Forest and Floods

Hla Oo Nwe

Deputy Director, Design Branch

Irrigation and Water Utilization Management Department

Food, Water, Energy and Forest Nexus

Food – With the increase of world population growth, food security becomes important. To be able to achieve food security, it is needed to find better ways of multiple land use, which turns into the impact on forest

Water – Agricultural sector is the largest user of water resources and linked to the food security

Energy – Forests and energy are linked and Fire wood which come out from the forest may consider as a source of energy especially in the rural area

Forest – Healthy, productive and resilient forests are important fact of climate change mitigation

Main reason for Deforestation

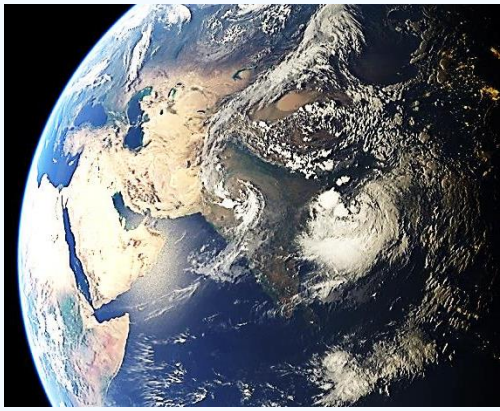
- Increase Population
- Fuel wood collection for energy
- Shifting Cultivation
- Expansion of Agricultural land
- Urbanization
- Poverty
- Logging
- Grazing
- Forest Fire
- Erosion
- Mining
- Climate Change (e.g. flood, drought)
- Construction of infrastructures
- Construction of Dam/Reservoir

Benefit of Reforestation

- Forest land absorb rain
- Refills underground aquifers
- Cools and Cleanses water
- Slow a Storm runoff
- Reduce flooding
- Sustains watershed stability and resilience
- provides critical habitat for fish and wildlife
- Water quality
- Water quantity

Year 2015 Flood in Myanmar

- Myanmar is one of the most vulnerable countries to climate change. Cyclone/storm hit almost every year since 2005.

