



Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar

- Output 1.2:** 4,200 hectares of micro-watersheds are protected and rehabilitated through Farmer-Managed Natural Regeneration (FMNR) to increase natural water retention and reduce erosion
- Output 1.3:** Community-based agro-forestry plots are established on 5,100 hectares of private and communal lands to conserve soil and water

Exit Strategy and Sustainability Plan

March 2018

A. Component and Output Description

Under Forestry Sector, Output 1.2 and 1.3 are included which are falling under component 1.

COMPONENT 1: Response to the climate-induced reduction of freshwater supply

The main Outcome of Component 1 is that in 280 villages in Myanmar's Dry Zone, the climate-induced reduction of freshwater supply is countered through increasing water capture, storage, filtering and retention capacity. These physical and ecosystem-based fresh water management measures will be put in place to cover all 280 villages while the specific selection of the measure(s) will be verified with a view to 1) enhance the strategic use of existing physical and natural assets such as forest resources and of available surface and sub-surface water; and 2) ensure ownership by community and sustainability of the adaptive investments. This contextualized approach will not only ensure that AF investments are tailored to the local context, but also provide platforms for community dialogue, consensus building and capacity development on climate-induced water scarcity issues. Compliance with new environmental and social safeguards that are applied by all UNDP-supported adaptation projects will ensure community consent for all investment activities.

Output 1.2. 4,200 hectares of micro-watersheds are protected and rehabilitated through Farmer-Managed Natural Regeneration (FMNR) to increase natural water retention and reduce erosion

Community-based Natural Resource Management (CBNRM) is one of the most important manifestations of true decentralization as it relates to communal control of natural resources. Community-based management of forests and other natural resources plays a crucial role in improving the livelihoods of the poor. The benefits of CBNRM range from job creation to substantial management rights and long-term revenue-generation. One critical CBNRM activity promoted under the proposed AF project is the development of Community Forestry. In line with Community Forestry Instructions (CFI, 1995 and revised CFI , 2016) degraded and remnant natural forests in Myanmar shall be conserved through community-based forestry practices.

Under output 1.2 the overall activities are as follow.

- i. Natural Forest Conservation
- ii. Establishment of Community Forest or afforestation and reforestation
- iii. Public land tree planting
- iv. Micro-watershed Plantation

The revised target under this output is as per below table.

Moreover, capacity building trainings are organized for local people so as to assure better institutional development.

IP	Activities	Prodoc Target - Ha	M&E Target	2016 Achievement	2017 Achievement	2018 Target	3 years Total - Ha
NAG	# Ha of Natural Forest Conservation	2160	3913		2624	404.9	3028.9
NAG	# Ha of Community Forest Establishment	680	1458		843	323.9	1166.9
NAG	# Ha of Micro watersheds plantation		661		325	323.9	648.9
CDA	# Ha of tree planting activities on public land	1360	109	23.4	192	36.2	251.6
Total Target under output 1.2							

- I. Exchange visit (Event)
- II. Township level Public Consultation Workshop
- III. Introductory Agroforestry Training (events)
- IV. Village tract level Agroforestry Workshop
- V. Natural Forest Conservation Training

Output 1.3. Community-based agro-forestry plots are established on 5,100 hectares of private and communal lands to conserve soil and water

Agroforestry is a set of land use practices that involve the deliberate combination of woody perennials including trees, shrubs, palms and bamboos, with agricultural crops and/or animals on the same land management unit. Agroforestry is one of the basic principal biological methods of conservation and assists in maintenance of soil cover. It is designed to create barrier and cover approaches through supplementary and direct uses of trees and shrubs for soil and water conservation. The integration of tree and annual crops provides potential to improve soils through nutrient cycling and supplementing organic matter. The trees, by covering the soil, guard it from direct exposure to the sun and avoid loss of soil moisture in times of drought and during dry spells. This results in the improvement of soil structure and texture, and enhances the natural water retention capacity compared with coarsely and sparsely vegetated soils. In addition, risks of wind- and water-induced soil erosion are greatly reduced.

