and friends are now realizing the difference between chemical-fed vegetables and their own organic products which leads to growing momentum in the organic movement.

g) Out-migration of youths can be reduced if resources and technical knowledge for alternative livelihood options are promoted: the project skilled, resourced and

motivated more than 25 youths and 15 migrant returnees to adopt multi-layer cropping; as a result, they have now adopted farming as their major occupation and are satisfied with the income generation.

Success of a Middle East Returnee**:** *"I was interested in farming but was depressed with the results. The production was not enough to cover the investment. I went for Middle East for employment but could not be successful there so I returned back home and was in search for a way forward in agriculture. Fortunately, I got training at the MD-AFRC on climate resilient bio-intensive agricultural techniques, and organic vegetable farming. In line with my interest, the project provided me with the pathway for which I had looked for so long, and I was able to move ahead utilizing the limited resources that I had. At present, I am generating income from vegetable and spice production and sale, and it is enough to feed my family".* Hari Prasad Bajgain

B. Sustainability of Changes and Outputs in the Future

a) The MD-AFRC is well equipped and capable of providing continued technical guidance and training to the farmers in multi-layer cropping and organic farming.
b) The local government has enthusiastically adopted the approach and modalities of the project as best practices for the Municipality.
c) The Agriculture Section of the local government is also very positive toward organic agriculture, and commits to scaling up the approach of organic villages in other areas of MDM.
d) Three satellite nurseries are in place to provide tree crop seedlings available throughout the Municipality.
e) The second phase of the MD-AFRC project has been approved by The Glacier Trust, with funding secured from the Magaret Hayman Charitable Trust. This ensures a further 3 years of support to follow up on the current achievements, and continued guidance and monitoring of progress in all aspects of the project.

C. Evaluations

a) A request for a final evaluation by the Social Welfare Council (SWC) has been submitted. The SWC will develop a Terms of Reference and, in early 2022, carry out a final field evaluation. The findings and recommendations will be shared among stakeholders and concerned line agencies, and taken on board during the implementation of Phase 2.
b) The Glacier Trust (TGT) will also carry out an external monitoring of the project in 2022 if national and international travel restrictions allow.

10. What has worked less well than you had hoped and why?

As mentioned in Section 6, three aspects of the project have been delayed: (i) the establishment of the outlet centres, (ii) the holding of the regular monthly trainings, and (iii) the organic certification process – they remain behind what was envisaged in the original plan, all due to the pandemic and subsequent lockdowns, and the associated but necessary rules on public gatherings. The COVID-19 first wave disturbed the activities for 6 months from March 2020, and the second wave in 2021 delayed the works for a further 4 months. The pandemic therefore affected the project in the middle of project implementation which was a significant period for output interventions.

11. During the project were there any issues relating to safeguarding, fraud or corruption that you became aware of? Include all relating to your organisation, your partners and any institutions you work with (e.g. schools).

No such issues occurred during project implementation, either at community or organizational level.

12. We particularly welcome photos, video and audio material that illustrates the work we have supported. If you have any such information please attach it to your email with this report or provide links to where we might view the material (eg. on your website or YouTube).

a. Photos: please see the separate archive.
b. Archive of radio episodes: please see Annex 7 and a large separate archive is available on request.
c. News coverage and social media videos are provided in Annex 8.
d. Preparation of a video documentary recording project results and successes is on-going. It will be shared to the donor organization on completion in 2022.

PLANS FOR THE NEXT YEAR OF YOUR PROJECT

13. Are you planning to make any changes to your project covered by our grant? If so, please tell us what these changes are and why you need to make them.

The Glacier Trust has secured a three-year grant from the Margaret Hayman Charitable Trust to support an extension of the work of MD-AFRC. We are seeking additional funding to deepen this support. A separate proposal is in development and will be submitted to Marr Munning Trust in January 2022.

14. Were there any risks to the project or its implementation that you would like to flag at this point?

- The COVID-19 pandemic (1st wave in 2020 and 2nd wave in 2021), the subsequent nationwide lockdowns and associated restrictions hampered the project a lot and provided new challenges during the implementation period.
- Heavy rains and floods damaged agricultural production and infrastructure at the MDM in both 2021 and 2022. Likewise, in 2020, a flood seriously damaged the nurseries and demonstration sites at the MD-AFRC, and a very high wind event on 27-05-2020 destroyed the greenhouses at the AFRC and the satellite nurseries. Rapid repair was undertaken, which cost money and used up much staff time and energy.
- The lead farmers are no doubt motivated and have adopted organic farming enthusiastically – however, if there is any gap in guidance, support, encouragement and monitoring in the coming years, there is a fear that some will revert to the deep rooted pesticide and commercial fertilizer culture.

ABOUT US:

15. We welcome your comments about your dealings with The Marr-Munning Trust. In particular, we would like to know if you think there are ways we could improve the service we offer organisations like yours.
The Marr Munning Trust has been very supportive throughout the three years of this project. Thank you for responding promptly to all emails and enquiries. This form is a little bit difficult to use, especially when trying to insert tables. We wondered if it would be possible to remove the text boxes?

DECLARATION:
I confirm that all the information in this report is true and correct and that I am authorised to submit this report on behalf of my organisation:

16. Name of Person Completing this Form:	Dr. Morgan Phillips
17. Job Title of Person Completing this Form:	TGT Co-Director UK
18. Date:	06/01/2022