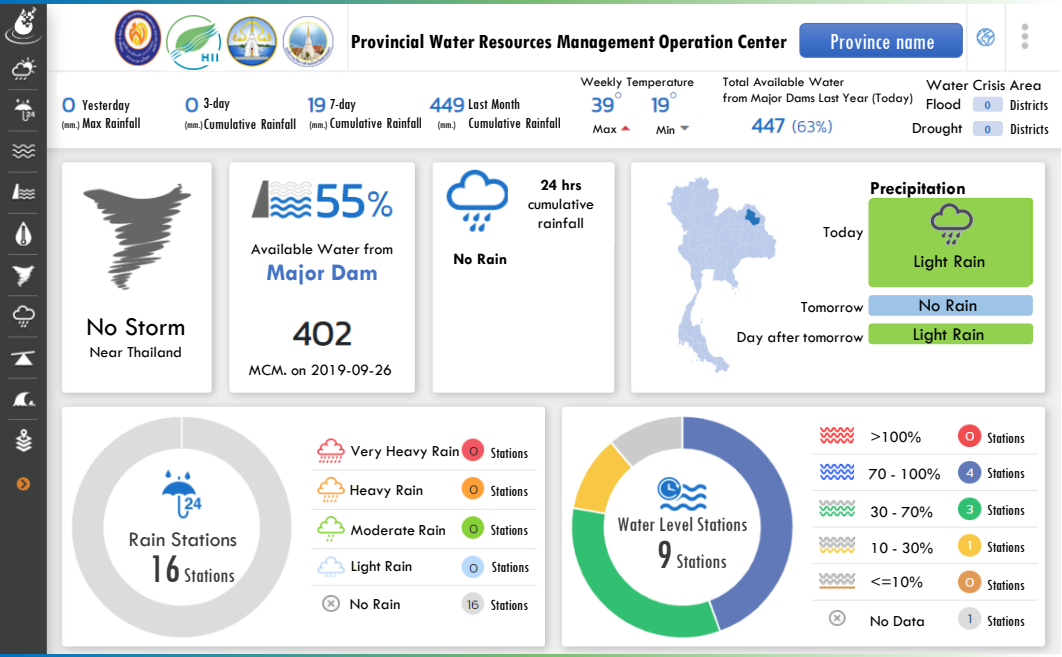


http://provinces.thaiwater.net

Provincial Water Resources Management Operation Center:

The Missing Link for Local Resilience

Dr. Sutat WEESAKUL

Director

Hydro – Informatics Institute (Public Organization),

Ministry of Higher Education, Science, Research and Innovation, Thailand

HII Hydro – Informatics Institute

Collaboration: HII, National Farmers Council, and Lao PDR

Provincial Water Resource Management Operation Center

HII

- Technology GIS
- Sub-district water stream maps
- Data of water sources and soil series
- Data of water resource development project
- Satellite image maps ThaiCote/Google Earth
- Topographical maps and land use maps
- Informatics data analysis for final development plan

National Farmers Council

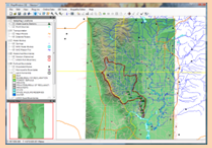
- Crop data
- Land use data
- Water usage data for agriculture
- Agricultural land allocation data

Local Administrative Organization

- Water sources/ reservoir data
- Plans of water sources development project
- Data of water sources development project from local agencies

Crop maps for appropriate agricultural planning

Plans of water sources development projects



Provincial Water Resources Informatics Operation Center

Management

Risk management during normal and crisis situation

Planning

Water resources development project and allocating the fiscal budget of water resources development

