



Inle Lake Integrated Watershed Management jointly implemented by the Forest Department of Myanmar and Japan International Cooperation Agency

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Forest Department

Ministry of Natural Resources and Environmental Conservation

26-1-2021

Agenda

1. Introduction
2. Challenges and Issues
3. Efforts against Challenges
4. Arrangements against Covid – 19
5. Forest Department's Expectations
6. Way Forwards

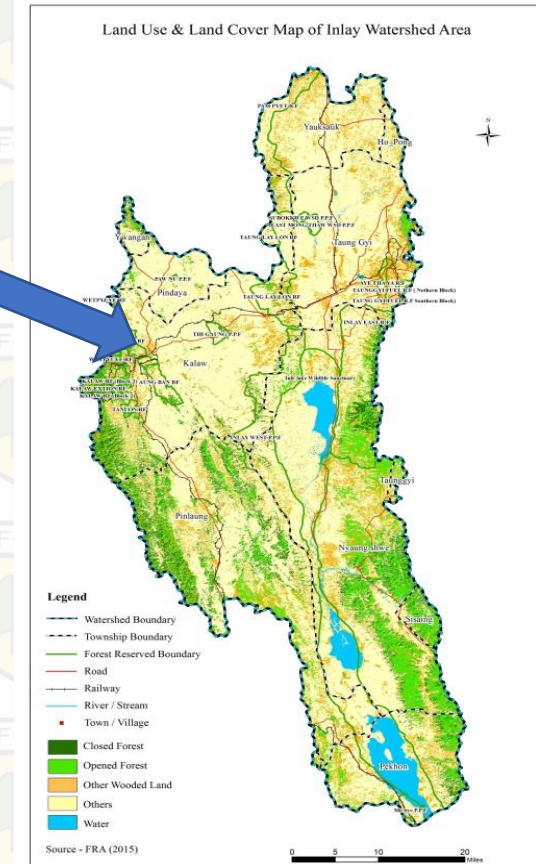
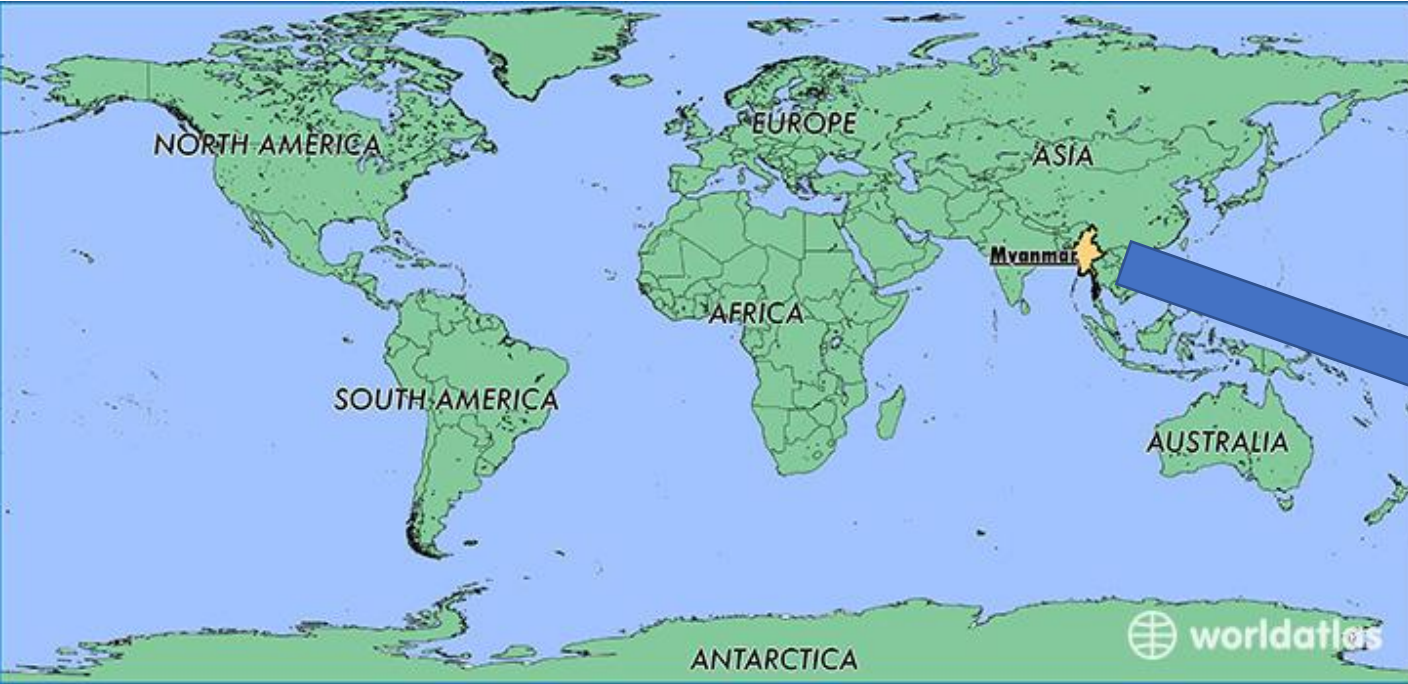
Introduction



US Dept of State Geographer
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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Google Earth

eye alt 17803.82 mi



- Location - Southern Shan State, Taunggyi district, Nyaungshwe, Pinlaung & Pekon Township
- Watershed area - 53,535.1 ha
- Altitude - 899.2 m asl
- Water surface area
 - 2010-2015 - (259.2 - 195.3) sq km

Second largest inland lake

45 villages

Around 100,000 people



❑ The second largest inland fresh water lake in Myanmar.

❑ Not only habitat for native wild animals but also a resting place for migratory birds.

❑ Endangered Species among birds and aquatic animals.