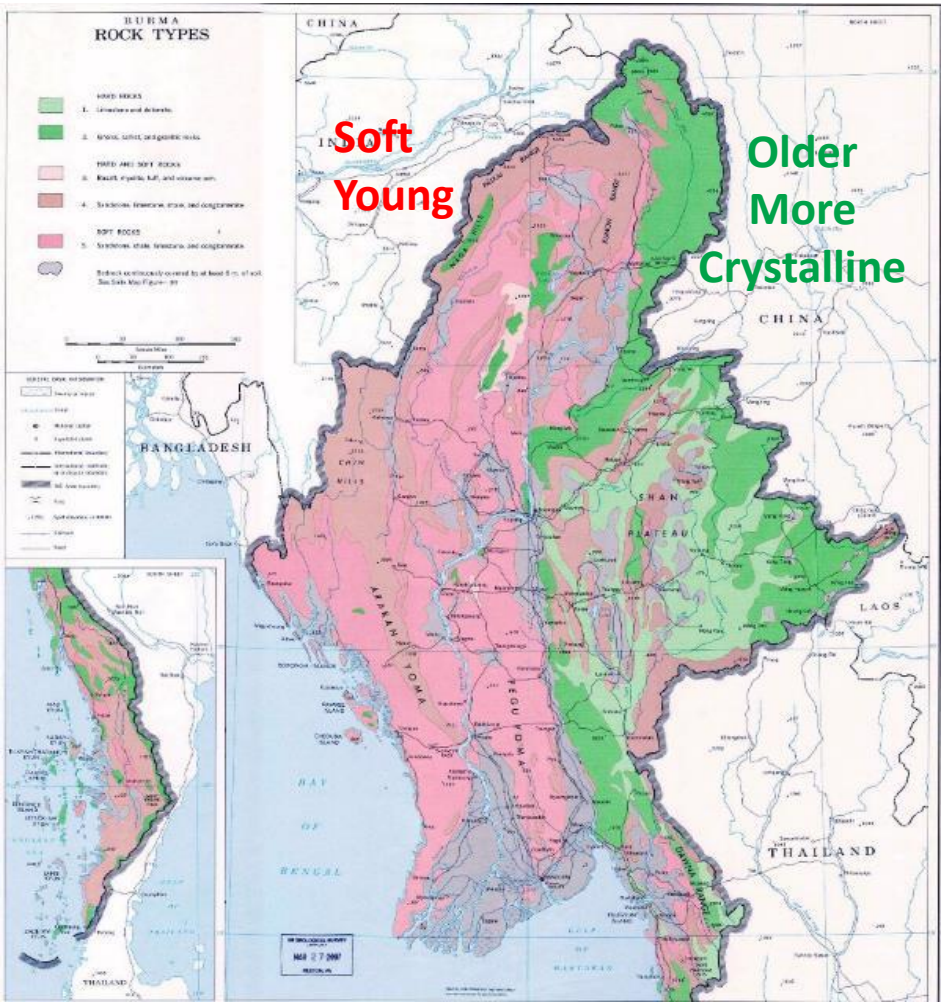


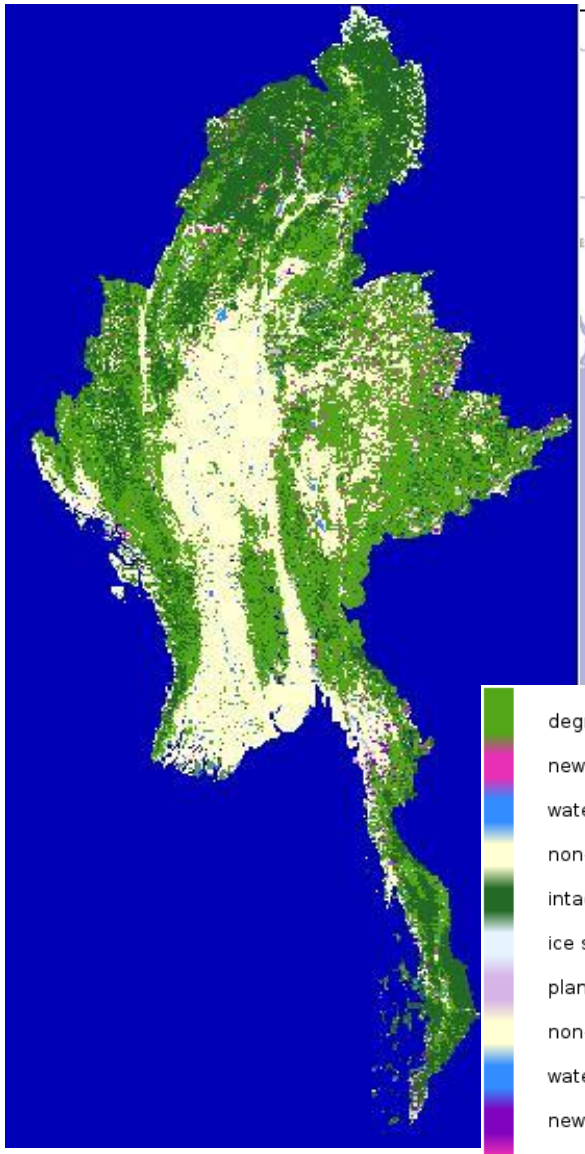
- Heavy rains and floods as a result of monsoon season occurred during the last two weeks of July 2015 in Sagaing Region. The high intensity of rainfall combined with flood waters moving southward put many areas at the stage of inundation.

