



Namaskar, Good Morning



Climate Change Adaptation in Nepal

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COVID-19 and Nepal

- Total positive cases: 271,431
- Recovered: 267,065
- Death: 2,031
- Confirmed cases in isolation: 2,335
- Nepal launches nationwide COVID-19 vaccination drive with health workers and frontline workers
- Launched a nationwide COVID-19 vaccination drive with one million doses of vaccine provided by India under grant assistance with its 'Neighbourhood First' policy
- Till today, 145,844 health workers and frontline workers have been vaccinated

Climate change in Nepal

Glacier retreat
Glacial Lake Outburst Floods
Erratic monsoon
Drought
Flash flooding
Landslides
Insect pests
Water shortages
Biodiversity loss



Remembering a great person, the initiator and influencer of the climate change adaptation in Nepal, the founder of The Glacier Trust

Late Mr. Robin Garton

(1946-2015)



History: The Glacier Trust and EcoHimal Nepal

- Meeting at Deusa AFRC premises just before construction of main building



Accomplished Projects: TGT & EcoHimal

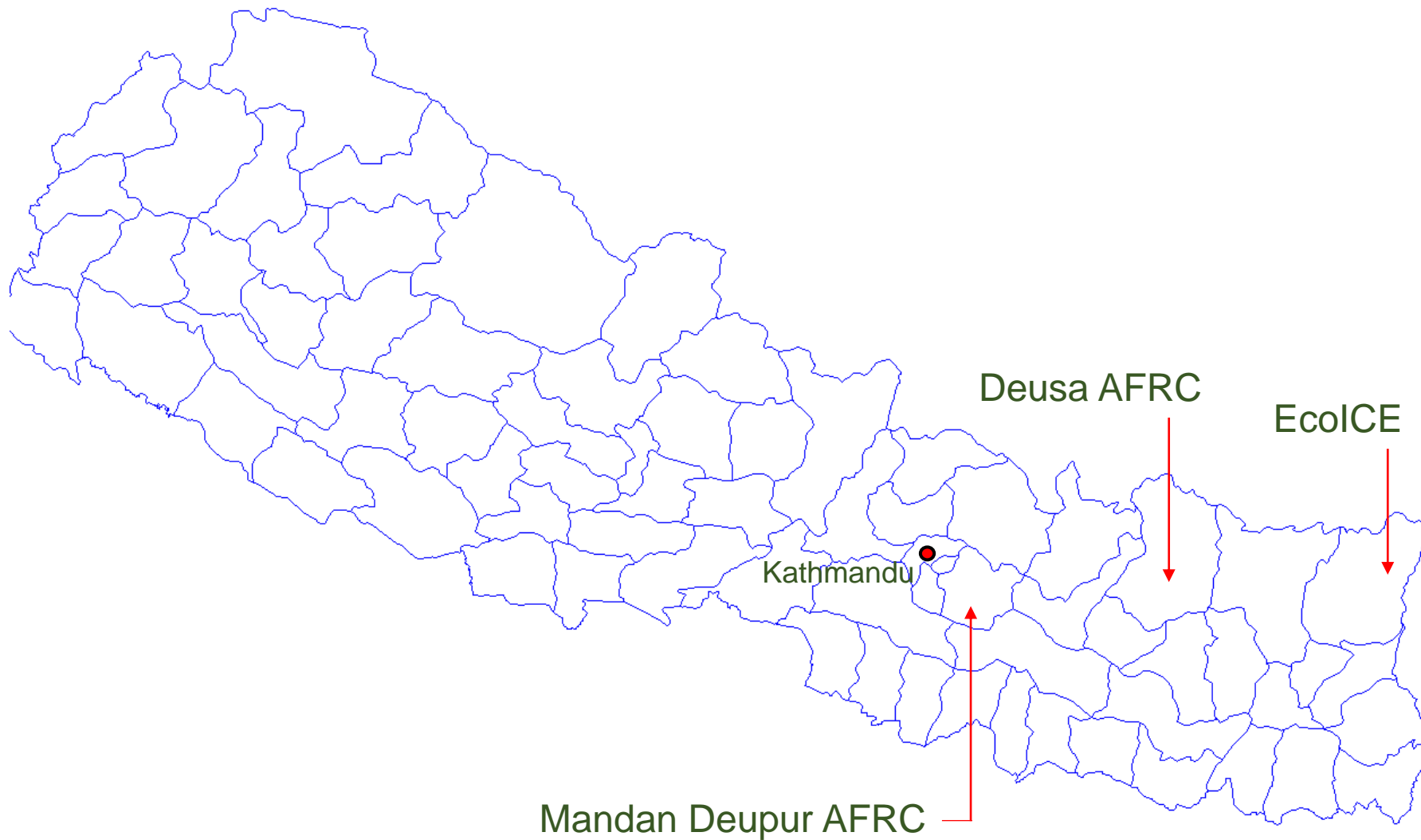
- Implemented **Forest Conservation and Ventilated Stove Programme** from 2010 for 3 years – installed **361 mud and metallic ICSs**, benefited **87 households with cash crops production**, aware **7 CFUGs** on forest conservation and indigenous vegetables and herbs conservation (Pawai and Bakachol)
- **Continued stove programme** (2013-15) in Deusa and Waku village-**987 full/half metallic ICSs** promoted and installed
- **Post-Earthquake Relief and Recovery Project** (2015-2016) in Solukhumbu- provided relief, shelter, livelihood package to **481 households**
- An Environment Conservation Pilot Project (2016-2017)- **Improved Cooking Stove (ICS)** in Bhotkhola Rural Municipality, Sankhuwasava – 30 ICSs piloted.
- **Capacity building of coffee producers on coffee production and processing (2019)** in Aiselukharka Rural Municipality, Khotang

Climate Change Adaptation TGT and EcoHimal – Current projects

1. Deusa AFRC - Solukhumbu
January 2013 to June 2023

2. Mandan Deupur AFRC - Kavrepalchok
December 2018 to December 2024

**3. Environment Conservation through Indigenous
Community Empowerment (EcoICE) - Sankhuwashabha**
Sep 2019 to February 2021