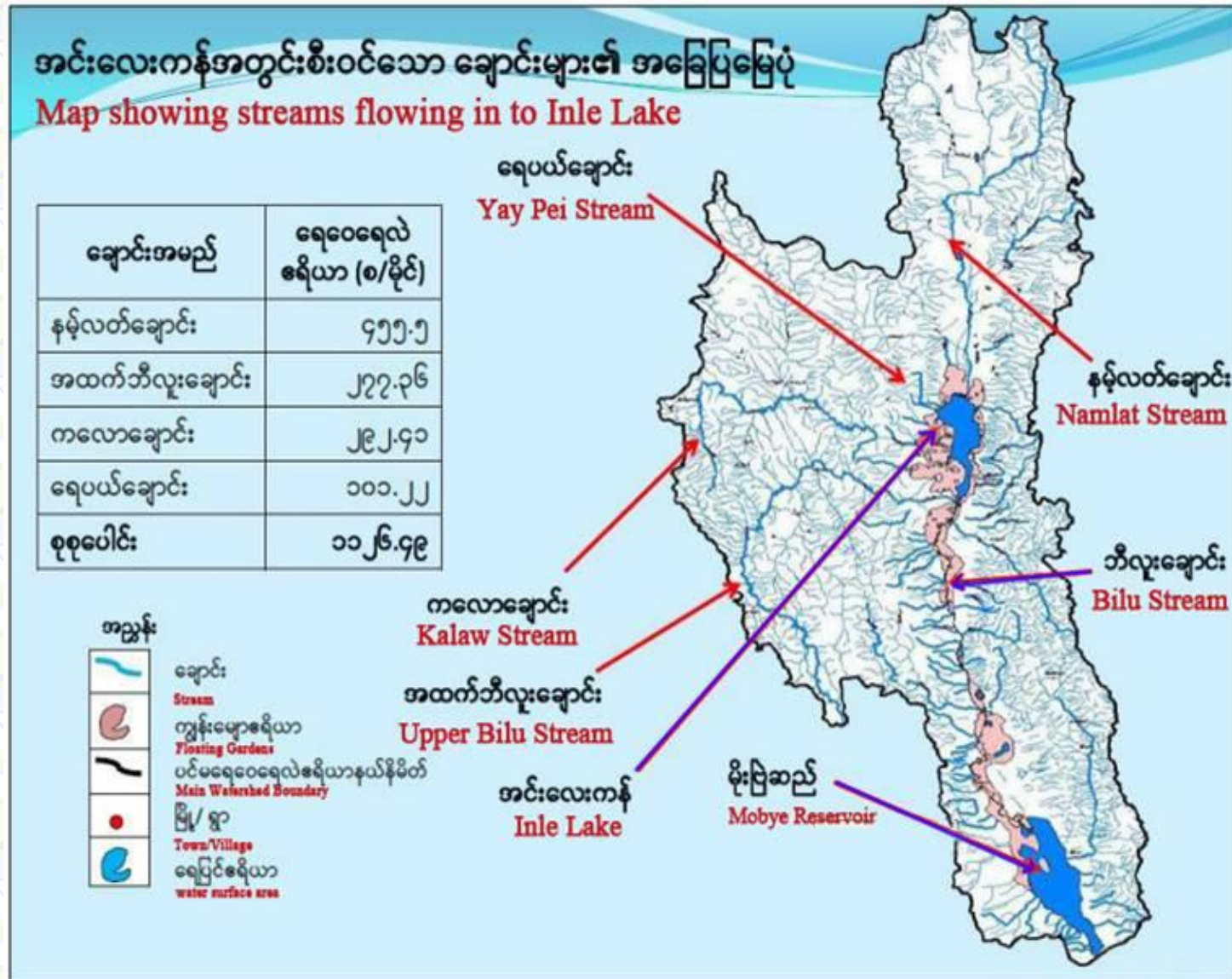
❑ Very famous tourist site due to geo-climate, cultural heritage and unique livelihood.

❑ Crucial water source to provide hydro-electricity.

- a) Inle watershed area is (5611.986) Square Kilometer and composed of reserved forest, protected public forest and wildlife sanctuary.
- b) established in January 1985 and The First Man and Biosphere (MAB)



c) 29 streams flow into Inle Lake and 4 of them (Namlet, Yable, Kalaw and upper Balu) flow year round. Onle one outflow.



Birds in Inle Lake wildlife Sancturay



353 Species of birds (260 Forest birds ; 93 Water birds)

Challenges and Issues

1. Reduced Surface area of open water
2. Declining water quality
3. Sedimentation of lakeside zones
4. Soil erosion in hillside areas
5. Declining agricultural productivity in lakeside zones
6. Threats to human health
7. Predicted large and rapid increases in visitor numbers
8. Lack of tools for sustainable management
9. Climate Change



Evidence of Natural Disaster in Inle Lake Area

- ❖ Due to severest temperature rise of Myanmar in 2010 and less precipitation than normal in 2009, there was a severe drought.
- ❖ Water scarcity in some village, difficulty in boat transportation.
- ❖ Impact on the socio-economy in short term.



Water pollution



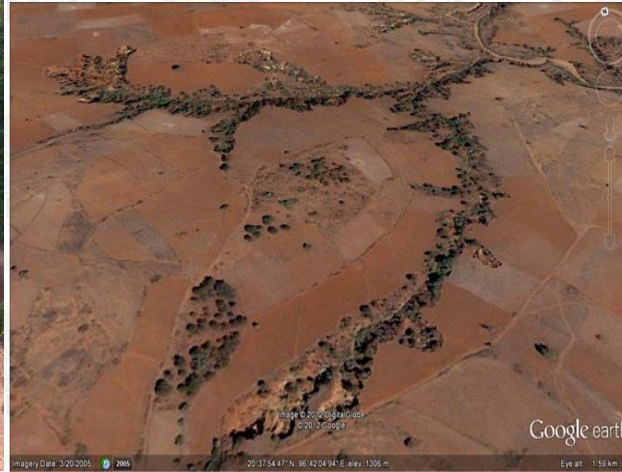
Tourism Increase and pocketed habitat



Illegal Electric Fishing Gear



Worst Cases



Sediments in Lakeside Zones



Threats to human health



Year 2015

Year 2015



Year 2010

Year 2010

Efforts against Challenges

By the International Cooperation

With the Japan International Cooperation Agency (JICA)