Under this output, the activities are as follow.

- i. Agro-Forestry (Homestead Gardening)
- ii. Farm boundary tree planting -
- iii. Demonstration Plot (Agro-silviculture: Intercropping and Silvopasture: pasture and animal under tree cover)

iv. Gap Planting

The revised target under this output is as per below table.

IP	Activities	Prodoc Target - Ha	M&E Target	2016 Achievement	2017 Achievement	2018 Target	3 years Total - Ha
NAG	# Ha of homestead gardening/agro-forestry plots established	1700	1000	203	397	400	1000
CDA	# Ha of Farm Boundary plantation	3400	1500	200	510	458.9	1168.9
NAG	# Ha of Demo plot		25		13	12	25
NAG	# Ha of Gap plantation		1458		55	607.3	662.3

Under this output, trainings organized are as follow.

- i. Introductory Agroforestry Training (event)
- ii. Workshop on Agroforestry Village Track Level

Partnership, their role and responsibilities

Dry Zone Greening Department plays both focal department and implementing partner. Seedlings required for tree planting activities are provided by Dry Zone Greening Department. As a government counterpart, Dry Zone Greening Department is steering all project activities by providing necessary expertise, arrangement and advice.

Forest Department and Environmental Conservation Department also advised necessary guideline for plantation activities in term of technical and environmental point of view.

Network Activities Group (NAG), local NGO, acts as implementing partner in tree planting activities especially natural forest conservation, watershed plantation, community forest establishment under output 1.2 and homestead (agroforestry) planting, demonstration plots and gap planting under output 1.3.

Community Development Action (CDAction), local NGO, is responsible for tree planting for public land tree planting under output 1.2 and farm boundary tree planting under output 1.3.

B. Project Inputs and Activities

Budgets

Project cost US\$659763 to Dry Zone Greening Department for required seedlings for planting.

For watershed management plantation and agroforestry activities, project use MMK 0000000 for Network Activities Group

MMK 332,667,310 is paid to Community Development Action for public land and farm boundary tree planting.

Number of planted Seedlings

Implementing Partner	Number of planted trees in 2016	Number of planted trees in 2017	Number of planted trees in 2018	Total
Community Development Action	82,682	2,36,296	269743 (Including patching 15%)	588,721
Network Activities Group	56,655	8,39,298	594244 (including patching 30%)	1490,197
	1,39,337	10,75,594	863987 (including patching)	20,78,918

Number of beneficiary villages

Sr	Township	Ips	No. of Implemented Village in 2016	No. of Implemented Village in 2017	Accumulated no. of Implemented Villages	# of Target Village
1	Nyaung U	CDAction	8	21	29	70
		NAG	10	30	40	
2	Myingyan	CDAction	9	24	33	60
		NAG	4	19	23	
3	Chauk	CDAction	7	15	22	40
		NAG	8	24	32	
4	Monywa	CDAction	8	19	27	50
		NAG	29	14	43	
5	Shwebo	CDAction	12	17	29	60
		NAG	11	25	36	
Total		CDAction	44	96	140	280
		NAG	62	112	174	

