

# FED Triangle, a new hope of Water Resources Management in the Northeastern Region, Thailand.



1<sup>st</sup> Rhine-Mekong Symposium

“Climate change and its influence on water and related sectors”

8-9 May 2014, Koblenz, Germany

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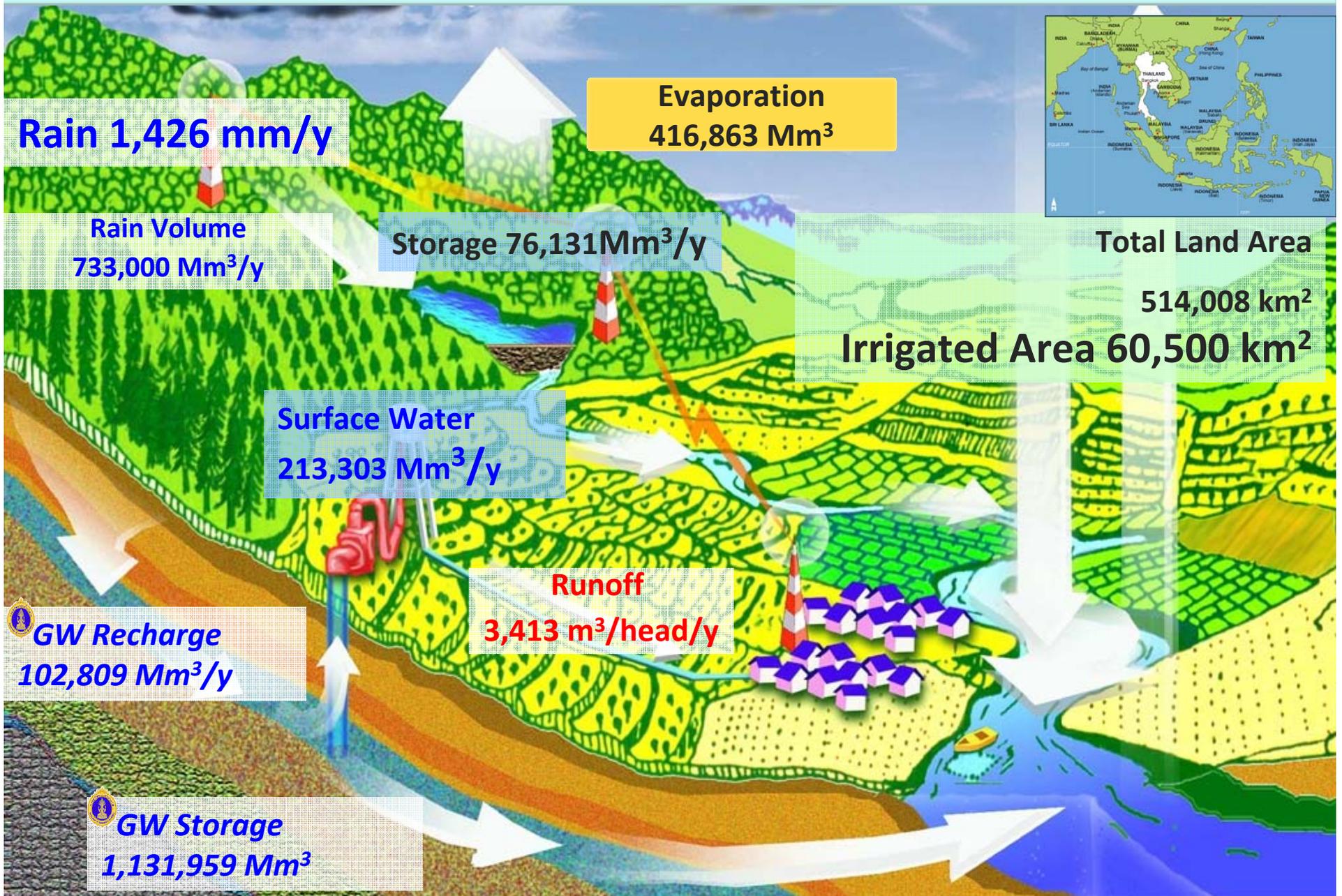
# Contents