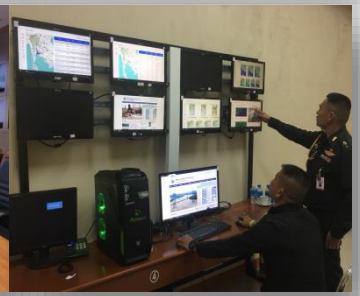
Monitoring & Evaluation

Project progress and expansion of successful project

Disaster Risk Reduction

Sustainable On Water – Food - Economic

Provincial Water Resource Management Operation Center



01 Provincial Water Resource Management Operation Center by National Farmer Council — **20** Centers

02 Regional Water Resource Management Operation Center by Army Area — **3** Centers

03 Provincial Water Resource Management Operation Center by Provincial Administration Organization — **5** Centers

04 Basined level Water Resource Management Operation Center — **1** Centers

Total **29** Centers

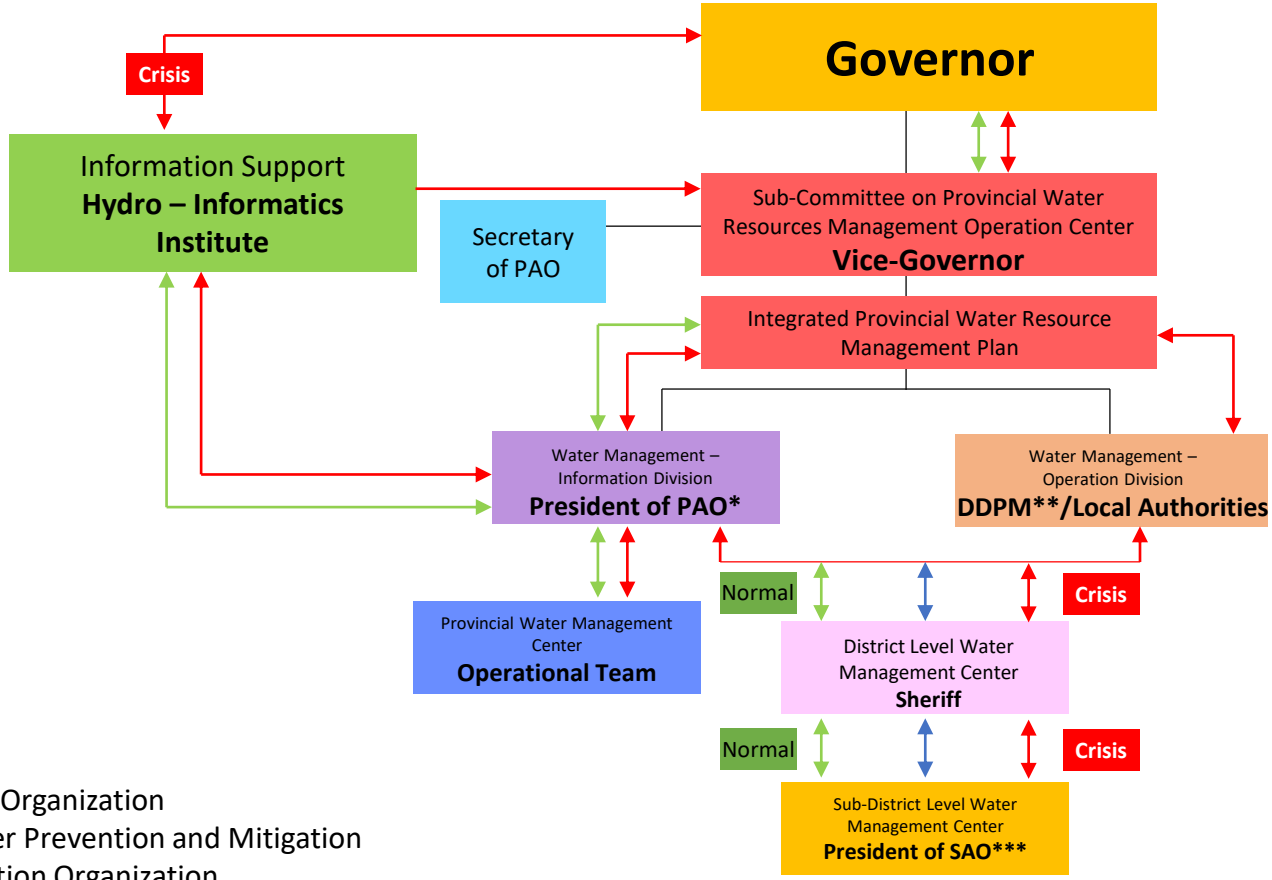
Phrae Province

Water Resource Management Operation Center

Phrae Province Water Resource Management Operation Center

Organizational Structure

Phrae Water Resources Management Center

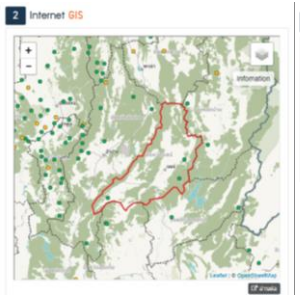


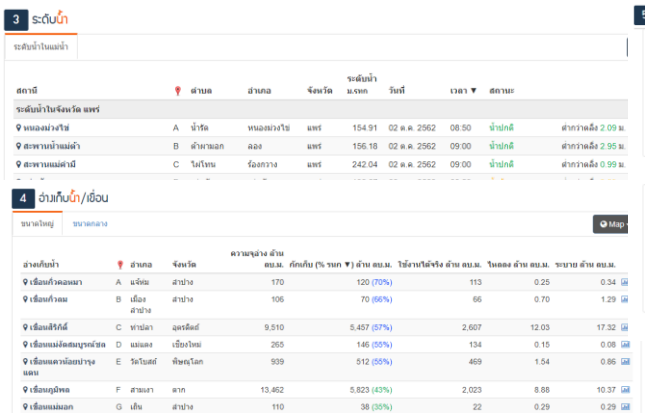
*PAO = Provincial Administration Organization
**DDPM = Department of Disaster Prevention and Mitigation
***SAO = Sub-district Administration Organization

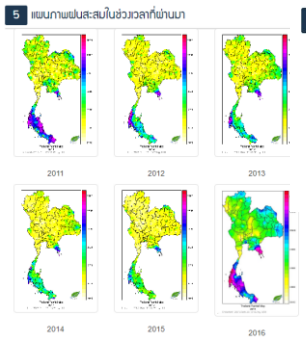
Phrae Province Water Resource Management Operation Center