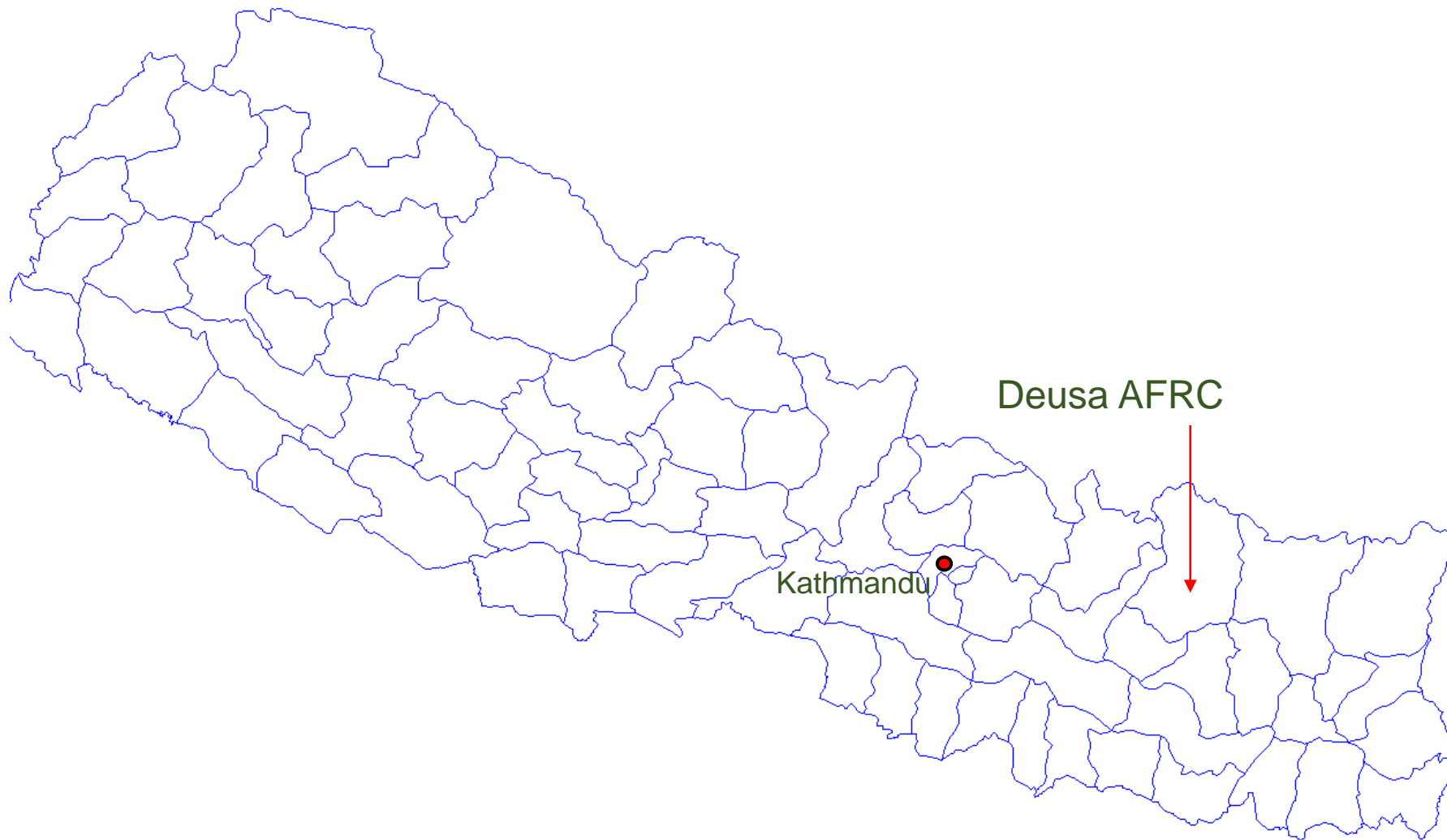


Implementation principles

- Adaptation:
 - **Physical changes** through structures (nursery, green house, solar energy, rainwater harvest, ecofriendly buildings, plantation etc.)
 - **Behavioral changes** through capacity building, awareness raising, increase in income.
- Small scale, tested, piloted, upscale and replication
- Focus on the demand and need of the community (**bottom-up approach**)
- Empower local staff and lead personality of the community
- Empower women, young people and marginalized peoples
- Focus on the sustainability of the project
- Low overhead, cost effective strategies
- Use, management and conservation of local resources (NRM)
- All development activities are focused on climate change adaptation
- Consideration of livelihood focusing socio-culture and environment factor

Project 1: Deusa AFRC - Solukhumbu





Deusa AFRC

Kathmandu

Project 1: Deusa AFRC - Solukhumbu

Overall Goal:
Sustainable rural livelihoods through the promotion of Agroforestry, tree cropping and market linkage

Specific Objectives:

- Self sufficient Deusa AFRC
- Aware local population on agro-forestry to adopt climate change
- Address food security, deforestation and landslides
- Create self-employment opportunities