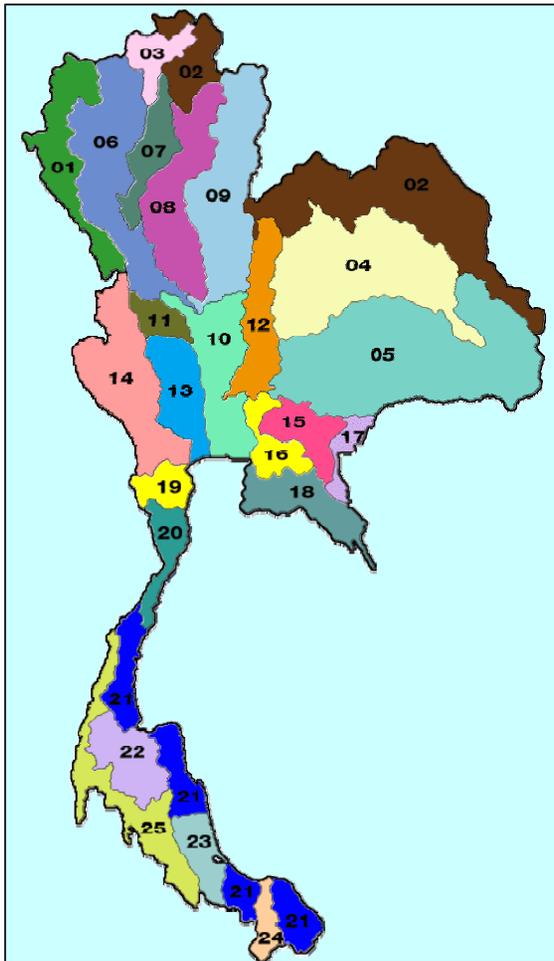


- Current Situation of Water Resources in Thailand and the Northeastern Region of Thailand
- FED Triangle, a new hope of Water Resources Management in the Northeastern Region, Thailand.



