ADAPTATION FUND

MONREC

Ministry of Natural Resources & Environmental Conservation

UNDP

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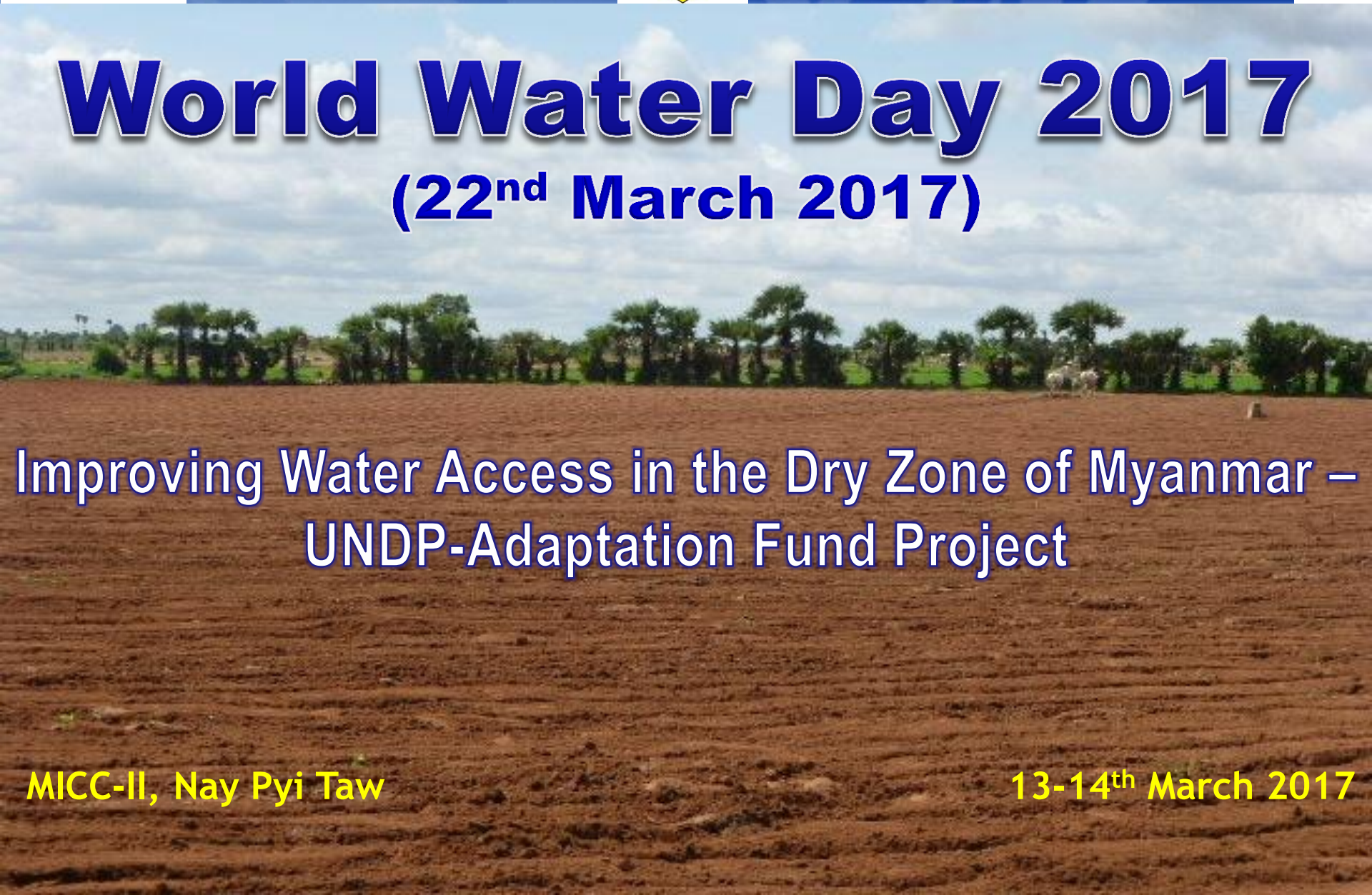
# World Water Day 2017