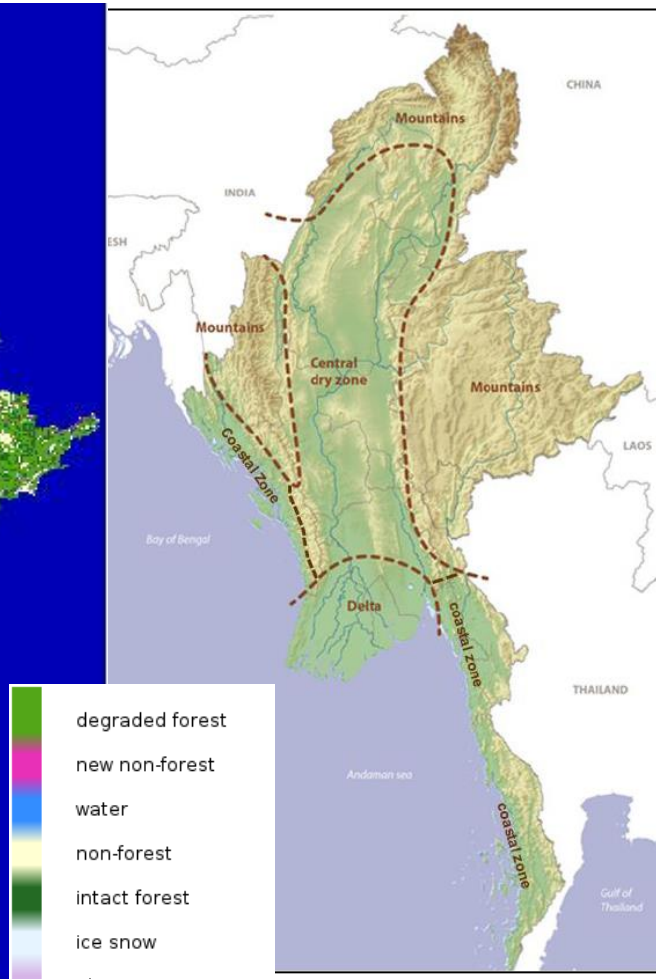
- On 30th July, Cyclone Komen made landfall in Bangladesh bringing strong winds and heavy rains to Myanmar, that severely affected in Minbu District, Magwe Region resulting abnormal floods at some of the dams, nearly overtopped but fortunately there was no mishap.

- On 31st July, The government declared Chin and Rakhine States, and Magwe and Sagaing Regions as natural disaster zones.