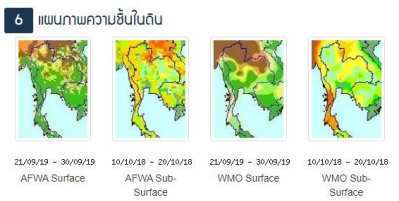
http://nhc.in.th/phrae.html

1. Precipitation
2. Internet GIS
3. Water Level
4. Dam Level
5. Comparison of Cumulative Rainfall
6. Soil Moisture



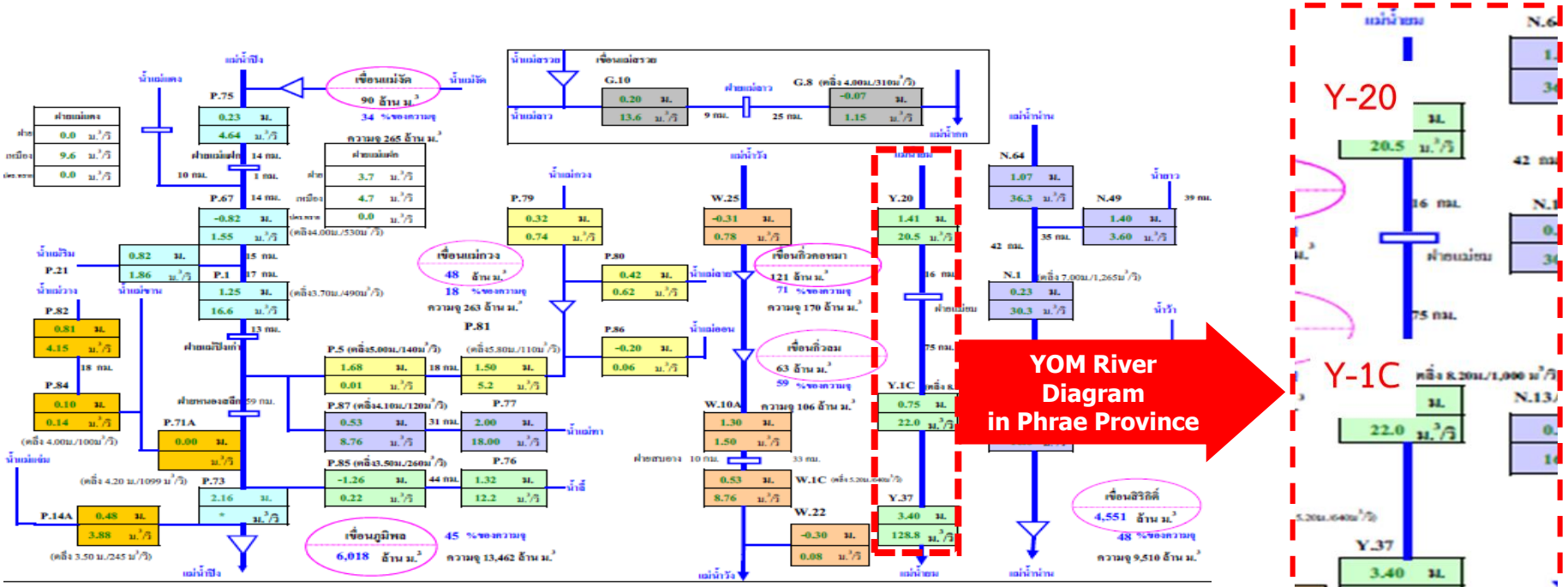






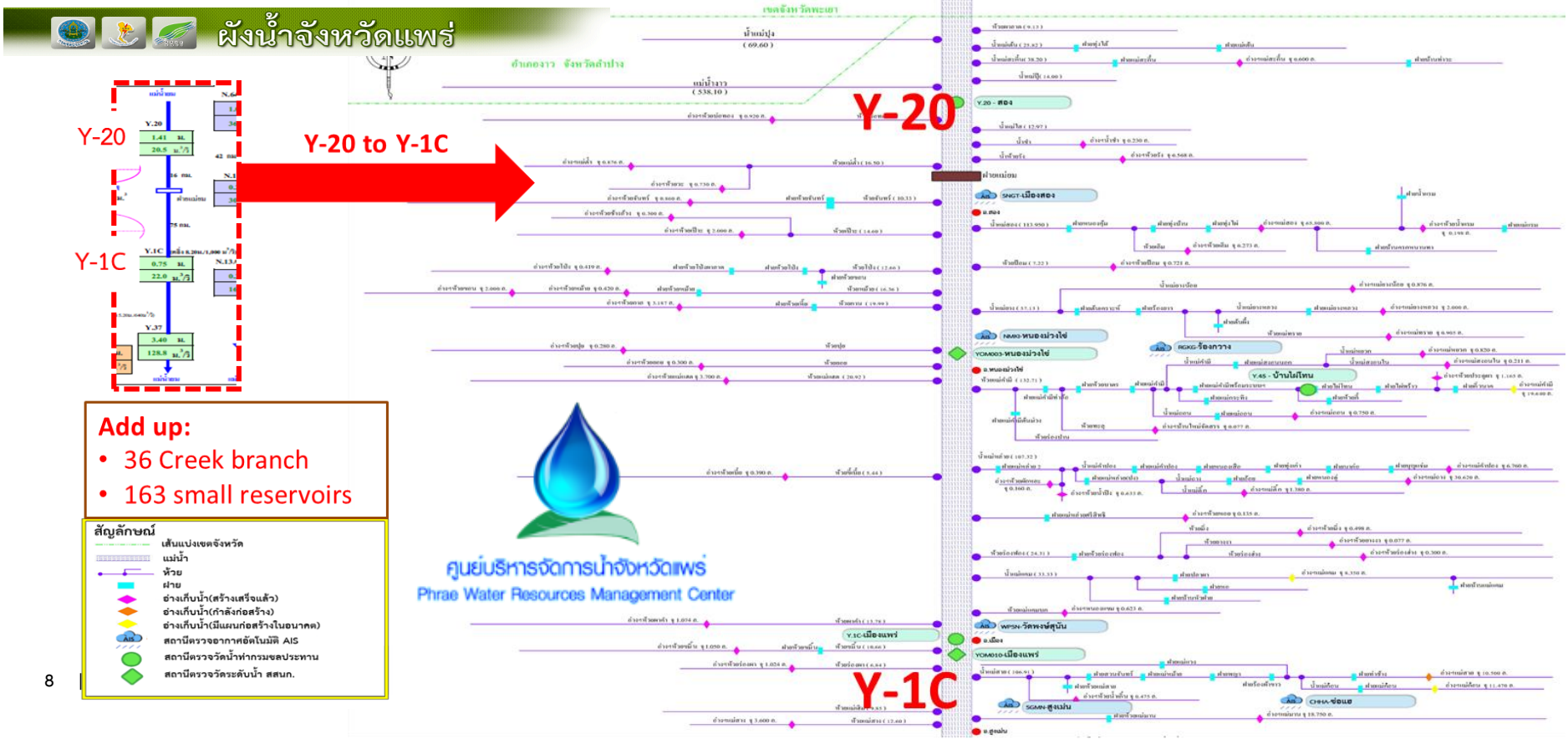
Phrae Province Water Resource Management Operation Center