## (22nd March 2017)



## Improving Water Access in the Dry Zone of Myanmar – UNDP-Adaptation Fund Project

MICC-II, Nay Pyi Taw

13-14th March 2017

# Brief about UNDP(Myanmar)-AF Project

| | | | | |
|---|---|---|---|---|
| **Project Title** | **Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar** | | | |
| | | | | |
| **Counterpart Institution** | Ministry of Natural Resources and Environmental Conservation<br>**Dry Zone Greening Department** | | | |
| **Budget (US $)** | Total 8,468,604 | 7,289,425 | Financing by | Adaptation Fund |
| | | 624,998 | Co-financing by | United Nations Development Program UNDP |
| | | 554,181 | Co-financing by | Government of Myanmar |
| **Duration** | **4 years** (17th Feb 2015 ~ 16th Feb 2019) | | | |

| | | | |
|---|---|---|---|
| **Location** | **60** villages | **Shwebo** Township | **Sagaing** Region |
| | **50** villages | **Monywa** Township | |
| | **60** villages | **Myingyan** Township | **Mandalay** Region |
| | **70** villages | **Nyaung U** Township | |
| | **40** villages | **Chauk** Township | **Magway** Region |

# Project Overview (Objective/Outcomes/Outputs)

**To reduce the vulnerability of farmers in Myanmar's Dry Zone to increasing drought and rainfall variability, and enhance the capacity of farmers to plan for and respond to future impacts of Climate Change on food security**

| Continuous freshwater availability is ensured during the dry seasons in 280 villages in the Dry Zone | Climate-resilient agricultural and livestock practices enhanced in Myanmar's Dry Zone | Timeliness and quality of climate risk information disseminated to Dry Zone farmers enhanced |
|---|---|---|
| Water capture and storage capacities in 280 villages enhanced to improve more access to irrigation and potable water supply during dry periods | Drought-resilient farming methods introduced to farmers to enhance the resilience of subsistent agriculture in the Dry Zone | Climate hazard maps and risk scenarios developed in each township to support community-based climate risk management and preparedness planning |
| 6,141 hectares of micro-watersheds protected and rehabilitated through Farmer-Managed Natural Regeneration (FMNR) to increase natural water retention and reduce erosion | Resilient post-harvest processing and storage systems introduced to reduce climate-induced post-harvest losses (drought and floods) | Local level climate and disaster risk management framework strengthened for timely and effective communication of climate risk and early warning information |
| Community-based agro-forestry plots established on 3,983 hectares of lands to conserve soil and water | Climate resilient livestock production systems introduced in 6,300 landless households to buffer the effects of flooding and drought on rural livelihoods | |
| $4,084,642 | $2,316,760 | $782,000 |

# To enhance Water capture and storage capacities in 280 villages …

to improve more access to irrigation and potable water supply during dry periods

# 4 work-packages & expected benefits for output 1.1

**Canal renovation in Shwebo Township** ⇨ 2852 acre land of 488 Household (from 7 # of project village + 3 # non-target villages) will become access more irrigation water and gained more return from their paddy lands

**Soil & Water conservation** in 5 Townships ⇨

- Resource persons (280 + 20+ 4) nurtured for soil and water conservation technical introduction & dissemination
- Soil erosion reduced on 2890 acre waste & marginal land
- Rehabilitated 150 ponds retained more water than the past
- Constructed 44 # diversion canals support for irrigation + promote water capture for village ponds

Water Infrastructure **Need Assessment** for 5 Townships and **Quality Control** for implementation of relevant activities ⇨

- ✓ Assessment result for Township Planning evolved with existing and potential water resources, priorities of project village needs
- ✓ Project inputs > materials + services < QC
- ✓ Test water quality of tube wells & prepare a set of recommendation for use of each community
- ✓ SOPs for Village Water Users' Groups

**Construction/Renovation/Installation** of Water infrastructure Activities as per assessment priorities + **Operation and Maintenance Training** ⇨

- Deep tube wells (Drinking) 19 villages
- Shallow tube wells (Drinking) 20 villages
- Communal water tanks (Domestic) 56 villages
- Water pumping system (Agriculture) 25 vlg.s