List of training activities

#	Date	Location	Events	M	F	Total	No. (m/f) of Participants	Documents & post surveys
Outcome 1: Continuous freshwater availability is ensured during the dry seasons in 280 villages in the Dry Zone								
1	11-12. 05. 2017	NAG office, Nyaung U	Community Mobilization training	24	1	25	25 (1=F, 24= M)	
2	13-14.05. 2017	NAG office, Nyaung U	Community Forestry training	24	1	25	25 (1=F, 24= M)	
3	15-16.05.2017	NAG office, Nyaung U	Agro-forestry Management	24	1	25	25 (1=F, 24= M)	
4	10.06.2017	Nyaung U	Seedling, Handling, Transport, Maintenance, Hardening and Planting training	34		34	34	Capacity Building Training Report, Training event report
5	11.06.2017	Myingyan	Seedling, Handling, Transport, Maintenance, Hardening and Planting training	26	15	41	41	Capacity Building Training Report, Training event report
6	10.06.2017	Monywa	Seedling, Handling, Transport, Maintenance, Hardening and Planting training	20	1	21	21	Capacity Building Training Report, Training event report
7	14.06.2017	Shwebo	Seedling, Handling, Transport, Maintenance, Hardening and Planting training	25		25	25	Capacity Building Training Report, Training event report
8	13.06.17	Chauk	Seedling, Handling, Transport, Maintenance, Hardening and Planting training	13		13	13	Capacity Building Training Report, Training event report
9	17.06.2017	Nyaung U	Agro-Forestry technology training	33	2	35	35	Capacity Building Training Report, Agroforestry Event Report

#	Date	Location	Events	M	F	Total	No. (m/f) of Participants	Documents & post surveys
10	18.06.2017	Myingyan	Agro-Forestry technology training	25		25	25	Capacity Building Training Report, Agroforestry Event Report
11	22.06.2017	Monywa	Agro-Forestry technology training	20	3	23	23	Capacity Building Training Report, Agroforestry Event Report
12	22.06.2017	Shwebo	Agro-Forestry technology training	19	1	20	20	Capacity Building Training Report, Agroforestry Event Report
13	30.06.2017	Chauk	Agro-Forestry technology training	13	2	15	15	Capacity Building Training Report, Agroforestry Event Report
14	21.06.2017	Nyaung U	bookkeeping training	21	5	26	26	Capacity Building Training Report, Bookkeeping training event report
15	22.06.2017	Myingyan	bookkeeping training	15	15	30	30	Capacity Building Training Report, Bookkeeping training event report
16	22.06.2017	Chauk	bookkeeping training	16	3	19	19	Capacity Building Training Report, Bookkeeping training event report
17	24.06.2017	Monywa	bookkeeping training	14	3	17	17	Capacity Building Training Report, Bookkeeping training event report
18	24.06.2017	Shwebo	bookkeeping training	19		19	19	Capacity Building Training Report, Bookkeeping training event report
19	16-19.08.2017	Chauk	Community Forestry training	67	3	70	70 (3=F, 67= M)	
20	28-30.08.2017	Nyaung U	GIS, Google Earth and Mobile GPS Training	31	2	33	25 (2= F,31= M)	
21	29-30.09.2017	Magway	Study and Knowledge Exchange Visit for CF	48	4	52	52(4= =F, 48=M)	

C. Challenges and Issues

Choice of Species or Desirable Species

The project activities are implemented by community-based approach. To get higher quality and result, people participation is fundamental. So, the species to be planted should be favorite ones of local people. Their preferred species are economically profitable ones as their focus is income generating.

Project choice is based on both environmental and economic return. Some species are environmentally worthy but not for economic return within short period. In this case, people do not desire those species. In this case, explanation for environmental aspect is undertaken comprehensively. Finally, they accept those species. But, for sustainability, their maintenance and care for long term should be doubt.

Land Approval Process

Lack of specific procedure for land approval process for plantation site caused delay in application of Community Forestry Certificate to Forest Department. Coordination between departments for land approval is one of the factors of delay.

Budget Limitation

Normally, charges used by implemented projects in dry zone area are higher than that of government department. The budget allotment per seedlings was 260 MMKs in 2016 and 2017. It is very fewer than that of Dry Zone Greening Department. Dry Zone Greening Department use MMK 885 per seedlings while they have skillful staff and labor. So, all steps for tree planting cannot be done due to low budget resulting low survival and growth rate. (Please kindly see Annex – 1 for DZGD norm for watershed plantation (per seedlings) in 2017.)

Grazing Conflict

As local people in dry zone cannot rely only on agriculture, livestock rearing is one of their livelihood diversification. So, livestock grazing is a key challenge in tree planting.