YOM River Diagram by Government Agency



Phrae Province Water Resource Management Operation Center

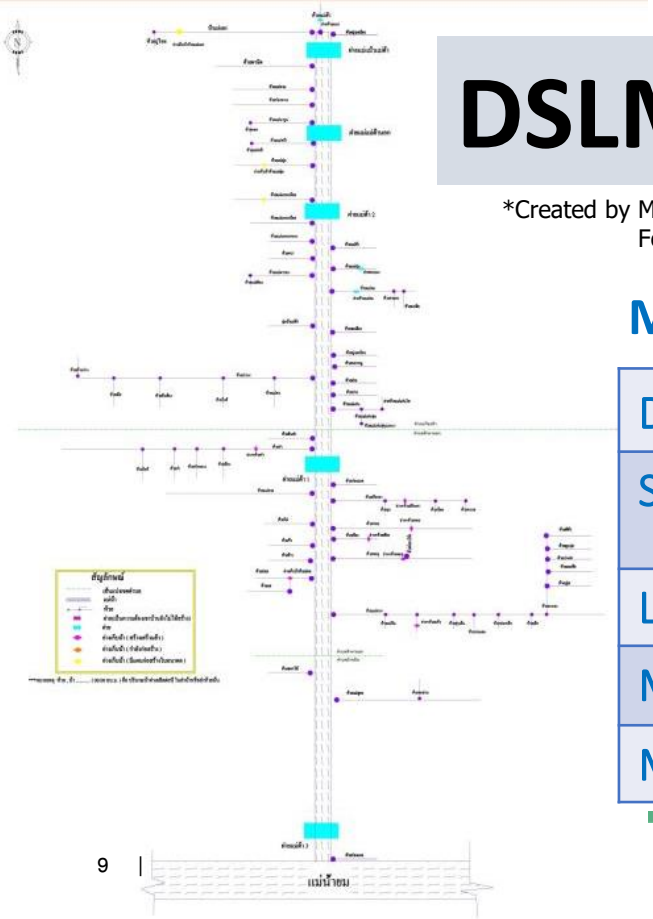
YOM River Diagram by Phrae Province Water Resource Management Operation Center



Add up:

- 36 Creek branch
- 163 small reservoirs

Phrae Province Water Resource Management Operation Center



DSLMM

*Created by Mr.Apichat Todilokvech
Former Phrae Governor

Water Resource Management aims to create understanding of local people about their water supply, water demand, waterway in the area, sustainable management using water table, and identify source of budgeting for management

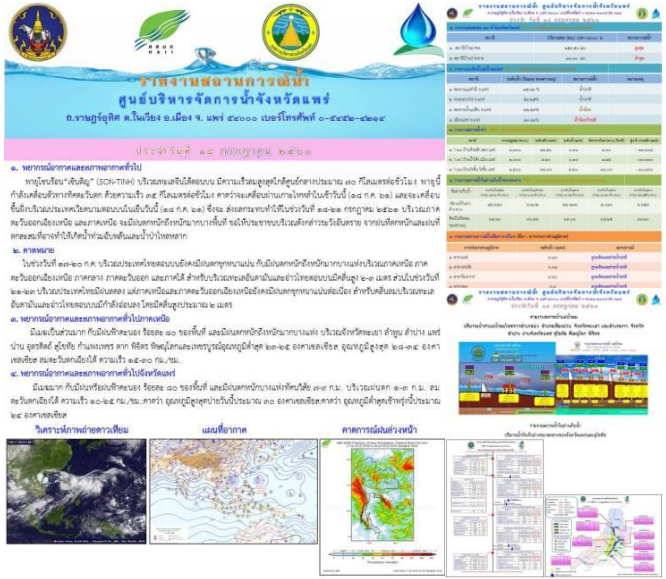
Maeta Water Balance

Located in **3 sub-districts** are;
Wiang Ta, Ta Pha Mok and Ban Pin Sub-district