By the Government

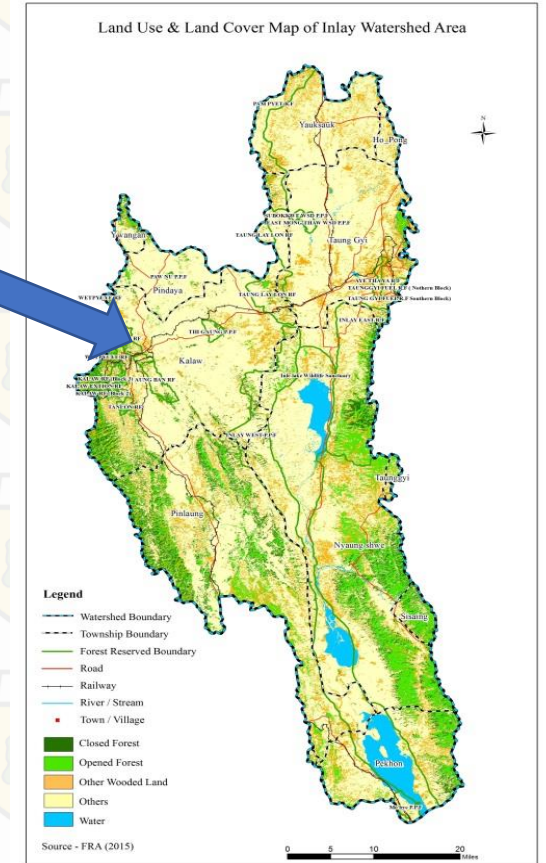
With the Government's Support

By the International Cooperation

With the Japan International Cooperation Agency (JICA)

Background Information

- Project Title** - The Project for Capacity Building for Sustainable Natural Resource Management (FDSNR)
- Agreement Signing Date** - 29.12.2017
- Project Period** - 5 years (June, 2018 to June, 2023)
- Project Area** - Inle Lake Watershed Area

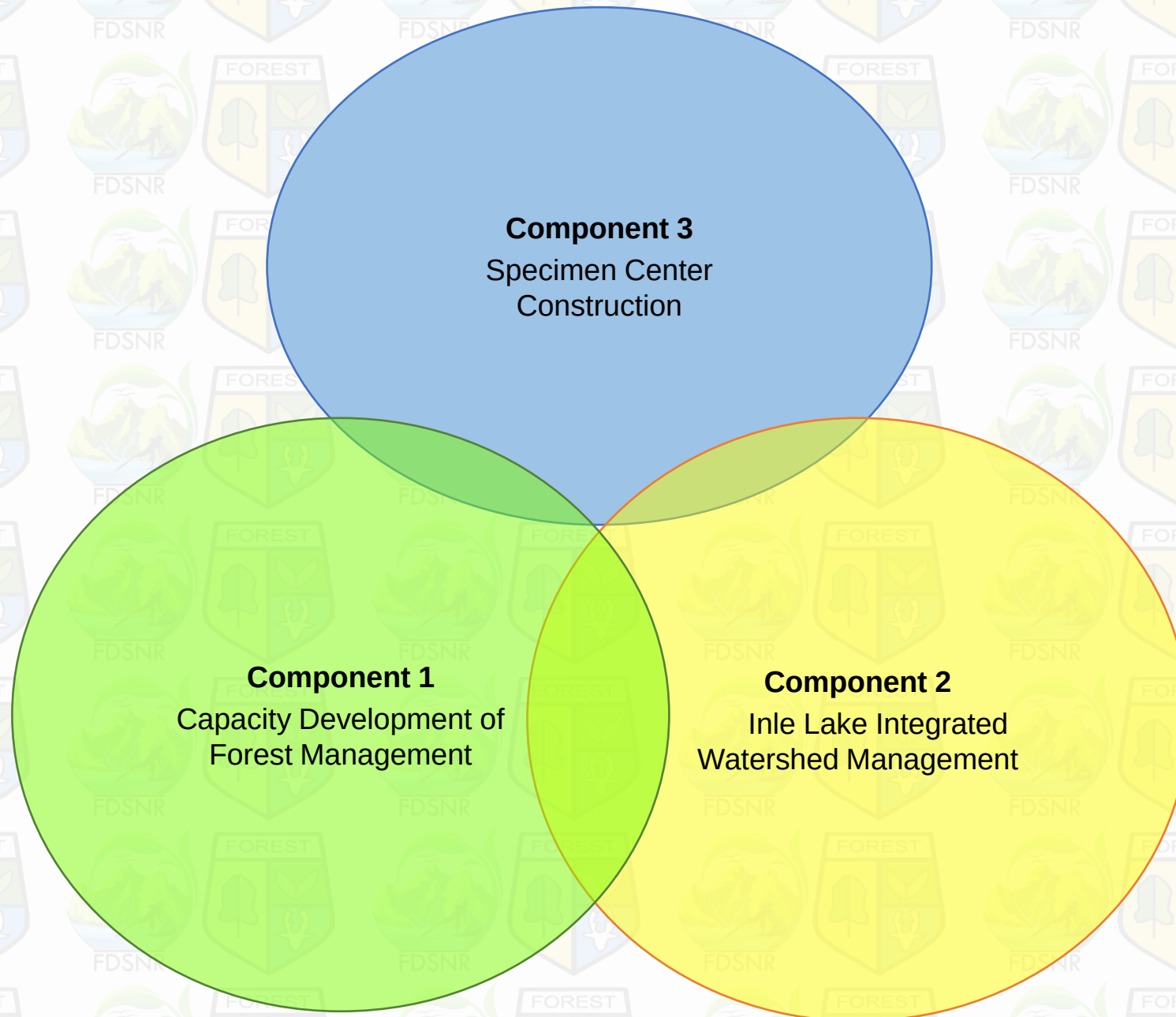


History of the formulation of the FDSNR project



- ❖ Based on the kind request by the State Counsellor of Myanmar to the Government of Japan, a Record of Discussion to implement “the Project for Capacity Building for Sustainable Natural Resources Management – FDSNR” was signed between the Ministry of Natural Resources and Environmental Conservation, Myanmar and Japan International Cooperation Agency on 29th December 2017.