Deusa AFRC impacts

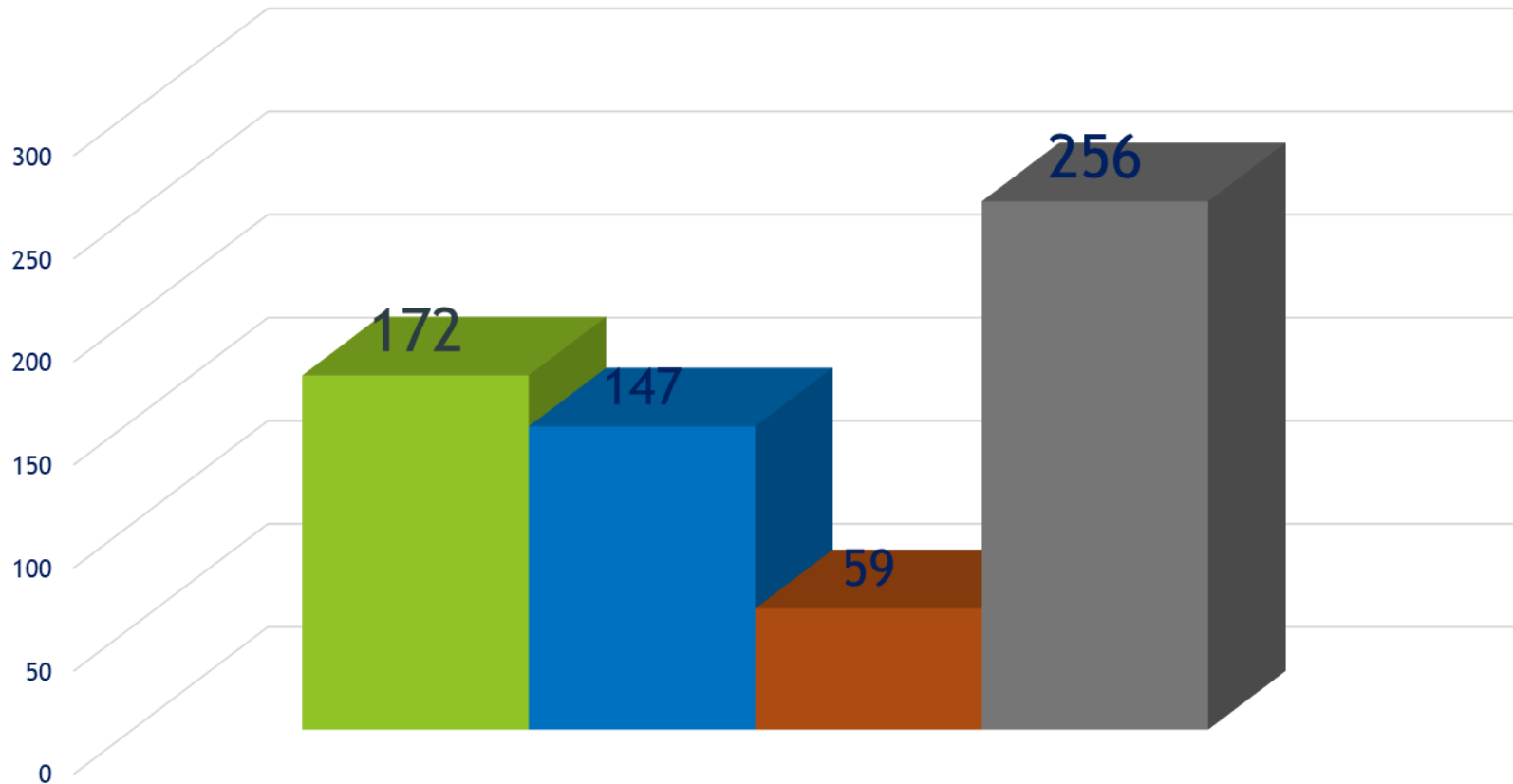
- Increased income of local farmers: coffee, fruits, vegetables (6,000 to 1.1 million)
- Tree line shifting up: orange, coffee, Pican nut etc.
- Green house cultivation replicated for non-seasonal vegetable production
- Rainwater harvest (plastic pond) adopted by the local farmers
- Increase in fodder and forage at local level reducing forest load
- Maximize the land use (due to layer cropping)
- Local people organized and established coffee orchard with the support from local government.
- Decreasing problem of pest and diseases
- Replication of the project in different places
- Microclimate adaptation: cultivation of multi-purpose forages(Broom grass) in marginal land supported in mitigation of soil erosion

Targeted Vs Achieved

#	Targeted	Achieved
1	450 trained farmers apply acquired technical knowledge and skills in tree crop production	<ul style="list-style-type: none">634 local farmers educated and applying tree crops plantation techniques (bio-intensive, multi-layer inter cropping and on-farm tree diversification)



Trained famers in tree crops applying skills and knoweldge



■ Bio-Intensive Plantation Techniques

■ Organic Farming

■ Tree crops nursery management

■ Multilayer farming techniques

#	Targeted	Achieved
2	40,000 tree crop seedlings planted	85,010 seedlings planted (high value tree crops and fodders)



#	Targeted	Achieved
3	Established 7 satellite nurseries (SLNs)	<ul style="list-style-type: none"> Established 7 satellite nurseries
	All nurseries will have land, green houses, plastic pond	<p>Each nursery has 1 green house and 1 plastic pond Land: in ropani (1 ropani=508 m2)</p> <p>Lokhim SLN: 5 ropani Jubu SLN: 7 ropani Kangel SLN: 3 ropani Mugli SLN: 4.5 ropani Panchan SLN: 3 ropani Deusa SLN (ward 7): 5 ropani Nele SLN: 3 ropani (new)</p>
	All nurseries generated income	<p>Annual income (2020)</p> <p>Lokhim SLN: NPR 63,800.00 Jubu SLN: NPR 11,800.00 Kangel SLN: NPR 23,100.00 Mugli SLN: NPR 18,500.00 Panchan SLN: NPR 41,300.00 Deusa SLN (ward 7): NPR 8,500.00 Nele SLN: (Just established)</p>

#	Targeted	Achieved
4	<p>Self-sustained Deusa AFRC</p> <p>Physically adequate, resourceful:</p>	<p>Self-Sustained physically with;</p> <p><u>a. Fixed Assets:</u></p> <p>Land: 6 ropani own and 60 ropani in lease</p> <p>Facilities: 3 buildings: 9 rooms with 30 person occupancy, Kitchen, dining hall, training hall, 2 separate store rooms, 2 toilets, 1 bathroom with hot shower facilities, a 1 KVA generator, 160 watt solar system, a set of computer, printer, scanner, multimedia projector and Camera.</p> <p>Furniture and utensils: Full furnish and sufficient kitchen utensils</p> <p>Agriculture tools: adequate with agri-products processing machines (18 pulping machines, 1 spice grander, 2 mini tractor)</p> <p><u>b. Structures</u></p> <p>Green houses: 2 high-tech and 3 normal</p> <p>Plastic ponds: 4</p> <p>Nurseries: 15</p> <p>Demonstration sites: 3</p>
	<p>Financially</p> <p>Annual target 2020:</p> <p>Reduced loss to NPR 398, 112.50</p>	<p>Surplus income 2020 NPR 126,976.29 surplus income</p>

#	Targeted	Achieved
	<p>Self-sustained DAFRC Institutionally :</p>	<ul style="list-style-type: none"> Established sound administration; all 11 Board of Directors are experienced and motivated Continued by founder members as board of directors In average DAFRC serving 4,205 local farmers annually DAFRC is considered as local implementing partner by local government In 2020, NPR 10,23,680.00 grant received from local government for different projects
6	<p>1 cooperative established and 40% of the trained farmers involved as members of cooperative</p>	<ul style="list-style-type: none"> A cooperative "Sustainable Organic Coffee, Orange, and Fruits Cooperative; established 10% (63) of trained local farmers involved as member; Revolving fund of NPR 2,72,500.00 collected.