General geomorphological characteristic of Myanmar

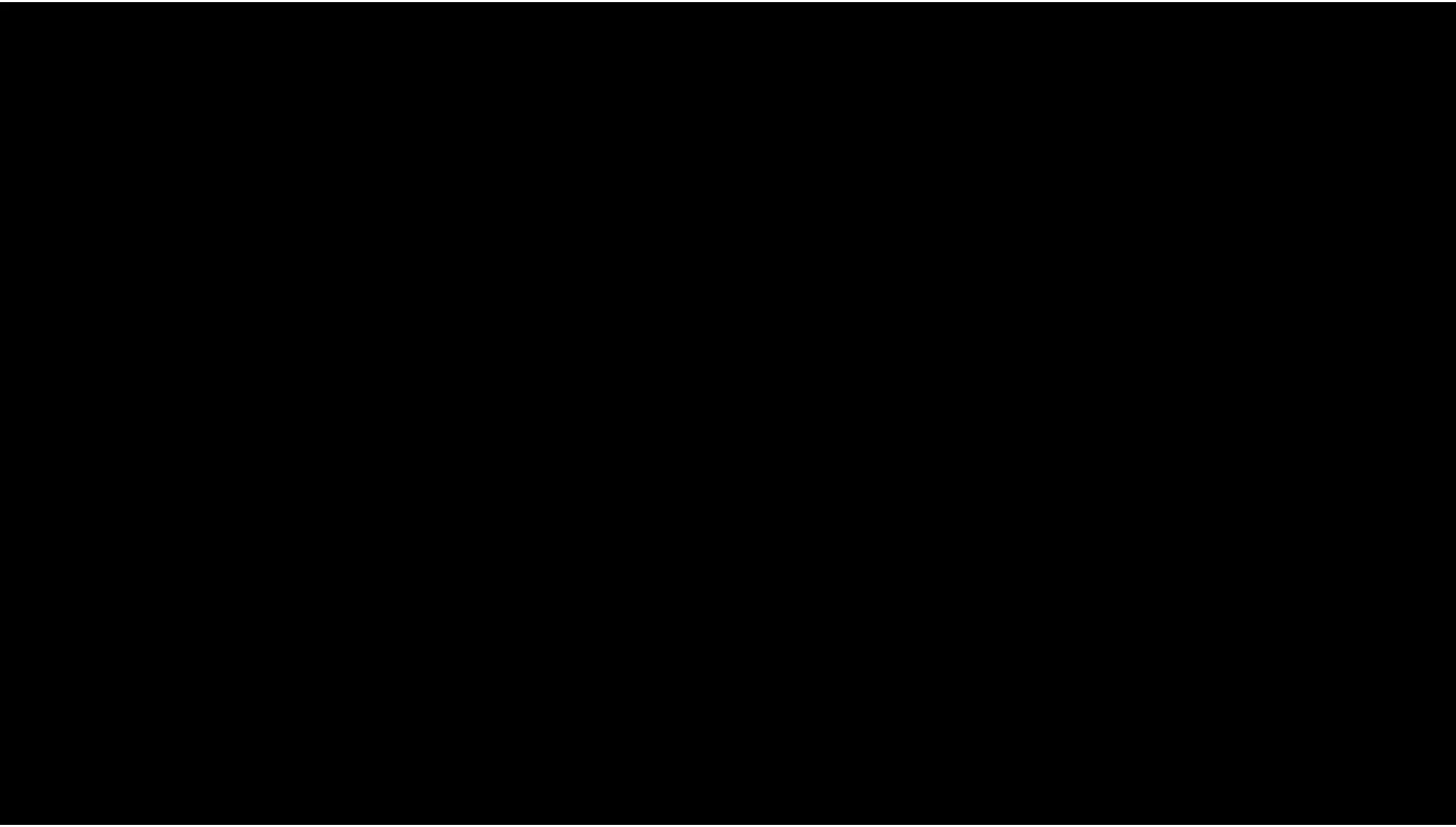




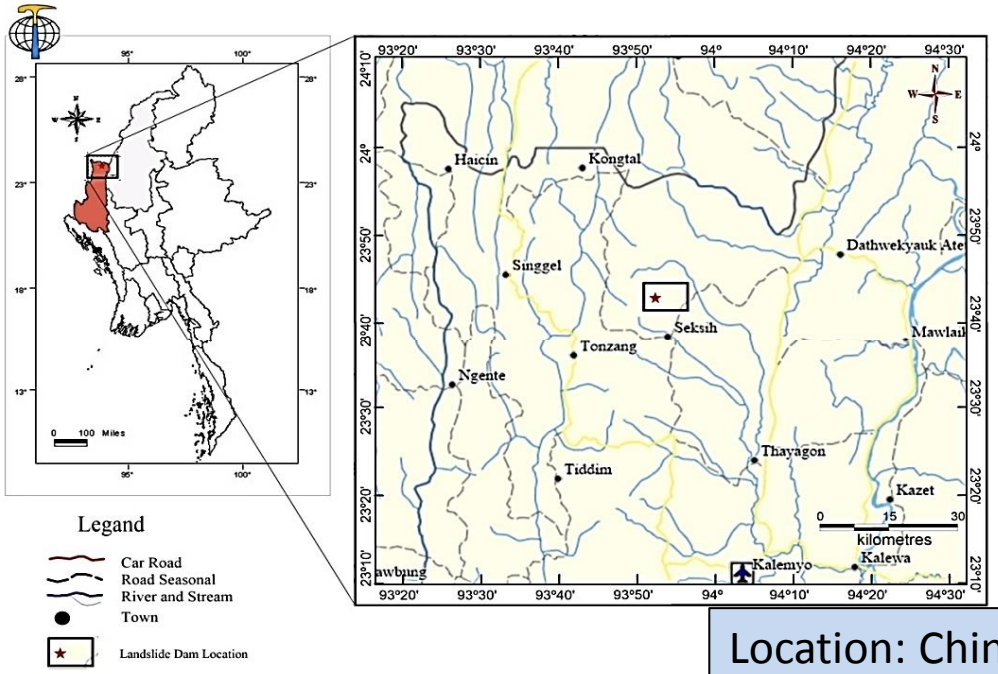


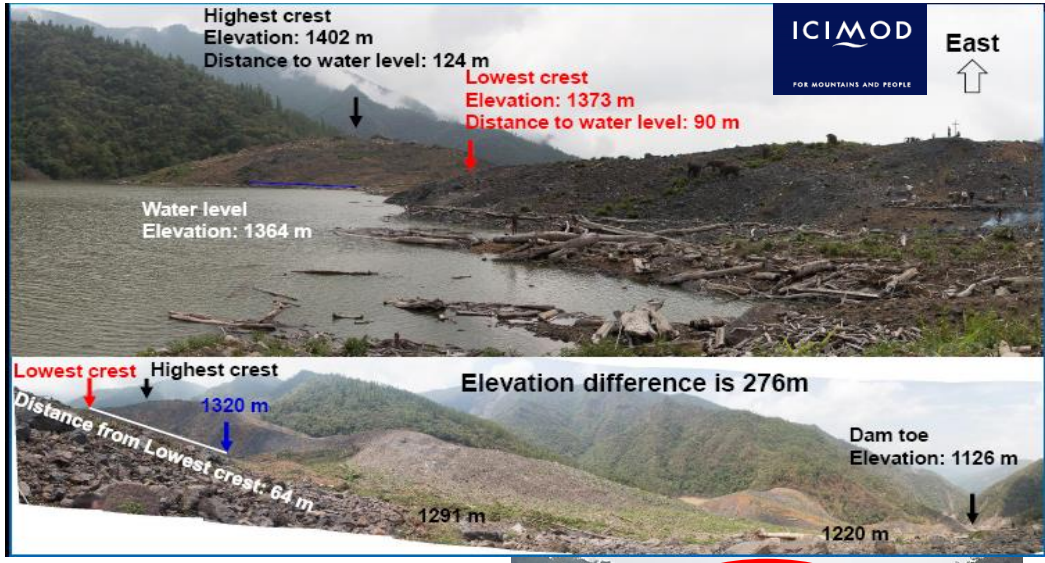
Source: EcoDev

Landslides in Chin State

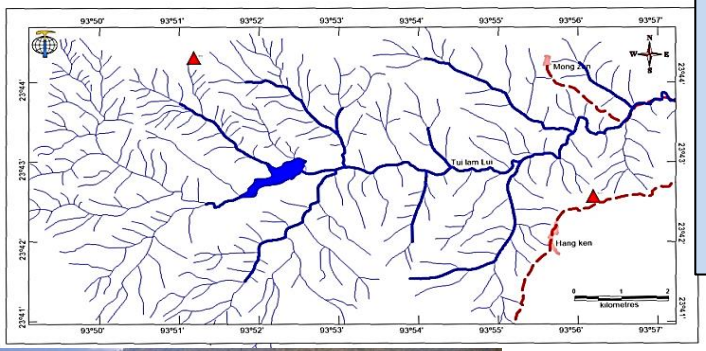


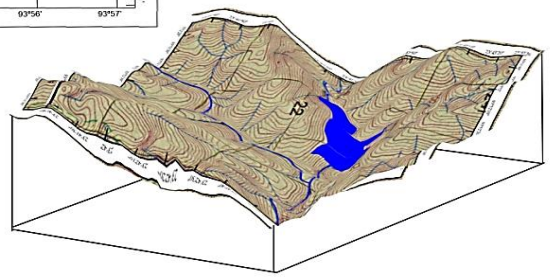
Landslide Dam at Chin State

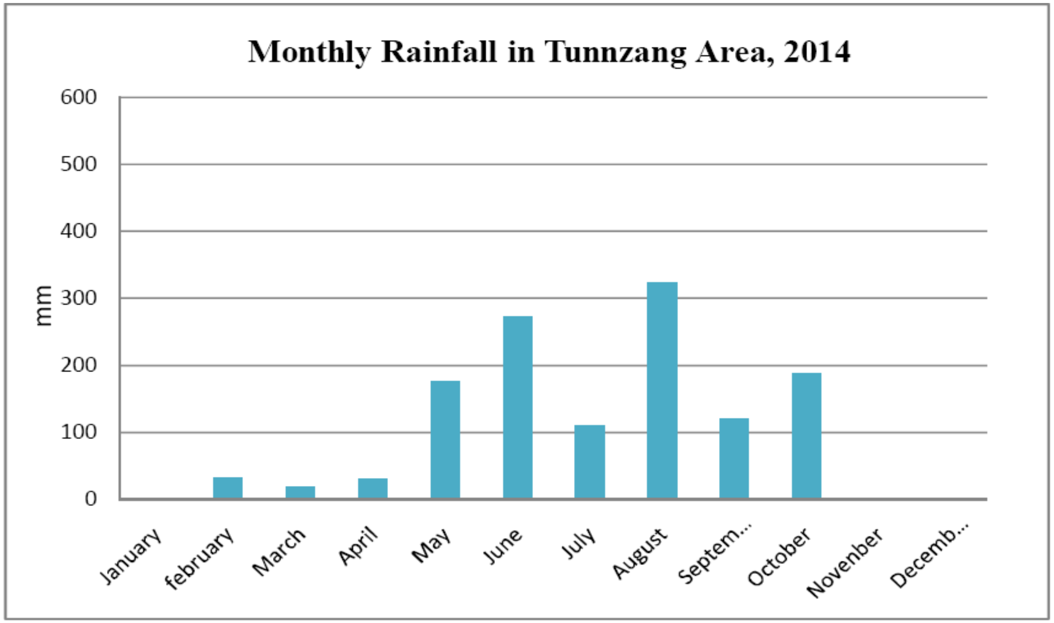




Location: Chin State, Tunn Zang township, 3 miles west of Han Kin village
Stream: Twe Lwe stream
Area: approx. 16 acres
Storage: approx. 1125 ac-ft






Monthly Rainfall in Tunnzang Area, 2014