Background Information



Component – 1

Capacity Building

- **Strengthening and Promoting modernized forest management**

Component – 1

Forest Monitoring Tools (FMT) Training

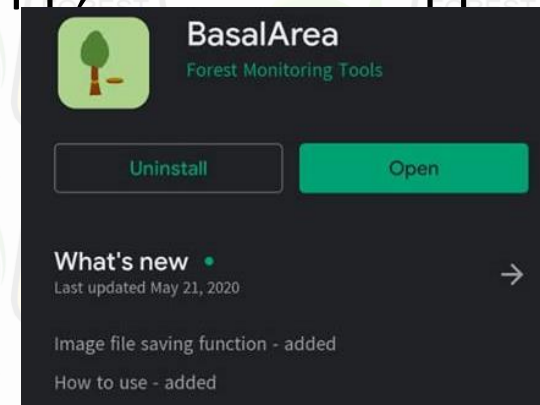
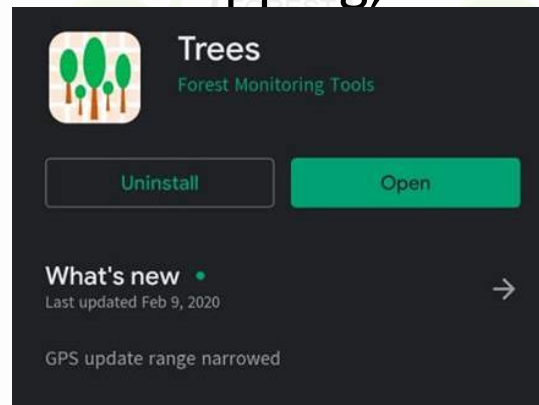
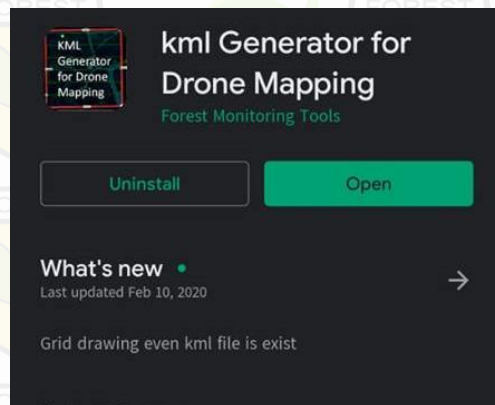
Hardware

- Drones, VR Cameras, Rangefinders, 3D Laser Scanner



Software

- KML Generator for Drone Mapping, Trees app, Basal Area app



Component – 1

Forest Monitoring Tools (FMT) Training



Component - 1

Long Root Seedling Training (JIFPRO)



Nursery Training (FTBC)

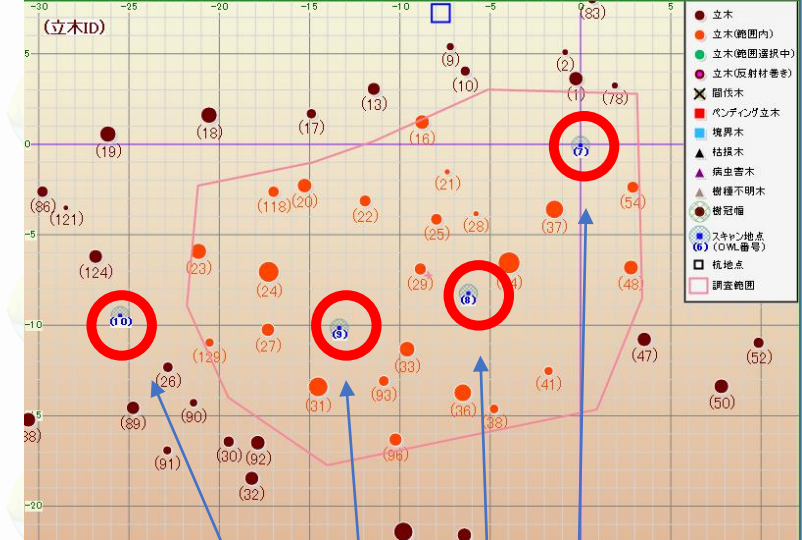
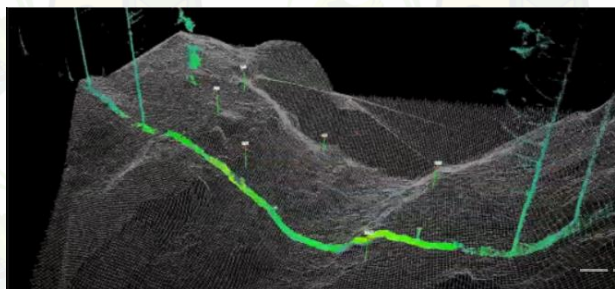
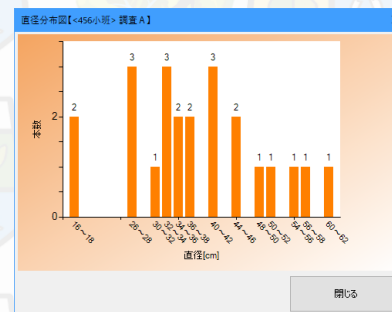