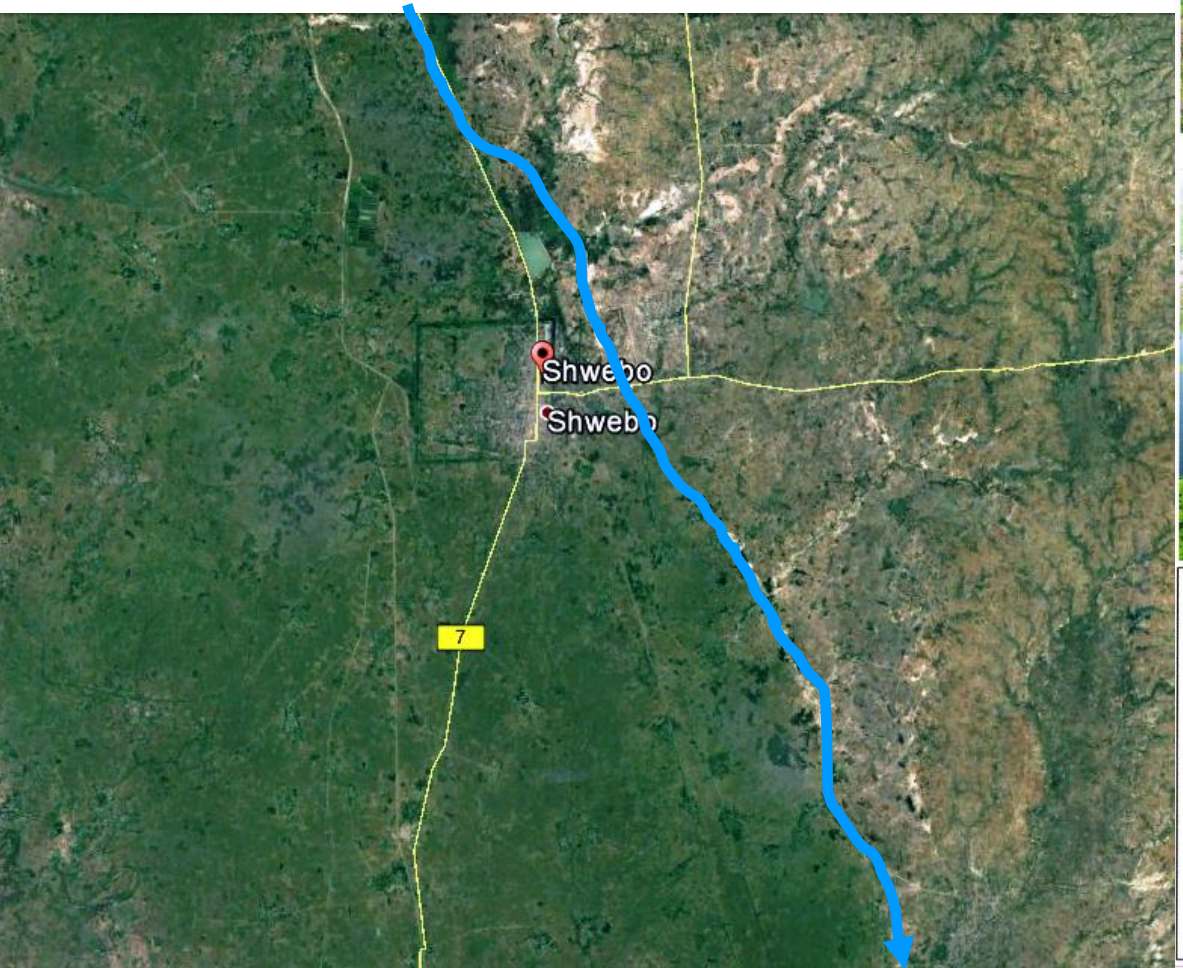
❑ Operation & Maintenance Training

# Canal renovation in Shwebo Township

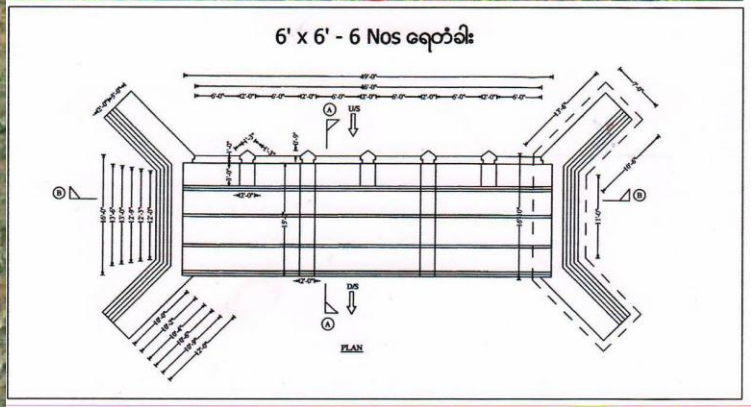
1st Aug. 2016 ~ 15th Feb. 2017

**Responsible Partner**
**Aung Zay Yar** Shwebo Social Compassioners' Association

## Information background





# During implementation (excavation of 3700 feet t long earth canal)

Proper coordination with concerned department is very important. Collaboration of department (by operational support and technical supervision) in this activity is valuable and appreciated.

# KanTawMin escape gate (a portion of renovation tasks)

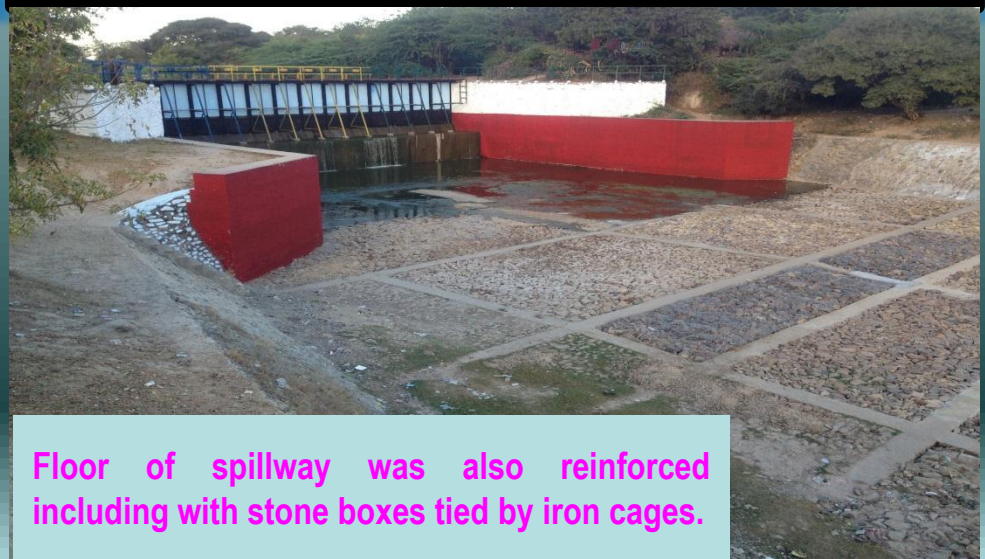
## Front view


# KanTawMin escape gate (a portion of renovation tasks)

## Rear view

Before

After



Floor of spillway was also reinforced including with stone boxes tied by iron cages.

# Upstream side of Ka Phyu check gate _ before cleaning
(poor water flowing due to natural vegetation and debris inside the canal)

# Cleaned upstream side of Ka Phyu check gate (ariael view)

# Soil & Water conservation
in 5 Townships

## Demonstration of water harvesting devices
(for the purpose of forest tree plantation and agro-forestry tree plantation)

**Responsible Partner**
**FBD technical group**

**9th Aug. 2016 ~ 8th Aug. 2018**

Check structures (made of stone, Do-Nou, brush-wood) for the purpose to control run off velocity so that not only soil conserved but also more rain water recharged as underground moisture)

# Contour lines constructed across the slope
# Biological measures between physical structures

# Harvested water in contour trench
## (one day after one time distribution of rainfall)

# Small earth dam (embankment and spillway reinforced with Do-Nou)
(to conserve soil + to capture more rain water so that stored as soil moisture)

**Rehabilitation of 150 # earth ponds will be for storage of rain water.**
It will also be linked with assessment result priorities.

For more capture of rain water run off, pond rehabilitation activity will be linked as need with water diversion canal activity to be constructed at the upper catchment.

## Trainees will be left as soil & water conservation technical resource persons if UNDP exit.

They will be ready to help technically in maintenance and replication of such relevant activities if needed.