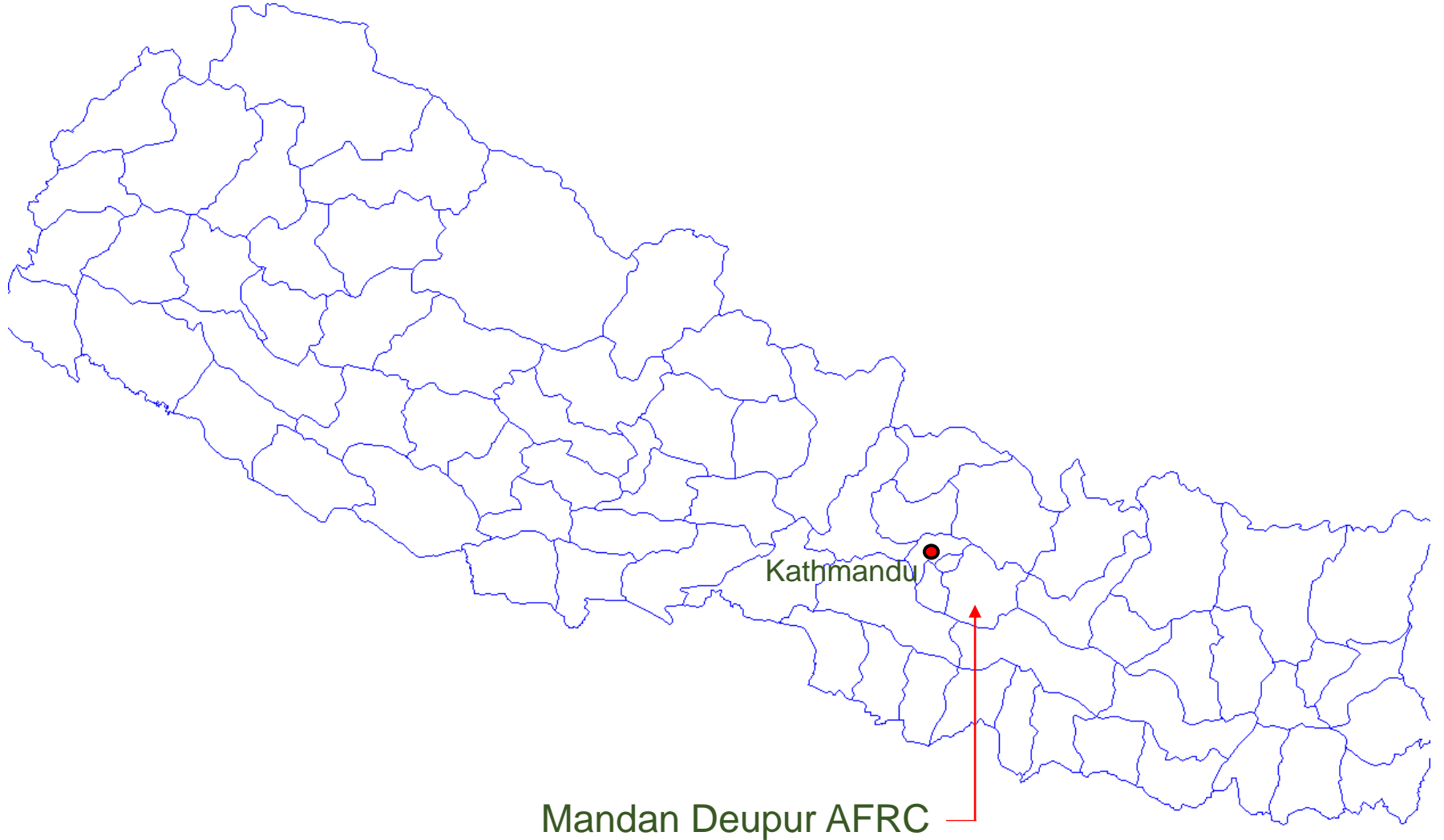
#	Targeted	Achieved
5	Introduced appropriate most profitable high value tree crops	<ul style="list-style-type: none">○ Introduced 17 varieties 23,122 of high value tree crops○ 430 seedlings of hazelnuts plantation is under demonstration○ Farmers are adopted layer cropping (banana, coffee, orange, zinger, turmeric, mustard etc.)○ Happy farmers: Fruiting started from last year (apple, peach, nectarine, almond, lemon, etc.○ In average 1500 kg coffee is collected, sent market



7	Targeted	Achieved
7	Organic certification of 20 lead farmers' production	<ul style="list-style-type: none"> ○ 20 coffee lead farmers' certified; annual income 1,000 to 150,000
8	50,000 seedlings of fodders and forages planted in marginal land	<ul style="list-style-type: none"> ○ 70,321 seedlings planted <p>Deusa village is green in comparison to the neighboring villages</p>
9	At least DAFRC model is replicated in other rural municipalities	<p>DAFRC model is replicated in;</p> <ul style="list-style-type: none"> ❖ Kavreplanchowk, MDAFRC ❖ Mahakulung Rural Municipality, 2 AFRCs; ❖ Khotang, 4 AFRCs is under plan ❖ Remote village is planning in Jaleshowari Khotang in the near future. Committee formed, Land purchased and 10 farmers trained by DAFRC. <p>Impact:</p> <p>Thulung Dudhkoshi Rural Municipality adopted climate adaptation model of EcoHimal/TGT. Upon the request of TDRM chairperson an agriculture draft plan prepared by EcoHimal and presented by mayor in Rural Municipal annual planning meeting and has incorporated in annual budget and plan.</p>