3D Laser Scanner “OWL” (Optical Woods Ledger)

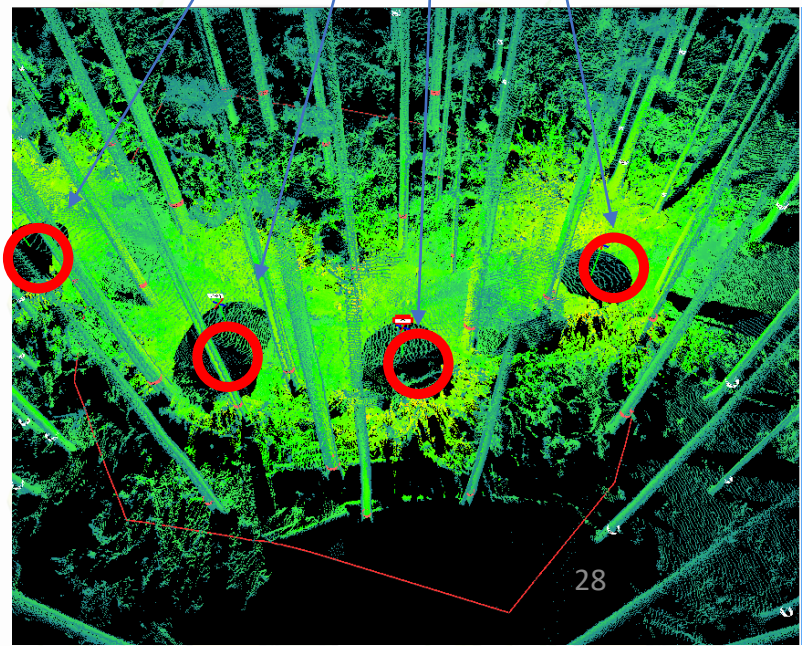
1. Set the reflection markers
2. Data collection by OWL (1 min/scan)
3. Data generation by PC (approx. 10 min)
4. Summary data output

1. 100 ~ 2500 m² area
2. 3 ~ 50 scans (10 meters each)

1. 3D image of forest
2. Sample plot data (e.c. NFI)
3. Geometry data (e.c. Soil conservation works or road construction works)



Scanning points



Component - 2

Inle Watershed Management

- **Strengthening forest management (Community Forestry)**
- **Gully erosion control**
- **River monitoring and sedimentation analysis**

Component - 2

- Scientific analysis of soil inflow and sedimentation in the Inle Lake
- Soil conservation work



Automatic water sampler



Waterflow monitoring scale



Gully Erosion Control



Trail Camera

Component - 2

Strengthening Forest Management



Joint Forest Management (JFM)