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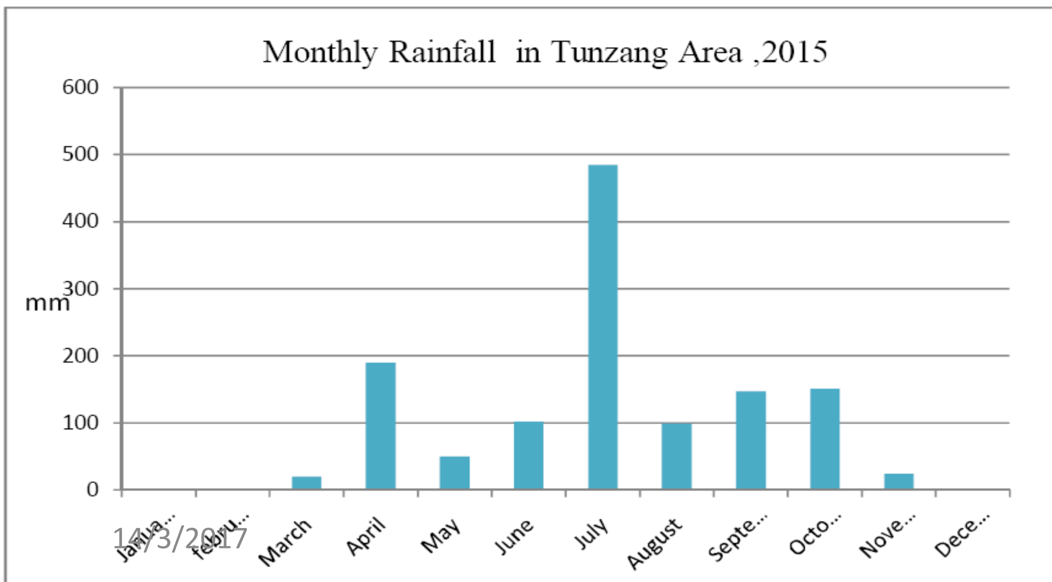
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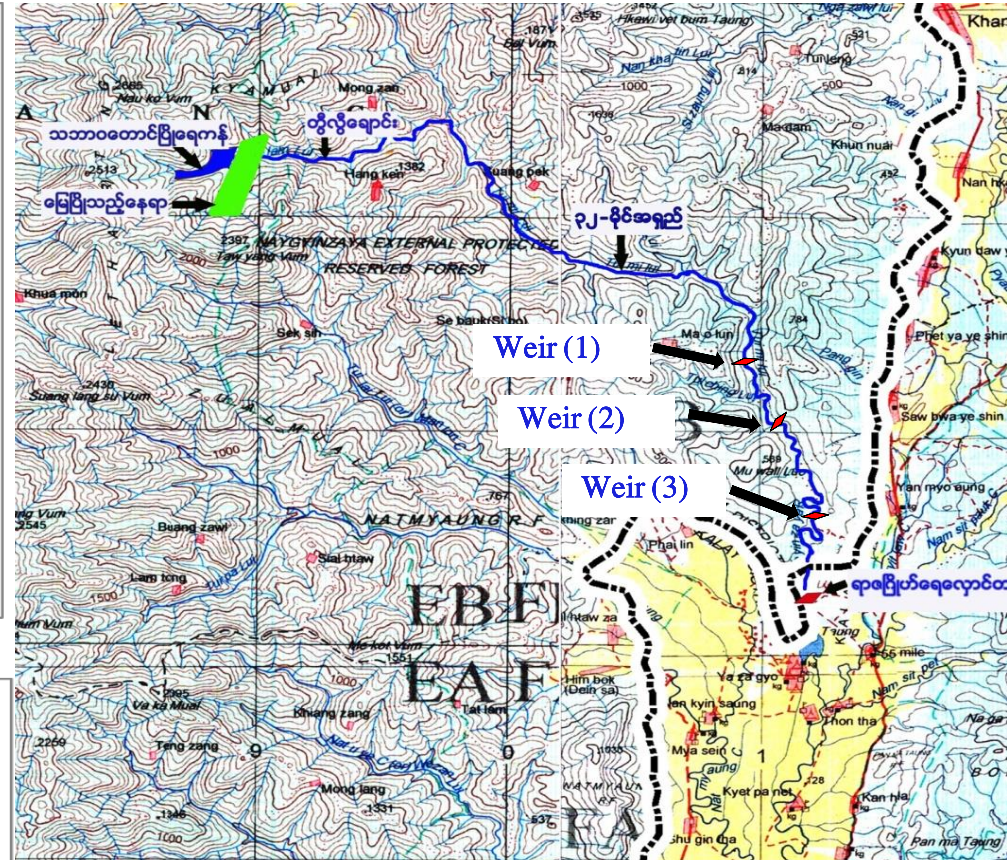
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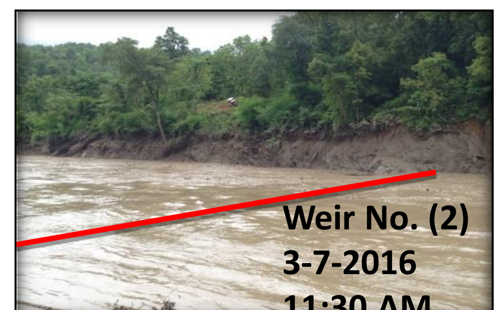
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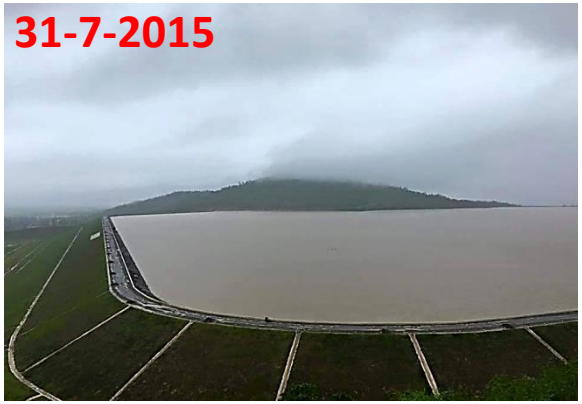
Yarzagyo Dam

- Dam located in Sagaing Region, Kalay Township, near Yarzargyo village
- Catchment area located in Tunn Zang Township, Chin State



Yarzagyo Multipurpose Dam

Source: Soe Min Lwin

Problems Identified after the 2015 Cyclone Komen Flood

- Landslide
- Landslide dam
- Debris Flow inside the reservoir
- Reservoir sedimentation
- Sufficiency of the outlet capacity from the reservoir
- Reasonable prediction of hydrological characteristics
- Early warning system

Challenges for the future

- Degradation of forest is one of the main causes for increasing erosion problem and it is compounded with heavy rain turns into rain induced landslide.
- Conservation of forest, reforestation activities and transforming agricultural practices such as shifting cultivation, slash and burn practice to good agricultural practices are necessary to make awareness and enforcement to the community level.
- Tackling of preventive measures against the debris flow into the reservoir.
- Reasonable prediction of rate of sedimentation in the reservoir.
- Insufficient available number of hydro-met stations especially in the catchment area to be able to achieve more accurate prediction of flood characteristics.
- Financial constraints to add on new auxiliary outlet facilities to be able to conform with newly introduce check flood concept.
- Weakness in early warning system concerning with landslide and flood disasters to inform to the community.

for your attention