# Current Situation of Water Resources in Thailand

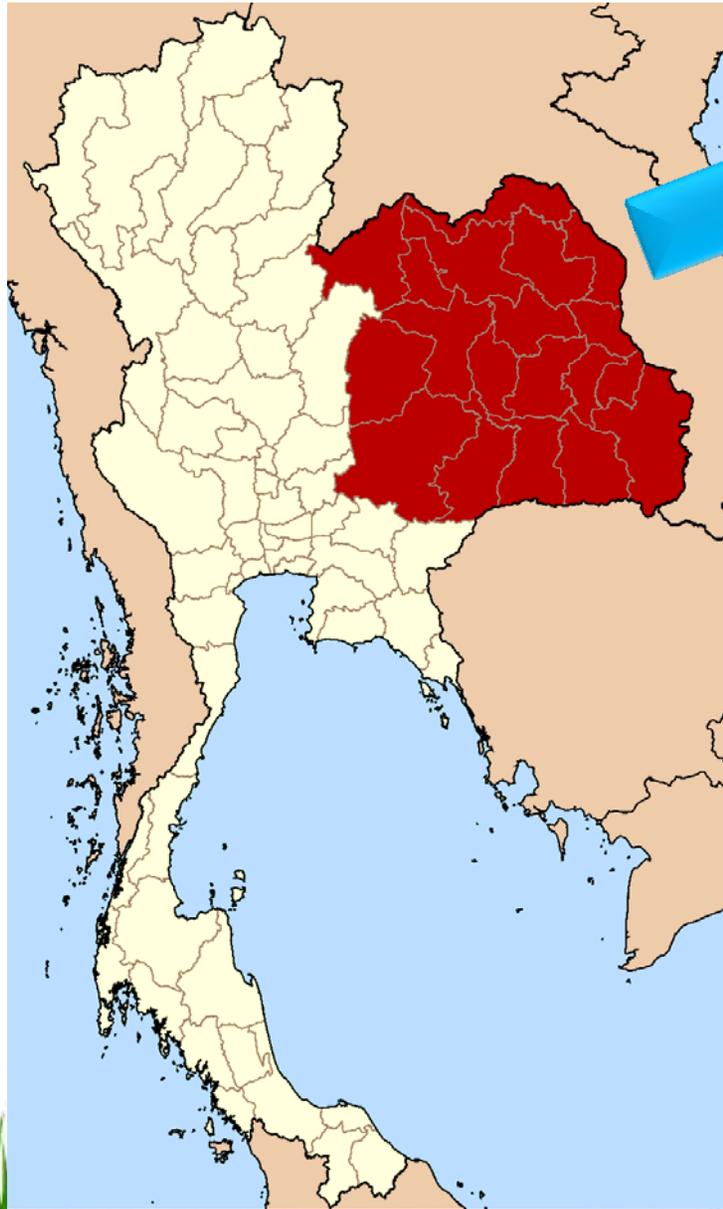




## 25 River Basins in Thailand

|                 |                        |
|-----------------|------------------------|
| 1.Salawin       | 14.Maeklong            |
| 2.Khong(Mekong) | 15.Prachin             |
| 3.Kok           | 16.Bangpakong          |
| 4.Chi           | 17.Tonlesap            |
| 5.Mun           | 18.Eastern Coast       |
| 6.Ping          | 19.Petchburi           |
| 7.Wang          | 20.Western Coast       |
| 8.Yom           | 21.Eastern South Coast |
| 9.Nan           | 22.Tapee               |
| 10.Chaopraya    | 23.Songkla Lake        |
| 11.Sakaekrang   | 24.Pattani             |
| 12.Pasak        | 25.Western South Coast |
| 13.Thachin      |                        |

## BACKGROUND



### Northeastern Thailand

#### Vital statistics

1. Area covered :  $\approx \frac{1}{3}$  of country  
(169,000 km<sup>2</sup>)
2. Population :  $\approx \frac{1}{3}$  of country (21.6 million)
3. Gross Regional Product : 10.5% of the country (Poorest)
4. Irrigation area : 1.2 million hectares
5. Rain fed agricultural area : 11.2 million hectares