**Trainees will be left as soil & water conservation technical resource persons if UNDP exit.**

**304 trainees were well trained by 12 day session (3 days of room discussion + 9 days of practical exercises).**
(**280 trainees for 280 target villages** (community) + **24 department-staffs** of DOA, DZGD and DRD)

# Water Infrastructure Need Assessment for 5 Townships and Quality Control for implementation of relevant activities

19th Sept. 2016 ~ 14th Sept. 2017

## 1. Rapid Need Assessment covering 280 villages

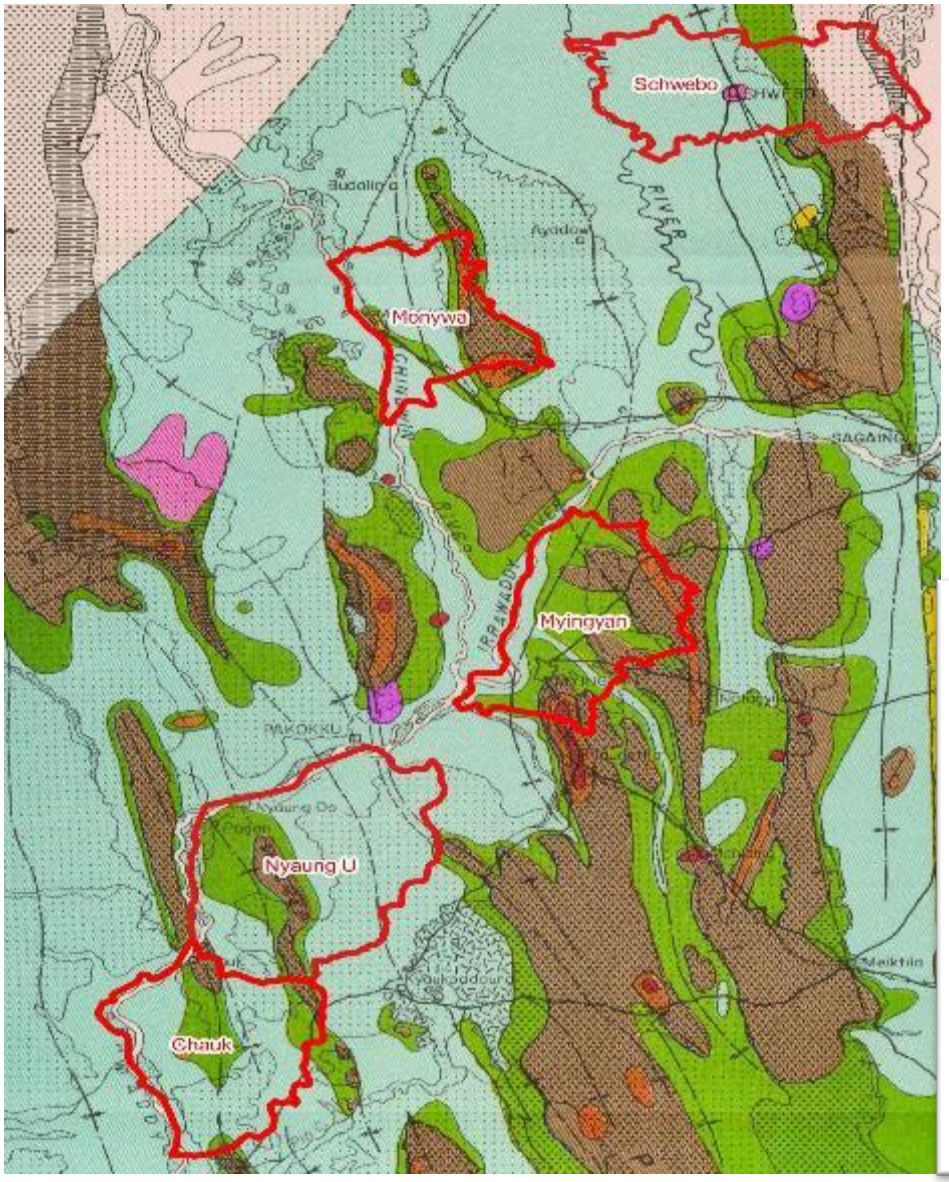
- Township meeting with departments
- Village wise check lists based analysis
- Simplified conclusion sheet of RNA result