Public Awareness and People Participation

Project activities are implemented in least developing villages of the region. So, local people cannot pay full attention on the project activities as they have to work other activities for their living. As the benefits of tree planting activities is long time process and charges for follow up activities are not included but voluntary basic, most of local people cannot conduct follow up activities. This leads low growth rate of planted seedlings.

D. Sustainability Plan for Project Activities

Sustainability of the project greatly depends on local people willingness to participation and involvement. To get their attention or participation, they need to accept project activities as their own business. To perceive as their owned business, ownership sense plays crucial role.

To stimulate ownership sense, awareness raising and extension activities are prerequisite. Also, capacity building training as well as exchange visit must be organized to manage or to copy the successful stories. Through these activities, local people can recognize the potential profits, both short

term and long-run. Later, they accept and are eager to involve the activities. In this way, they can run the activities themselves by applying technical know-how from the training.

If their participation is trustworthy and their enthusiasm is reliable, project activities will be sustained in long term.

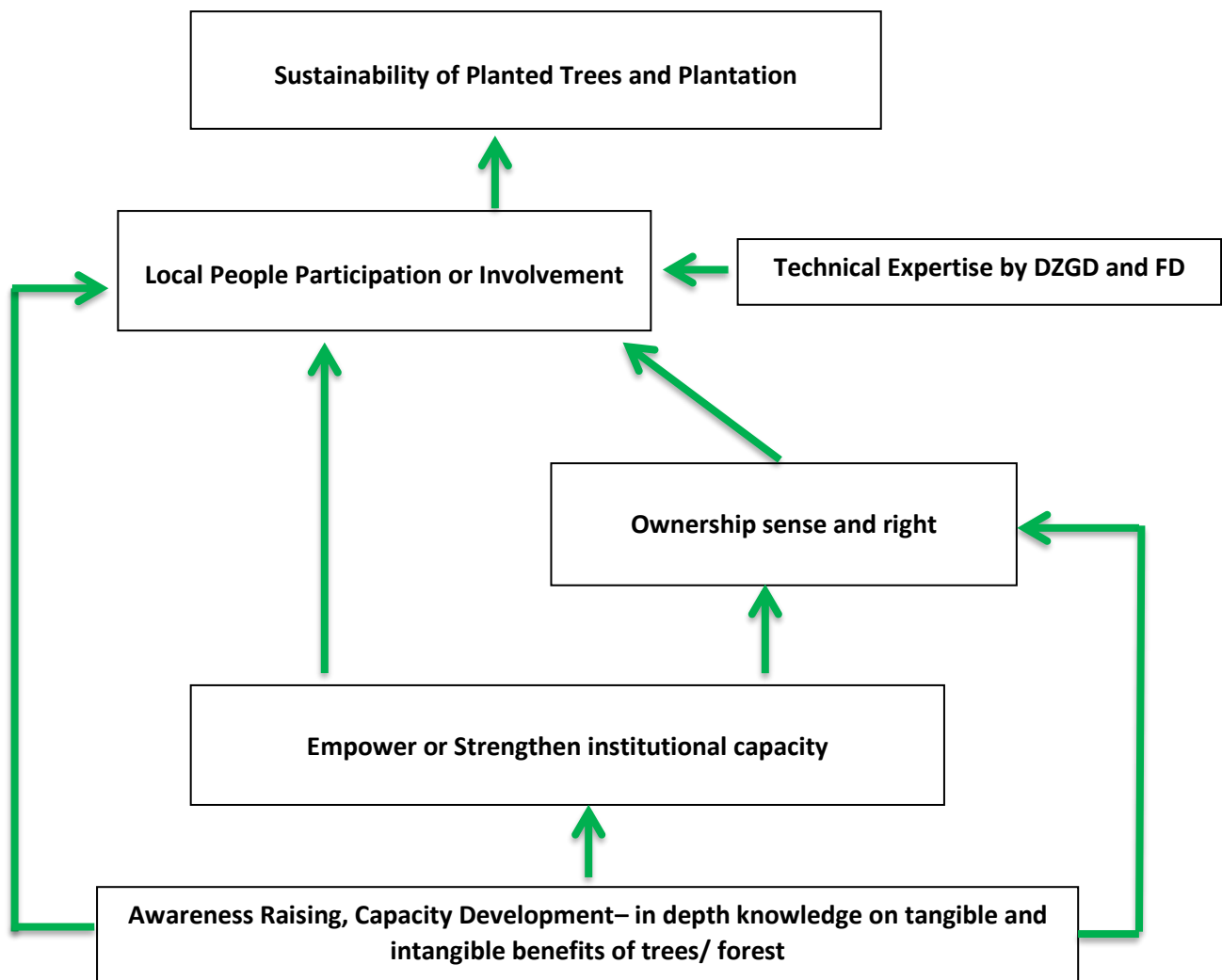
To do so, the project assigned Network Activities Group (NAG) to organize various training events, watershed management, agro-forestry introductory training, Community Forestry Workshops, bookkeeping training and exchange visit. Moreover, to implement every step of field activities efficiently and effectively, seedling handling training and demonstration events are prepared according to the timeline. For transparency and accountability, village orientation meetings are arranged in each village. In this way, every attendee can access to expense and project activities.