Project 2: Mandan Deupur AFRC

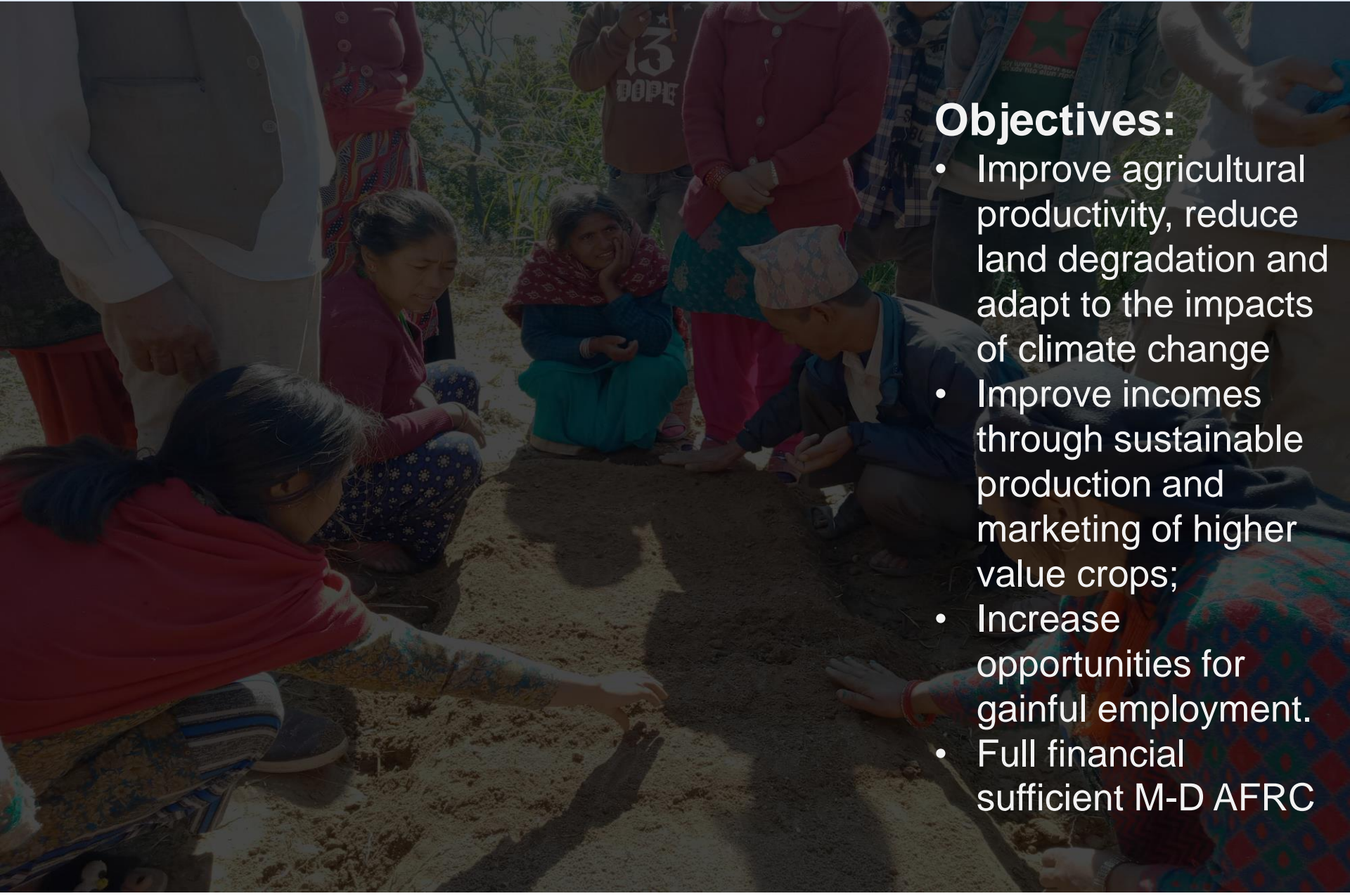




Kathmandu

Mandan Deupur AFRC

Project 2: Mandan Deupur AFRC



Objectives:

- Improve agricultural productivity, reduce land degradation and adapt to the impacts of climate change
- Improve incomes through sustainable production and marketing of higher value crops;
- Increase opportunities for gainful employment.
- Full financial sufficient M-D AFRC

Mandan Deupur AFRC - Impacts

- Demand of satellite nursery extension increasing (many requests have been received)
- Model Organic village concept introduced (to cope with the conflict of commercial farmers)
- Local government influenced by the project activities (60/40 investment ratio proposal for project)
- Interest of people on tree crop increased (formally vegetable)
- Learning is shared to wider public through radio program
- Bio-intensive technique on plantation widely adopted

Targeted Vs Achieved

#	Targeted	Achieved
1	Local Government documents change in regulations and provides incentives to farmers to adopt agro forestry	<p>Local government has included agro-forestry in its annual programs and plan (page number 8 mentions);</p> <ul style="list-style-type: none">planned to promote agriculture commercialization and diversification towards tree cropping;planned to promote productive agriculture to generate local employment and income;planned to initiate student focused practical program – secondary technical school being influenced by our agro-forestry school garden initiative



#	Targeted	Achieved
2	Additional 8% increase in income of trained beneficiary farmers Baseline income: NPR 2,886.00	Current income: NPR 3,090.00 Increased by 7.06%
3	20,000 tree crops seedlings planted Number of existing tree crops (baseline)= 393	<ul style="list-style-type: none"> Planted 22,375 seedlings by 442 households



#	Targeted	Achieved
4	<p>1 Fully functional AFRC in place</p> <p>A business plan is at place</p> <p>Provide services to at least 2,000 local people</p>	<p>Fully functional MD-AFRC is in place with;</p> <ul style="list-style-type: none"> • 10 Ropani land • A pre-fabricated building comprising training hall, office and accommodation facilities • adequate furniture, utensils and logistics • 19 demonstration plots • 4 nurseries of tree crops • Capable Board of Directors for sound administration and management • Organized 5 periodic meetings in 2020 by the Board of Directors <p>A business plan for financial sustainability is at place</p> <p>Provided services (seeds, seedlings and trainings) to 876 local population</p>

#	Targeted	Achieved
5	At least 200 local famers adopt organic agriculture after 3 years	<ul style="list-style-type: none">Established 3 organic villages;Each organic village has management committee;74 local farmers involved as promoters of organic production100% local farmers of 3 organic villages have been trained on organic culture