Meeting at Townships

(General Administration Department + Dry Zone Greening Department + Department of Rural Development + Department of Agriculture + Irrigation and Water Utilization Management Department + Hydroconseil team + Civil Society Organization like as AZY + Village Tract Administrators)

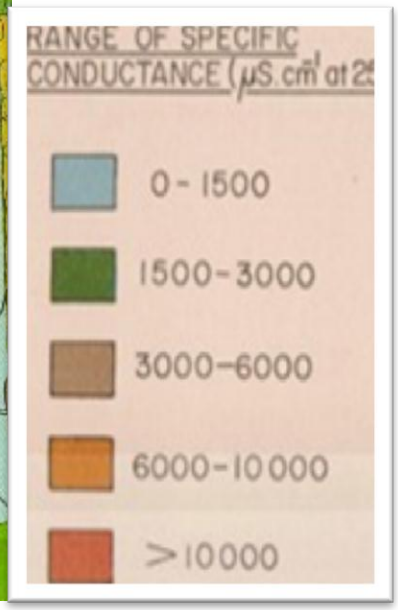
# Township Level Coordination Meeting

# Water Quality Criteria Results on Hydrological map in targeted 5 townships

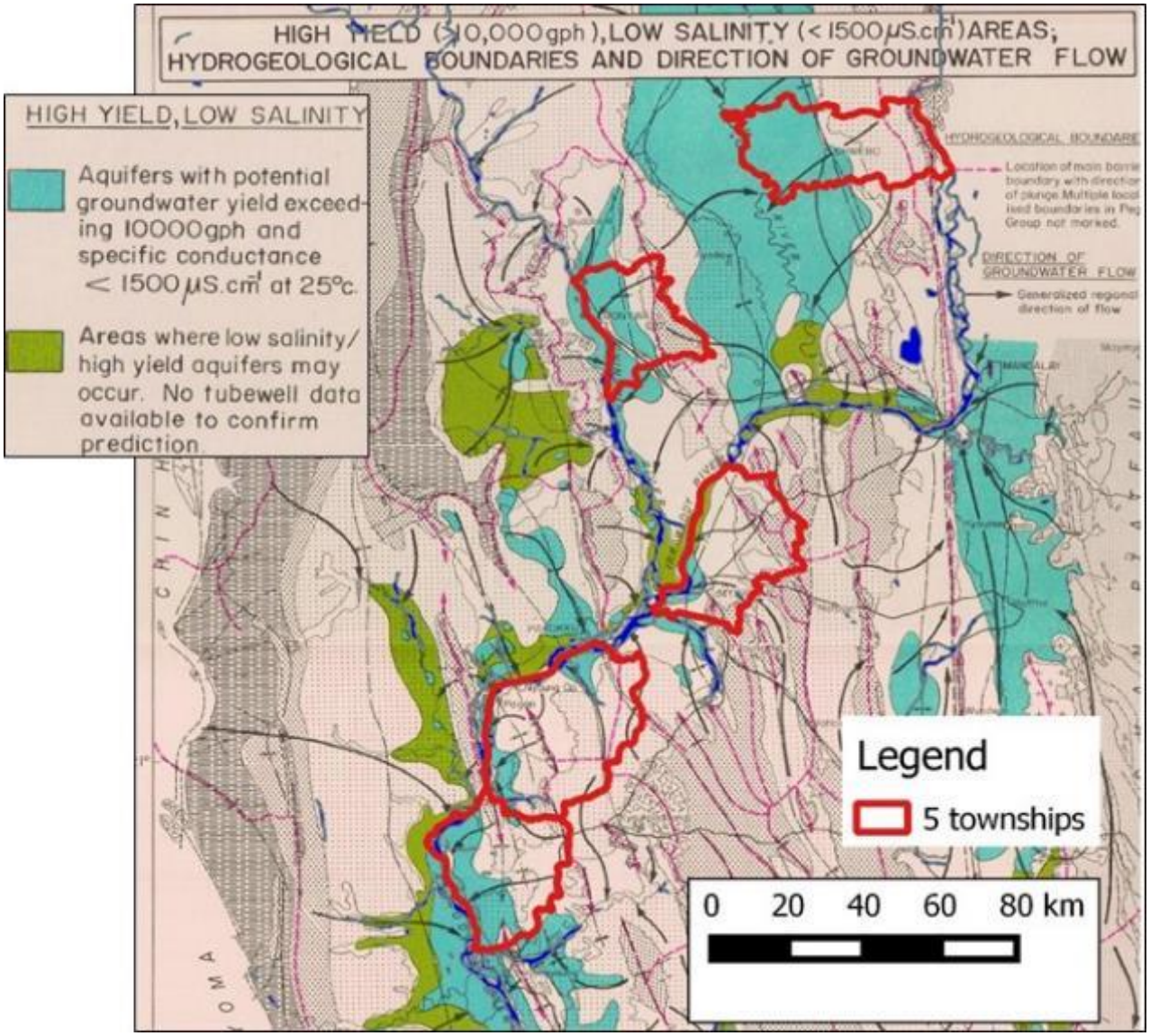