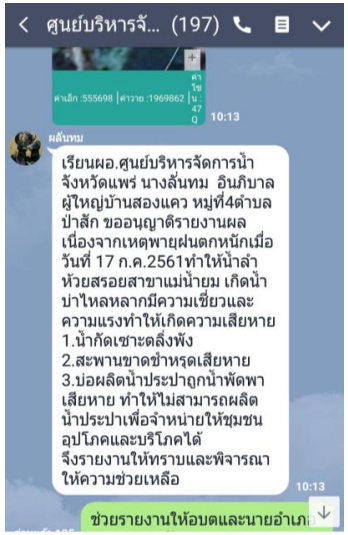
D Demand	Water demand for agriculture and consumption 57,288,449 m^3/year
S Supply	Runoff amount 146,000,000 m^3/year 9 Small reservoirs contain 2,473,000 m^3/year
L Logistic	Sub-district water diagram
M Management	Amount of water management, reserve water 54,815,449 m^3/year
M Money	Budget planning

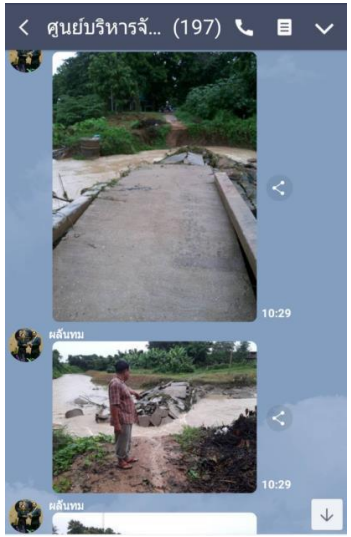
Phrae Province Water Resource Management Operation Center

Water Situation Daily Report

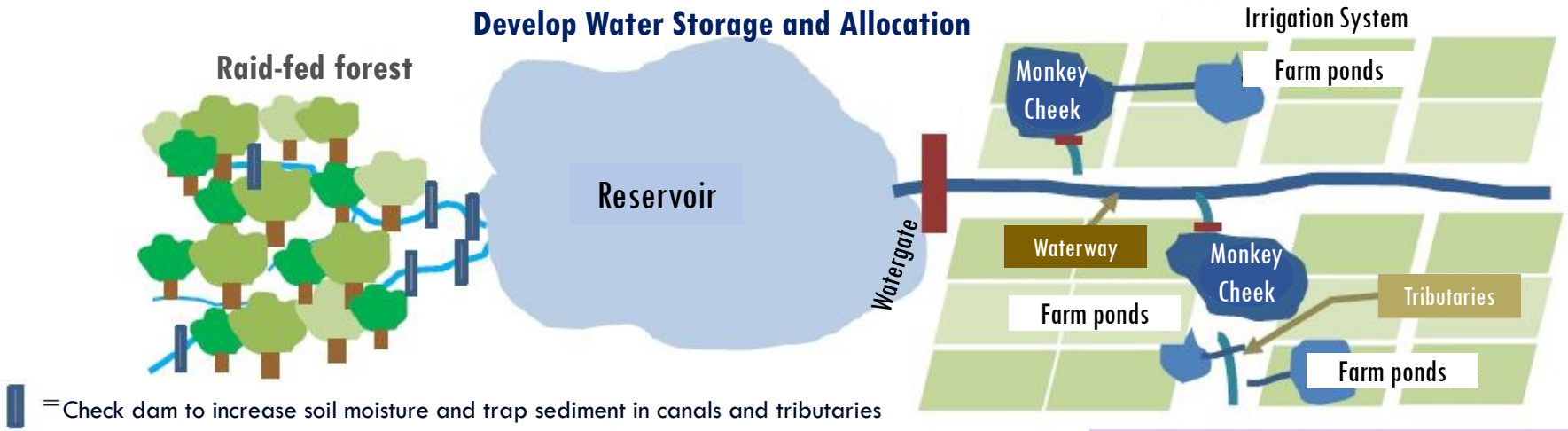


Weather notification via LINE app. during crisis





Principle of Small Reservoir Development Plan at Community Level



Development Plan: Small Reservoir Management

Development Plan: Small Reservoir Management

1. **Reforestation** by building check dams and sediment traps along the main and tributaries to **increase water capital of reservoir**
2. Rehabilitate existing infrastructure to increase capacity and manage **allocation for consumption and agriculture**
3. **Link irrigation system** to store excess water in monkey cheek and farm pond for **yearlong agriculture**