Moreover, nursery practice is undertaking in some villages. Local people can pursue nursery technique and later they can replicate for afforestation activities.

To implement project activities effectively and to maintain sustainability of the project activities, support from government departments is enormous. That is why, township level coordination meeting are held to let know project activities, issue and challenges to township departments. Through these meetings, advice and support can be received to operate field implementation.

For sustainability of the project activities, institutional strengthening is also set up like village environmental conservation committee, watershed management committee and Community Forestry Management Committee are set up. These society committees will maintain the project activities.

When project is finished, the list of project activities in each village will be sent government counterpart for technical assistance. While implementing period, joint monitoring and evaluation will be undertaken for quality assurance of each activity. By this, government department can know project activities in their township and they have connection with project implemented village. Later, government departments can support technical expertise as well as further procedure to the local people.

Conceptual Framework for Sustainability of the Planting Activities

E. Exit Strategy

There are two implementing partners, Community Development Action (CDAAction) and Network Activities Group (NAG), under output 1.2 and 1.3.

CDAAction will finish their assignment at the end of September, 2018. As CDAAction implement public land tree planting under output 1.2 and farm boundary tree planting under output 1.3, these activities will handover to local community in Last week of August to 20 September, 2018. The local community has ownership and management right. At the same time, they are responsible for maintained of project activities they received. Actually, these project activities are their properties. The planted trees are their properties. So, sustainability of the project activities significantly rely on their maintenance. For technical assistance, they can connect to government departments: Dry Zone Greening Department and Forest Department.

They have to submit their handover report with photos and required documents to Project Team. Then, project team will send to list of project activities of CDAAction with documents to Dry Zone Greening Department for further assistant and process of project sustainability.

In the case of NAG, they implement Natural Forest Conservation, Watershed Plantation, Community Forest Establishment under output 1.2 and Homestead (Agroforestry), Gap Planting and Demonstration Plots under output 1.3. From December, 2018 to January, 2019, they will handover project activities to village environmental conservation committee on the behalf of local villagers with required documents for ownership and management right. And then, they will submit to project team with photos and documents. Then project activities list will be sent to Dry Zone Greening Department for technical support and further coordination. (Please see annex -2 for sample handover certificate.)

The role of Dry Zone Greening Department is to assist and facilitate local community in afforestation activities. As Dry Zone Greening Department has more than 20 year- experience in afforestation and reforestation activities in the region, they can easily assist technical assistance. The staffs from Dry Zone Greening Department are skillful and qualified in plantation activities.