The feasibility for shallow or deep tube wells will be based on three criteria:

- the water quality (salinity based on conductivity);
- the water availability (productivity of aquifers);
- the water able level;



# Water availability for all the villages




- Based study on the hydrogeological map
- Potential groundwater yield exceeding 10,000 gph and specific conductance inferior to 1500 µS/cm (at 25°C)

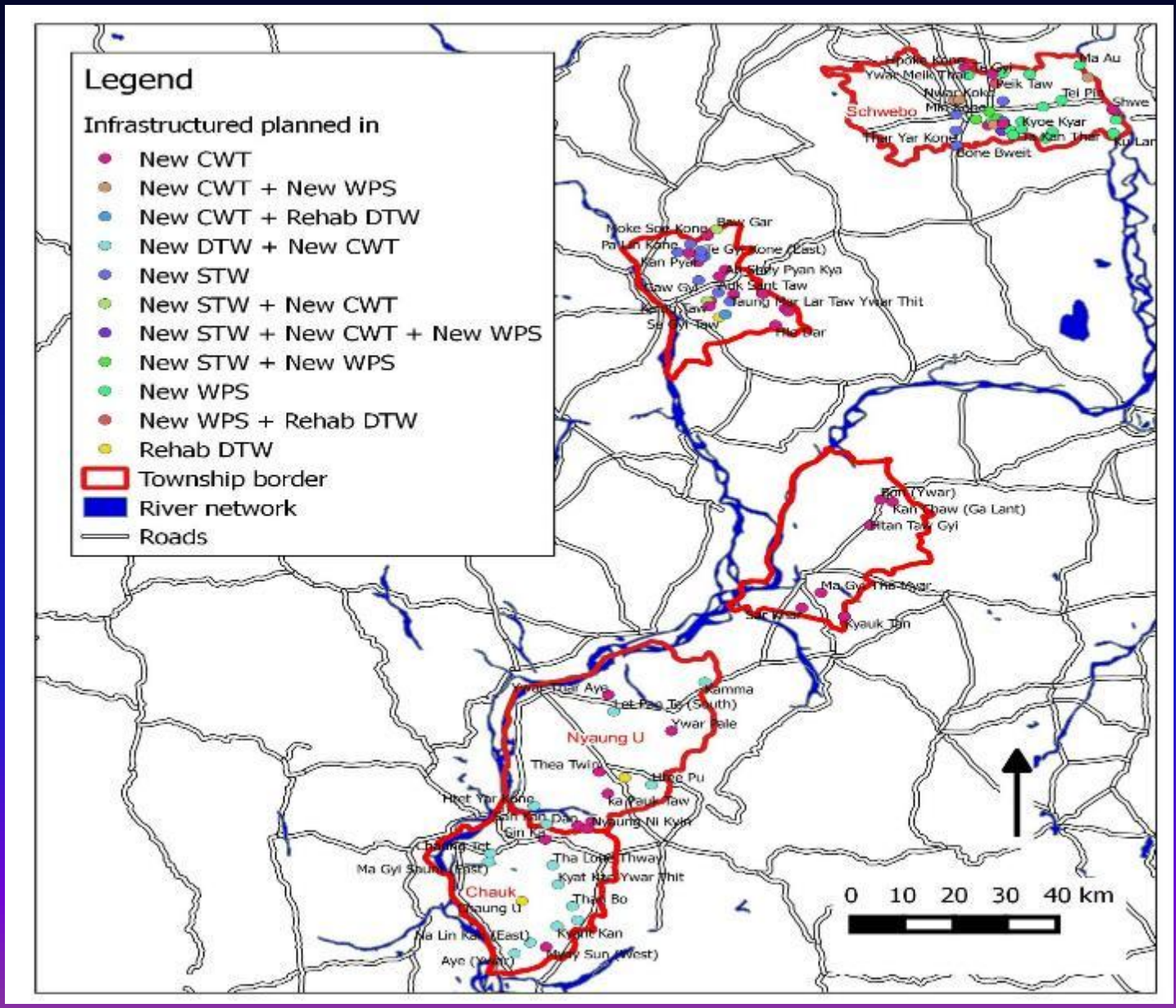
# Collection Data (Rapid Need Assessment)