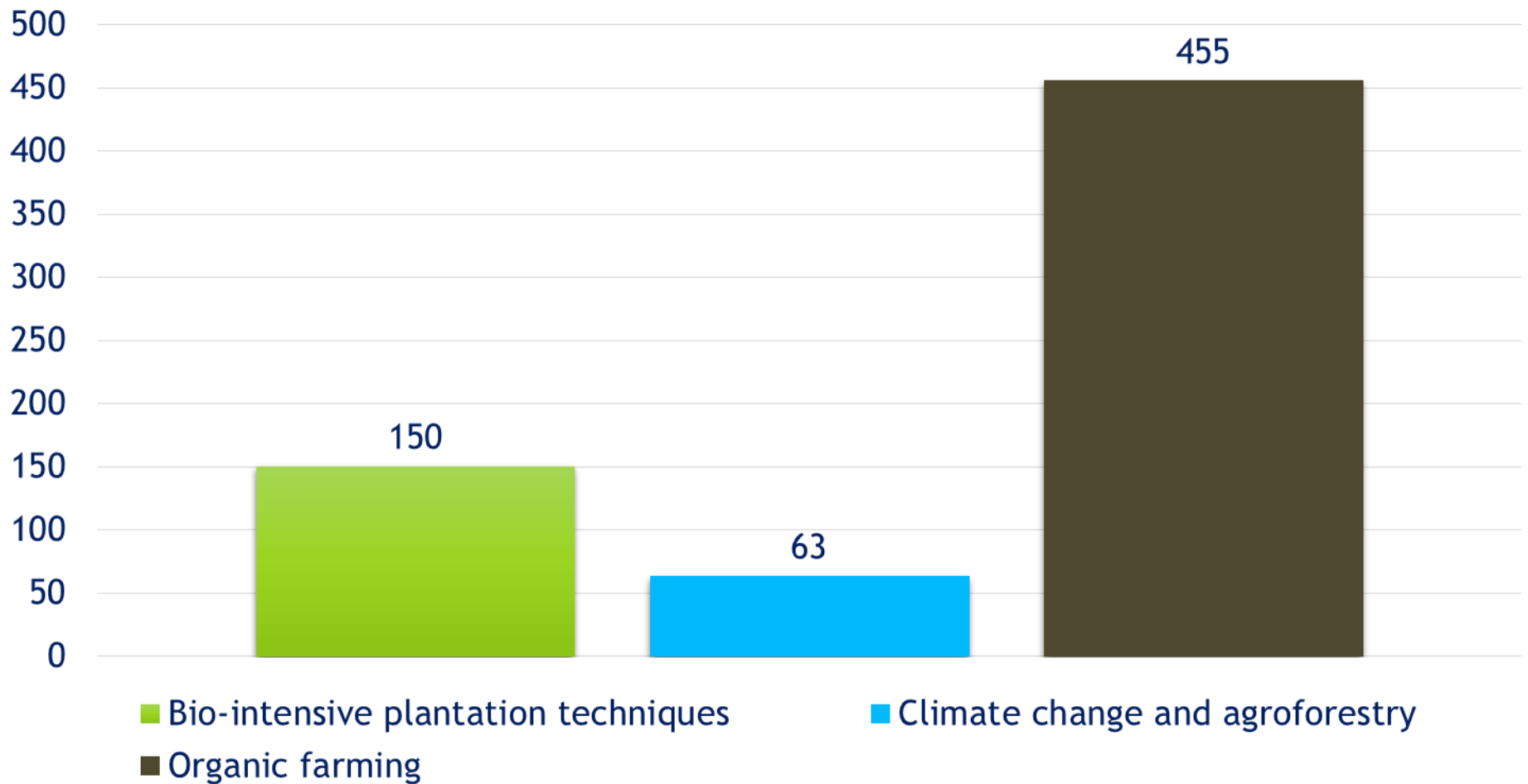


#	Targeted	Achieved
6	<ul style="list-style-type: none">Fully operational 2 satellite nurseries in place At least 1000 local people will be beneficiated with services in 3 years	<ul style="list-style-type: none">3 satellite nurseries are in full operation;All nurseries are producing seedlings and generating income from sale; 241 local people benefited with services (seeds ,seedlings and vegetables) from 3 nurseries



#	Targeted	Achieved
7	750 local farmers trained in climate smart agriculture (in 2 years of period)	<ul style="list-style-type: none"> 668 local farmers trained

Trained farmers on climate smart agriculture



#	Targeted	Achieved
8	<ul style="list-style-type: none">• 18 monthly trainings provided at AFRC• 600 local farmers trained through monthly trainings	<ul style="list-style-type: none">• 7 monthly trainings (2nd year training fully affected by COVID-19);• 169 local famers trained.



#	Targeted	Achieved
9	10 local farmers with organic certification	<ul style="list-style-type: none">• 17 local farmers trained for organic certification process;• Farmlands of trained farmers inspected;• Maintaining farmers' diaries with regular update, internal control system at farm and proper documentation is on-going



#	Targeted	Achieved
10	600 students coached at 5 secondary schools (in 2 years of	264 students from 7 secondary schools have been educated on climate change, its effects and adaptation measures.



#	Targeted	Achieved
11	3 school gardens established and supported	<ul style="list-style-type: none">Established 3 agro-forestry gardens in 3 secondary schools;Establishing an agro-forestry garden in Dwarpaleshwor Secondary School