Component - 2

Gully Erosion Control

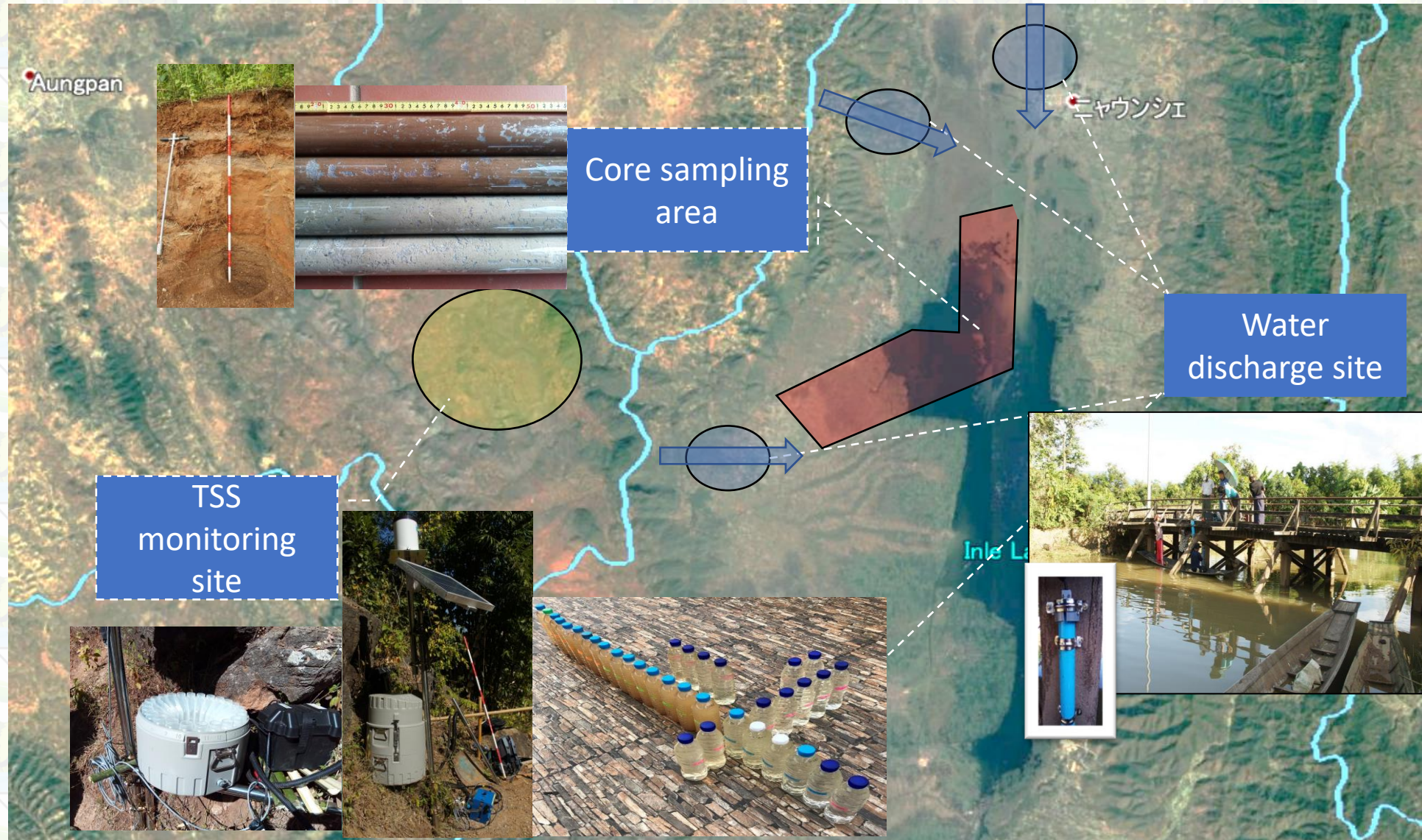


Component - 2



Component - 2

River Monitoring and Sedimentation Analysis



Component - 2

Project Sub-Management Unit



Working Group of community forestry and sustainable land management

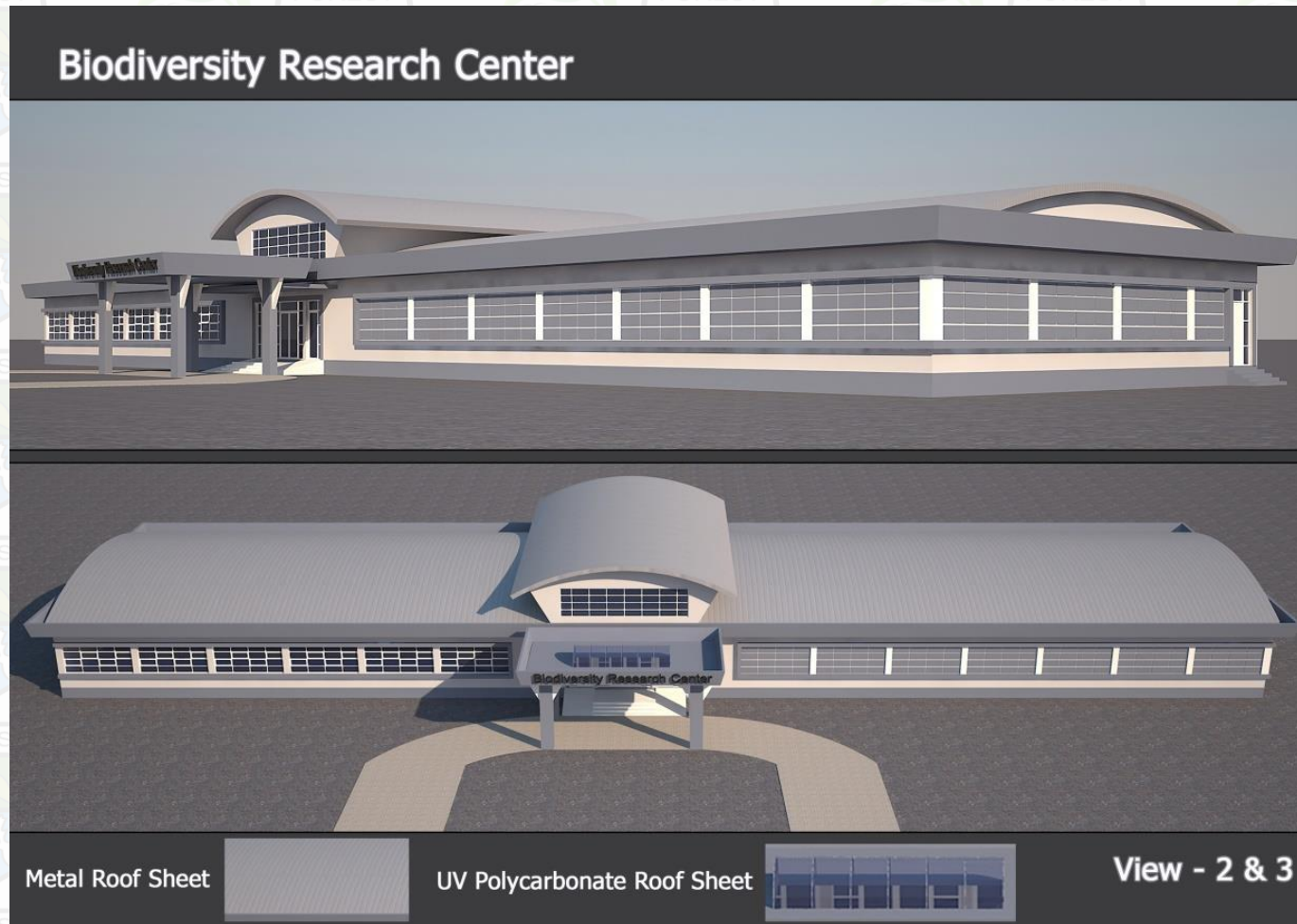


Working Group of water monitoring and erosion control



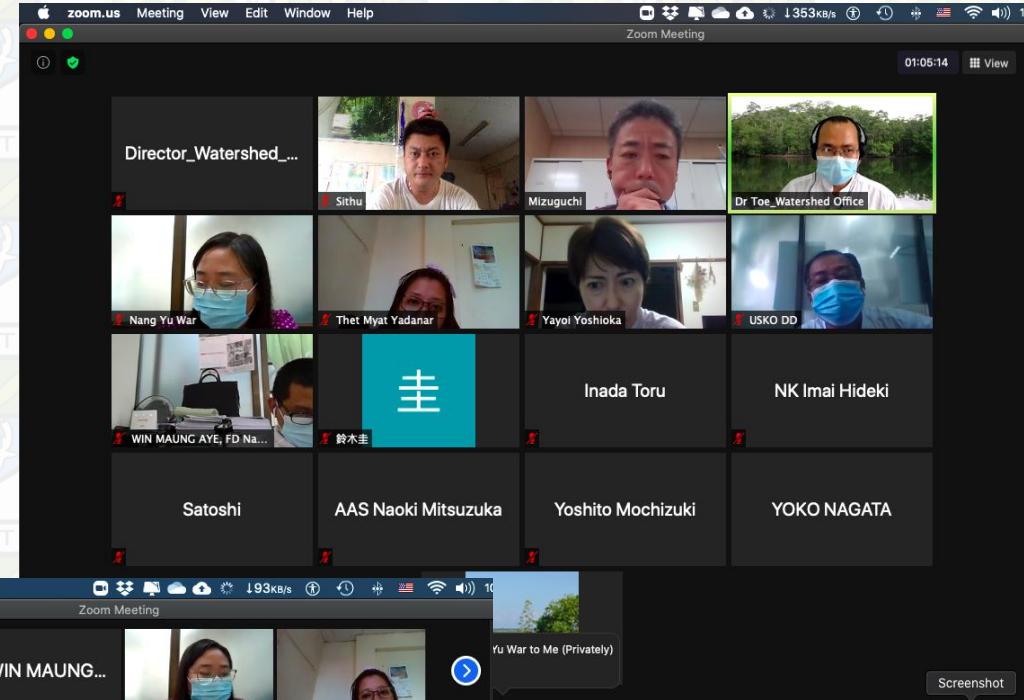
Component - 3

- Biodiversity Research Center construction (FRI)
- Biodiversity Database System



Arrangements against Covid - 19

- Improving the Work Plan through Virtual meetings between the Forest Department and FDSNR Project Team
- Developing the training materials (eg; video clips) in terms of forest management, river monitoring, soil erosion control and so on.



Monitoring and Evaluation