# Collection Data (Rapid Need Assessment)

# Summary of assessment results

| Region | Target Township | Deep Tube Well | Shallow Tube Well | Water Pumping System | Communal Water Tank | TOTAL |
|---|---|---|---|---|---|---|
| **Sagaing** | Shwebo | 1 rehabilitation | 10 | 70 WPS in 26 villages | 11 | **92** |
| | Monywa | 2 rehabilitation | 10 | / | 15 | **27** |
| **Mandalay** | Myingyan | / | / | / | 6 | **6** |
| | Nyaung U | 7 (Including 1 rehabilitation) | / | / | 14 (including 6 with new DTW) | **21** |
| **Magway** | Chauk | 9 (including 1 rehabilitation) | / | / | 10 (including 8 with new DTW) | **19** |
| **TOTAL** | | **19** | **20** | **70** | **56** | **165** |

# Location of selected sites for infrastructures



# Work-packages for output 1.2 and 1.3 (under the same Outcome 1)

**Public Land Tree Planting and Farm Boundary Planting** in 5 Townships

**Agro-forestry +**
**Community Forestry +**
**Natural Forest Conservation +**
**Micro-Watershed Management**
in 5 Townships

# Public Land Tree Planting and Farm Boundary Planting in 5 Townships

2016 ~ 2018

Responsible Partner
Community Development Action CDA

| Implementing Period | # | Activity | Unit | Quantity |
|---|---|---|---|---|
| 2016 | 1 | 2016 plantation | seedlings | 82,682 |
| | | Public land plantation | seedlings | 51,355 |
| | | | acre | 58 |
| | | Farm boundary plantation | seedlings | 31,327 |
| | | | acre | 494 |
| | 2 | Rapid assessment for 2017 plantation | Village | 44 |
| | 3 | Land assessment for 2017 plantation | | |
| 2017 | | Public land Tree planting in 2017 | acre | 342 |
| 2017 | | Farm boundary Planting in 2017 | acre | 209 |

# Farm boundary tree planting in Min Ywa, Shwebo Township

# Public land tree planting (School compound) Tha Nyit Kan village, Myingyan Township

# Public land tree planting (Religious compound) in Pa Lin (N) village, Monywa

# Public land tree planting (Road side) in Taung Nauk village, Chauk

# Public land tree planting (Pond boundary) in Su Ti village, Nyaung U Township

# CF+NFC+ Agro-forestry + Micro-Watershed Management in 5 Townships

2016 ~ 2018

Responsible Partner
Network Activity Group
NAG

| Implementing Period | # | Activity | Unit | Quantity |
|---|---|---|---|---|
| 2016 | 1 | Village Orientation | Village | 66 |
| | 2 | Seedling requisition | Pieces | 59,098 |
| | 3 | Formation of CBAFG | No. | 62 |
| | 4 | Homestead gardening | Village | 62 |
| | | | hactare | 203 |
| 2017 | 5 | GPS points collection for 2017 plantation | | |
| | | Natural Forest Conservation | hactare | 150 |
| | | Watershed management area | hactare | 632 |
| | | Modified Taungya | hactare | 165 |
| | | Inter cropping of forest tree | hactare | 41 |
| 2017 | 6 | Township level consultation for land issue | Township | 5 |

# Township Level Consultation Meeting of NAG with concerned departments and community representative persons

# Thank You

## For your attention
## and kind comments + suggestion