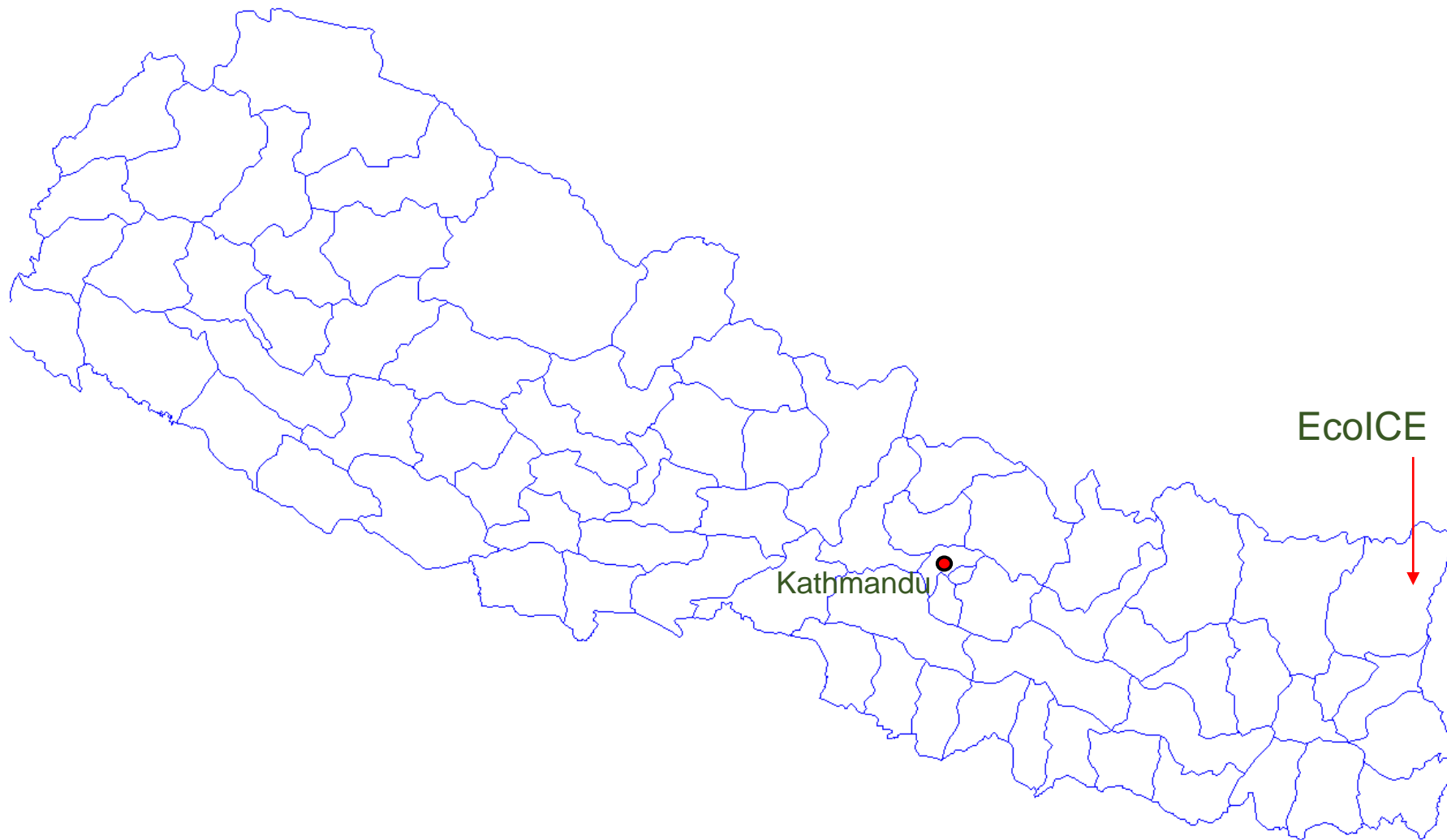


#	Targeted	Achieved
12	32 radio programmes broadcasted to raise awareness on climate change risks and mitigation measures (in period of 2 years)	21 radio programmes produced and broadcasted in cooperation with Radio Namobuddha. The produced 21 episodes were uplinked by more 2 radios – Radio Melamchi and Sindhu. In total, 72 episodes broadcasted.

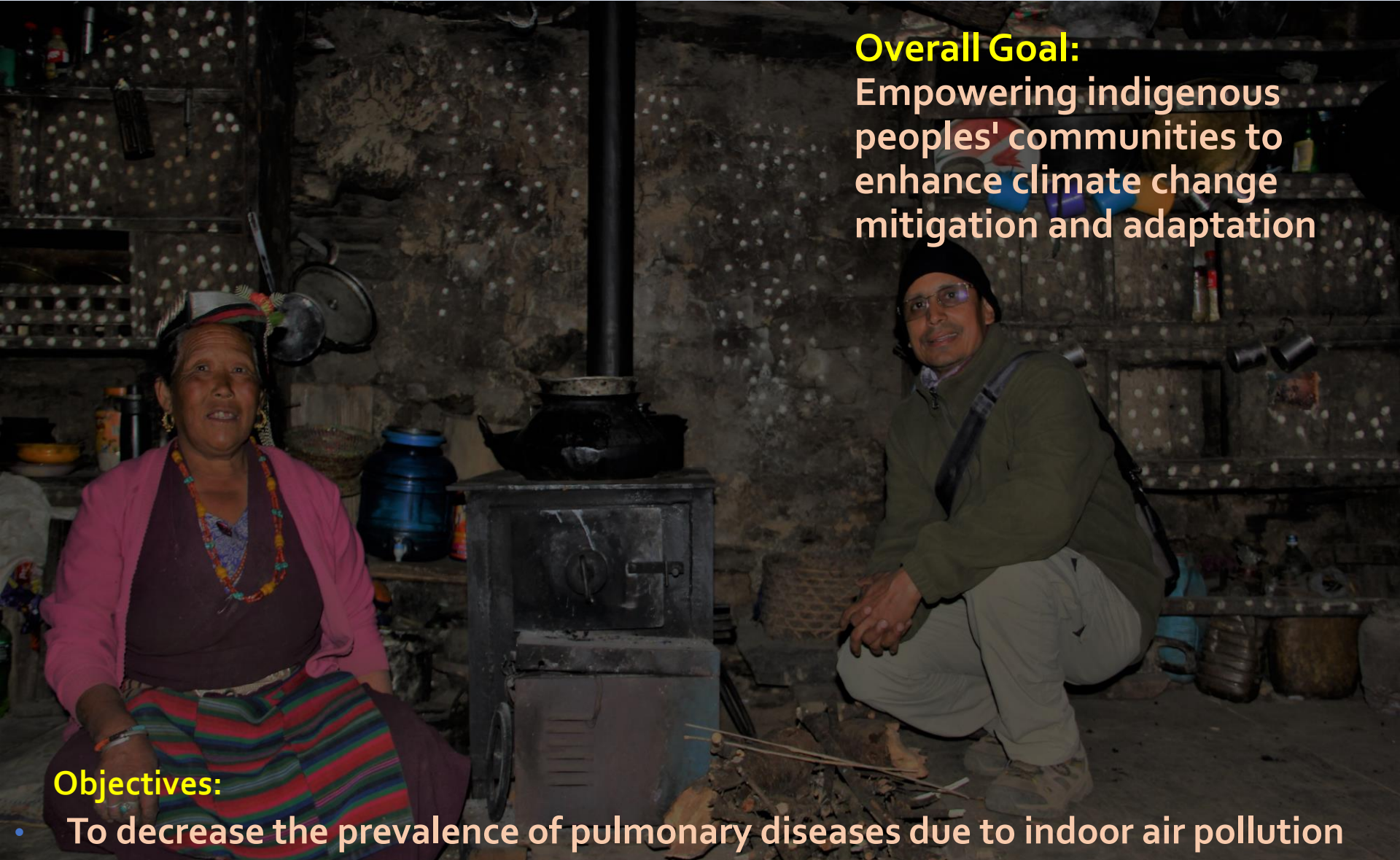


Environment Conservation through Indigenous Community Empowerment





Environment Conservation through Indigenous Community Empowerment



Overall Goal:
Empowering indigenous peoples' communities to enhance climate change mitigation and adaptation