Joint Coordination Committee (JCC)



For more information

<https://web.facebook.com/FDSNRproject/>



Monrec-Jica
FDSNR project
@FDSNRproject

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Create a Page

Our activities

Component 3
Specimen Center Construction

Component 1
Capacity Development of Forest Management

Component 2
Inle Lake Integrated Watershed Management

FDSNR enforces the national capacity for sustainable natural resource management consists of following three major activities.

1) Forest Management

- Capacity Development
- Policy Analysis



Aero view of Inle Lake catchment area where severely gully erosions are expanding.

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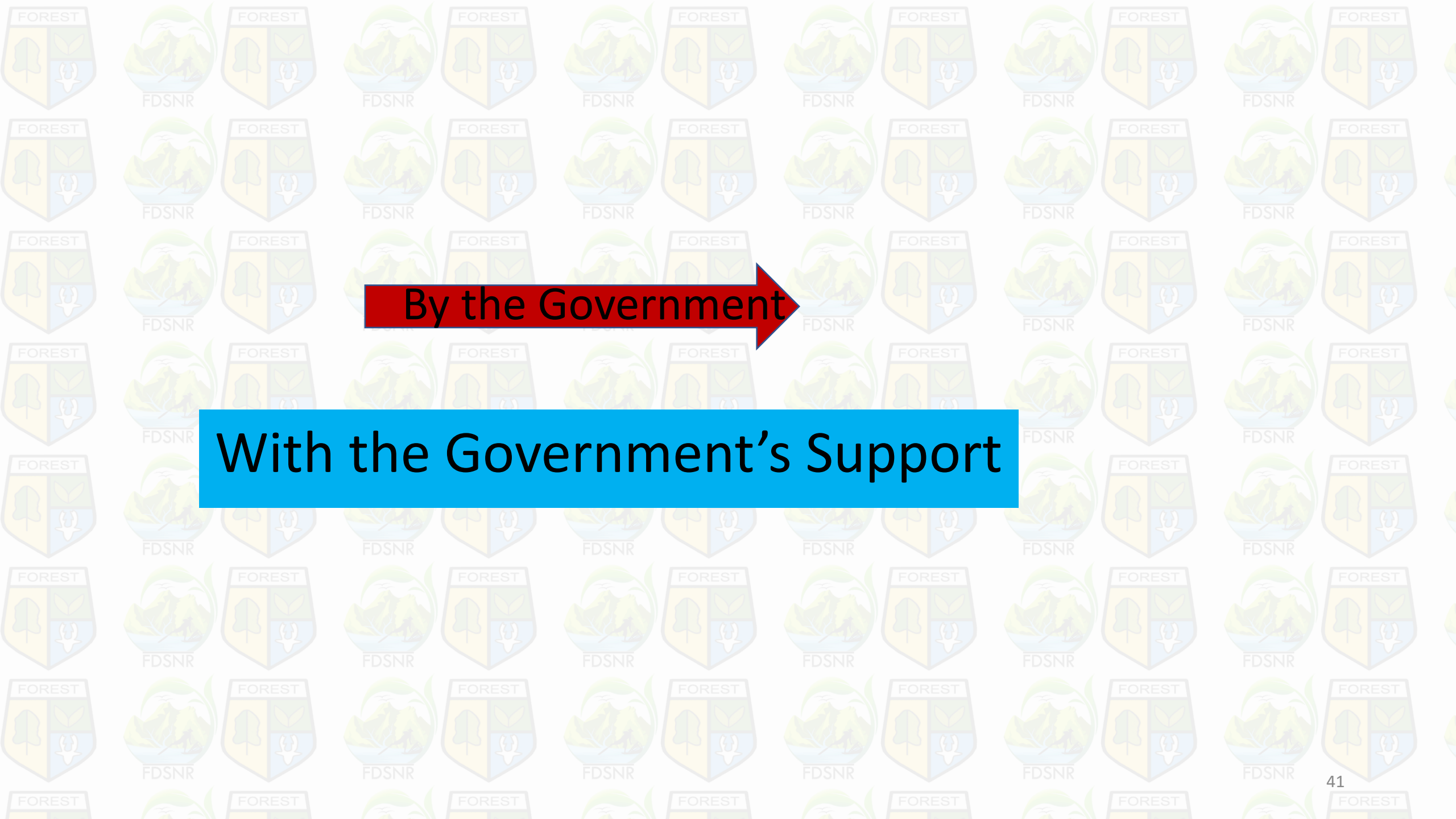
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By the Government