Expansion of Good Practices "Mae Chua Reservoir"

Integrated work between **provincial, local, and community**

1. Expand the good practices of small reservoir management – **Mae Chua Reservoir, Mae Chua** sub-district**, Denchai** district**, Phrae** province
2. Set rules and regulations for water management and maintenance

Small Reservoir Development Plan at Community Level: Good Practices

OUTCOME

Water Resources Development Plan at **Mae Chua reservoir,** Phrae Province

Consumption

3 Villages

Households 1,016

1,273 People

Agriculture

10 Villages

Area 28.6 m^2

Water Security

Increase **721,500 m^3**

Flood & Drought Mitigation

- Solve **10-year problems**
- Benefit agricultural area **6.4 M. m^2**

Expansion

390 households
3.74 mil. m^2

Ban Mai Jadsan
Denchai dist.

Mae Kamin,
Wangchin dist.

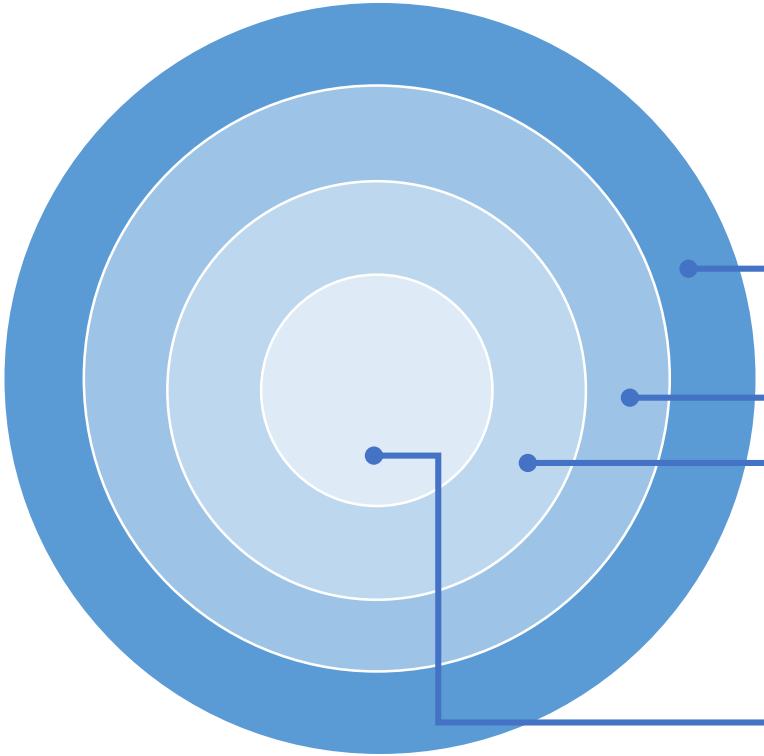
Food Security

13 households

Income ↑ 20,660 ฿/y

Expense ↓ 60,667 ฿/y

Water Resource Management at All Levels



Regional level

(AHC: ASEAN Hydroinformatics Data Center - AHC)

National level

(NHC: National Hydroinformatics and Climate Data Center) Function

Provincial level **Linkage**

(Provincial Natural Resources Informatics Operation Center)

Community level Action

(CWRM: Community Water Resource Management)

Summary of Provincial Water Resource Management Operation Center

LINKAGE

between
Function from
Policy level
and
Action from
Practitioners

OWNERSHIP

Create sense of ownership and responsibility of local villagers

EXPANSION

Expand the good practices of the integration to other provinces

Hydro – Informatics Institute

Hydro – Informatics Institute (Public Organization)
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