Forest Department has mandate to give Community Forestry Certificate as well as responsible department for exercising Forest Law Enforcement. So, they can provide legal support when there is any disturbance to plantation activities. Also, they can support technical assistance in afforestation and reforestation activities.

Before project finishing, project team especially environment and forestry specialist and respective implementing partners will facilitate to get close connection between local community and government department for further coordination process.

For inventory of project equipment, CDAAction will handover 1st September, 2018 to 20 September, 2018. NAG will start handing over the assets to project team from December, 2018 to January, 2019.

F. Lessons, Best Practices and Constraints

During the project period, weather condition favored planting activities. Where people participation is good, the result of project activities is better because of favorable weather condition.

As one of the main peculiarities of forestry activities is long term basic, some people are not interested in tree planting. They want to get profit as soon as possible.

Before project implementing phase, area for planting activities should be confirmed as it take very long time to get land approval or no objection letter for tree planting. For land approval process, bottom up approach is not as effective as top down approach. It means taking agreement with senior government officials or head of respective department or cabinet of union or regional government. Otherwise, it will face delay in project implementing phase.

Cost/norm of each activity should be relevant with current price or minimum wage. Otherwise, it will become like burden to local people. Then, the impact or result of project activities will not be impressive or under qualified. Not only expense but standard of project should be higher than that of government.

In demonstration plots where Shaw Phyu (Wild Almond) is planted; local people take good care for their economic profit. At the same time, some people try to plant that seedling by using technical expertise and experience of target farmer. In Yan San village, some people will plant Shaw Phyu in their field in their arrangement. For wide range of replication, it needs to take certain time.

G. Conclusion and Recommendations

1. Target area planting should be confirmed and get agreement from respective government department. For forest land, Forest Department has mandate, for land at the disposal of government, General Administrative Department can issue approval or can coordinate for getting approval.

2. Budget and target should be pertinent according to the local context, minimum wage and market price. To assure better quality, budget should be adequate for all steps of activities.

3. For better management and implementation, project should focus in handful area. Scattering different areas cause difficulties in management and have to deal with more authorities. The important thing is the impact or show case is not significant. From the point of donor, a lot of expense goes while few yield for each beneficiary. Although, number of beneficiary is huge, the impact on each beneficiary is little.

4. Project activities should be specific rather than multi-dimensional. It will be complex for project steering personnel. From the point of community, they have to deal for different sectors. In this project, local communities are set up environmental conservation committee for tree planting, thresher user group, seed storage facility use group, water user group and livestock farmer group.

In spite of various challenges and limitations, project team, implementing partner and local community try their best for better result of project. But, if above limitations are handled, the future project will make more profitable for local community.

Annex - 1

DZGD norm for Watershed Plantation (Per Seedling) in 2017**12' x 9' (403 Seedlings per acre)**

Sr	Activity	Expense per acre	Expense per Seedling		
1	Survey	500	1		
2	Sticking	11840	29		
3	Pit Digging, Soil Refilling	221650	550		
4	Cow Dung	25300	63		
5	Seedling Transportation	6045	15		
6	Planting	16200	40		
7	Patching	2500	6		
8	Weeding (2 Times)	40300	100		
9	Fertilizer	13900	34		838
10	Fire Protection	10770	27		
11	Inspection Road	900	2		
12	Survival Counting	1900	5		
13	Camping	690	2		
14	Equipments for Camping	1030	3		
15	Labour Transportation	1030	3		
16	Erecting Signboard	890	2		
17	Plantation Pillar	1370	3		
Total Budget Except Nursery Practice		356815	885		

Handover Certificate of Plantation and Planted Trees

This official hand-over certificate was prepared by the project of “ Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar”, implemented by UNDP – Adaption Fund, based on Natural Forest Conservation (1196) Acres and Homestead Planted Trees (1767) to Village Environmental Conservation Committee of Kamma Village, Nyaung U Township, Mandalay Region, for ownership and management of village community.

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Network Activities Group

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