Objectives:

- To decrease the prevalence of pulmonary diseases due to indoor air pollution
- To reduce in firewood consumption supporting forest conservation, and climate change adaptation.

EcoICE – Early impacts

- Reduced firewood consumption
- The happiness of women is unmeasurable - the first response is no eye irritation and clean kitchen
- Improved kitchen hygiene
- Increased demand of ICS (1,600 more stoves are requested)
- Replication of stove in the neighboring village Chamtang with funds from Karma foundation 200 stoves
- Adopted our model (400 this year and 1,200 last year stoves) from the fabrication company.
- Replicated in Solukhumbu by EcoHimal 71 stoves
- ICS replication by EcoHimal Germany in Chumsur Village
- Local government convinced, allocated matching fund and requested to support in declaring smoke free RM

#	Targeted	Achieved
1	All 131 households trained on technique of proper installation and use	<ul style="list-style-type: none">237 people from 124 households + 9 public institutions trained on ICSs installation and use and educated about benefits and its relation to climate change.



#	Targeted	Achieved
2	Installed 131 Metallic Improved Cooking Stoves (ICSs) in Chepuwa and Rukuma Villages	<ul style="list-style-type: none">• 135 ICSs installed (124 in individual houses and 9 in public institutions)• More 16 ICSs are fabricated and will be installed in single women and small family houses• 30 ICSs were installed as models in pilot phase• In total, 181 ICSs supported in Bhotkhola Rural Municipality.



#	Targeted	Achieved
3	All 131 households are educated on firewood consumption, Indoor air pollution (IAP) and its impact on health and livelihood	<ul style="list-style-type: none">• All 147 households/institutions educated• Indoor air pollution (presence of carbon monoxide CM in kitchen) is found remarkably reduced.❖ Average CM level in kitchens using traditional open hearth stoves: 40.94 ppm (parts per million)❖ Average CO level in kitchens after installation and use of ICS: 4.36 ppm (reduce by 36.58 ppm) CHY 670 CO meter



#	Targeted	Achieved
4	<p>Two Local CFUGs are sensitized and empowered for natural resources management (NRM) and Climate change mitigation and adaptation</p>	<ul style="list-style-type: none"> • 105 members of 2 CFUGs have been educated • 2 CFUGs sensitized about Park rules and regulations • 2 CFUGs have access on copies of park rules and regulation



Despite COVID-19 pandemic, The success achieved this year

PROJECTS:

- Success of Master Thesis students for virtual research
- Water plastic pond replicated by local famers in Deusa and Waku
- 94 training manuals on different aspects of farm management, cropping and cultivation prepared, edited and are under designing
- National Agriculture Research Center interested to cooperate for local indigenous seed collection
- INHURED international started partnership with Deusa AFRC

TGT/ECOHIMAL COVID RELIEF:

- Supported vegetable seeds to Thulung Dudhkoshi and Mahakulung Rural Municipality
- Provided Nepali Rupees four hundred thousand for food items transportation to Bhotkhola Rural Municipality
- Mapya Dudhkoshi Rural Municipality was supported with food items support for poor families worth Nepali Rupees two hundred Thousand

Recent updates

1. Deusa AFRC:

- Winter plantation (1,016 high value tree crops)
- Established small tree crop model village in Waku (Nigale and Ridapu)
- 6,000 grafting of tree crops plants
- Organic manure preparation
- Winter care of plant: bordo pest and mixture-Diseases like leaf minor, stem borer, Cankar
- Hazelnut plantation quite satisfactory

2. Mandan Deupur AFRC

- Winter plantation (336 tree crops seedlings)
- 3 satellite nurseries
- Registration of farmers groups and MD-AFRC
- Organic certification
- Organic villages

3. Environment Conservation through indigenous people's empowerment

- Monitoring Stoves installation
- Feedbacks and responses collection from beneficiaries, women groups
- Demand of project extension
- Clean kitchen
- Trainings on environment conservation and park rules and regulations

TGT-EcoHimal Success at a glance

- Receiving VDC and RM fund right from the beginning
- Prime minister Agriculture modernization (Orange Zone) partnership with DAFRC.
- DAFRC Selected as local implementation partner of district fodder and forage production office
- Selected as bee keeping Pocket area local partner of TDRM (200 Local farmers)
- Selected as Mustard production pocket area partner of TDRM (ward 8)
- Selected as Kiwi Zone local partner (seedling production)
- INHURED international support as seedling production
- Replication at MDAFRC (The Marr-Munning Trust)
- MDAFRC policy influence of local government
- Khotang project recently approved as replica
- ICS concept replicated by Karma foundation at neighboring village Chyamtang (200 ICSs)
- Small initiative (small budgeted project) but sustainable and visible outcome/impact

Further plan and appeal

- Dhudhakoshi coffee Corridor_ livelihood improvement through crop diversification
- Hub and spoke_ coffee promotion
- Female lead livelihoods, resilience response to climate change and indirect COVID-19 impact in Solukhumbu district
- Extension of MDAFRC project in a larger scale in Kavre district
- Extension of ICS project (huge demand in Solukhumbu and Sankhuwasbha)
- Replication of the concept in other EcoHimal projects (started in Mahkulung RM and Khotang)
- Support on governance of the accomplished projects (provision of micro scale travel cost is useful)
- Seek small scale support and create more model village on tree cropping and organic vegetable cultivation



Thank you
Any Questions?

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