With the Government's Support

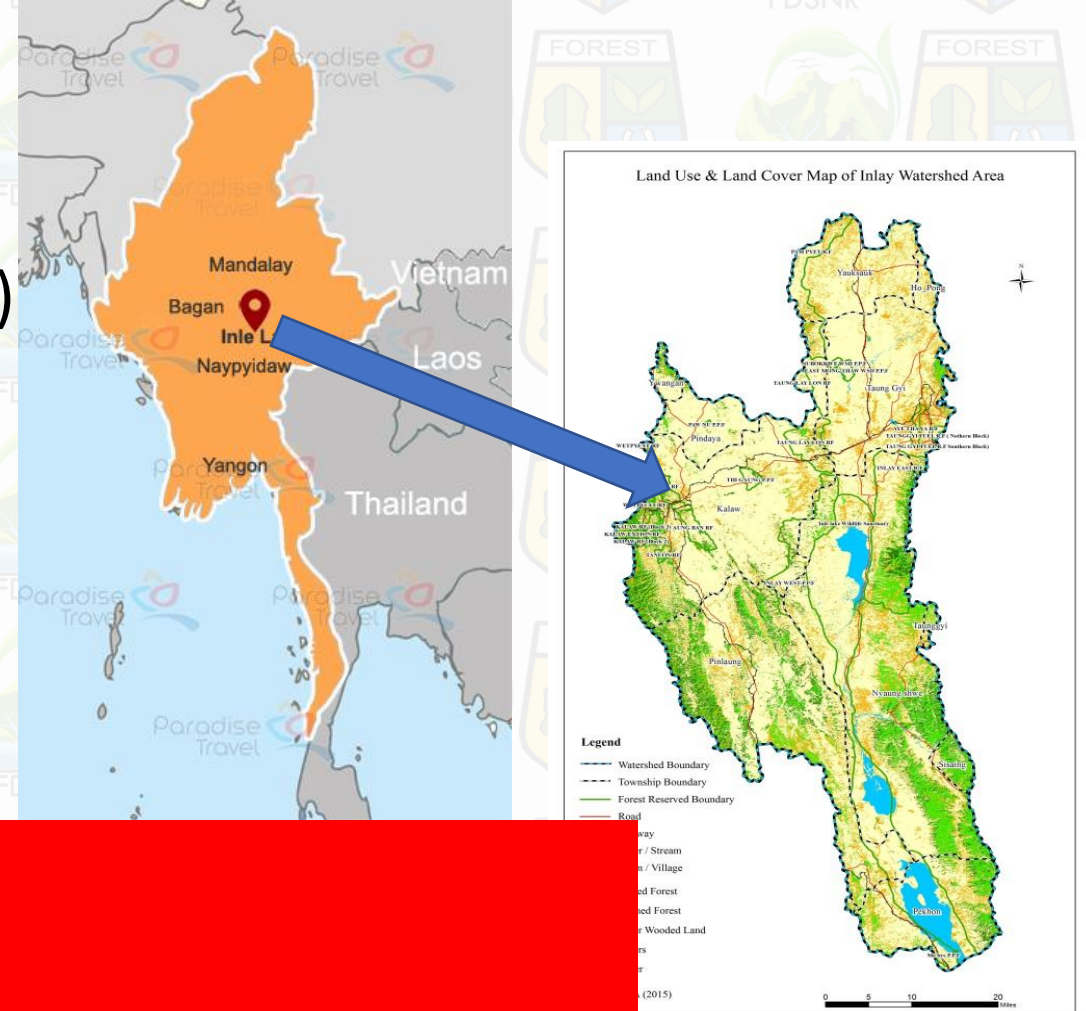
Background Information

- Project Title - Inle Watershed Restoration Programme (IWRP)
- Project Period - 30 years (From 2020 to 2050)
- Project Area - Inle Lake Watershed Area

2020 – 21 to 2029 – 30 (the first 10 year phase)
2030 – 31 to 2039 – 40 (the second 10 year phase)
2040 – 41 to 2049 – 50 (the third 10 year phase)

Long Term Vision

- ✓ Restore the ecosystem services of the lake for the sustainable socioeconomic development of the local people and for the sustainability of the lake.



History of the formulation of the IWRP



According to the guidance provided by H.E President of the Republic of the Union of Myanmar and the State Counsellor of the Country during their respective trips to Shan State by 2020, February 7th and 2020, February 13th, Inle Watershed Restoration Programme – IWRP was just recently developed to implement for 30 years.

Background Information



Monitoring Plan

- **A Programme Steering Committee - PSC** has recently been organized in order for the IWRP to be able to be smoothly implemented.
- Led by the Union Minister of MONREC as a Chair, the committee is composed of **Inle Lake Authority** who are the NREC Minister of Shan Government, Inthar Ethnic Affair Minister and Administrator of Shan GAD, and other related members, comprising altogether in total of **14** persons.

Forest Department's Expectations

- In addition to the watershed-related policy reviews, develop the **Watershed Policy, Laws and Guidelines**
- **Piloting JFM**
- **Payment for Ecosystem Services - PES scheme**
- As discussed in the FDSNR Project Seminar held in Myanmar on February 2020, follow up a wonderful case of **sister lakes** process for the Suwa lake in Japan and Inle lake in Myanmar.



Way Forwards

Integrating the two projects “FDSNR and IWRP” as a National Priority



A large flock of birds, possibly terns, is captured in flight over a lush, green forested landscape. The birds are scattered across the sky, with some appearing as dark silhouettes against the lighter blue background. In the foreground, a small, traditional-style building with a tiled roof is partially visible, nestled among the trees. The overall scene is serene and naturalistic.

Thank You for Your Attention