**Floods**



**Deforestation**



**Problem**

**Dry season water shortage**



**Soil salinity**



**Drought**



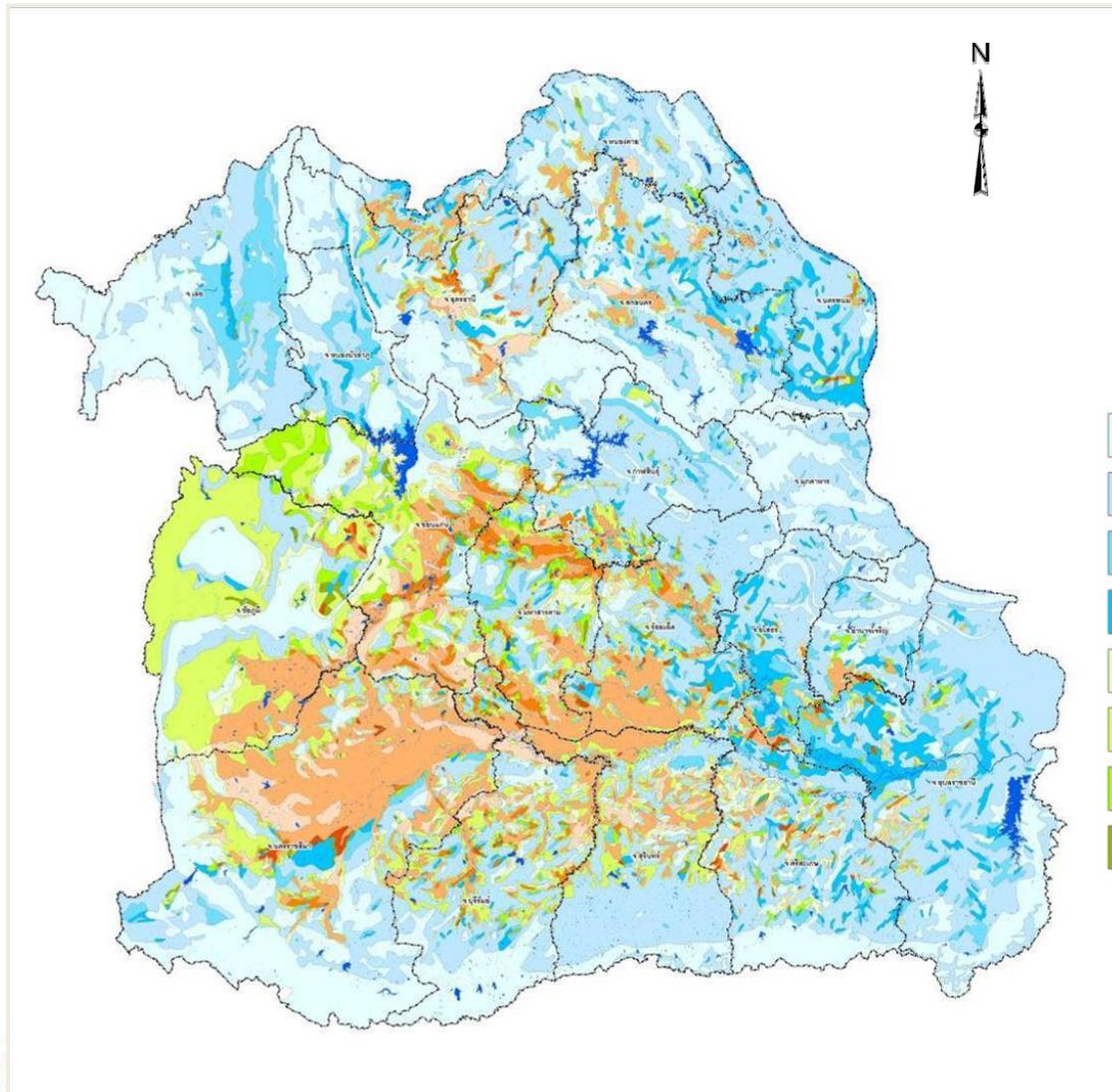
**Socio-economic**

- Average family income : Lowest of the country

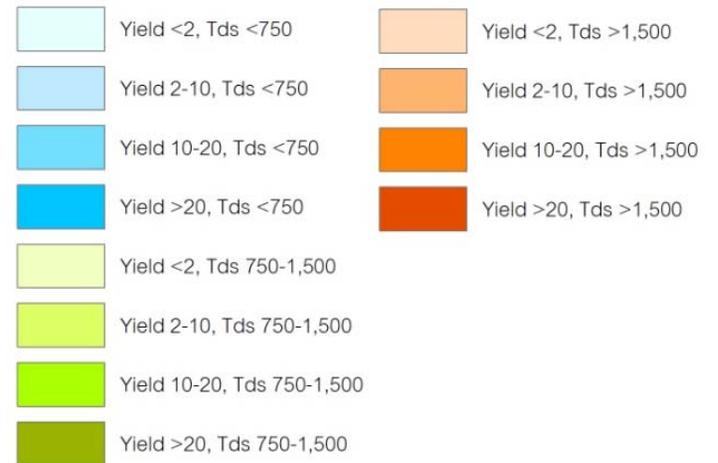
- Labor migration : Social problem in big



# Map of Groundwater Resources in Buriram Province

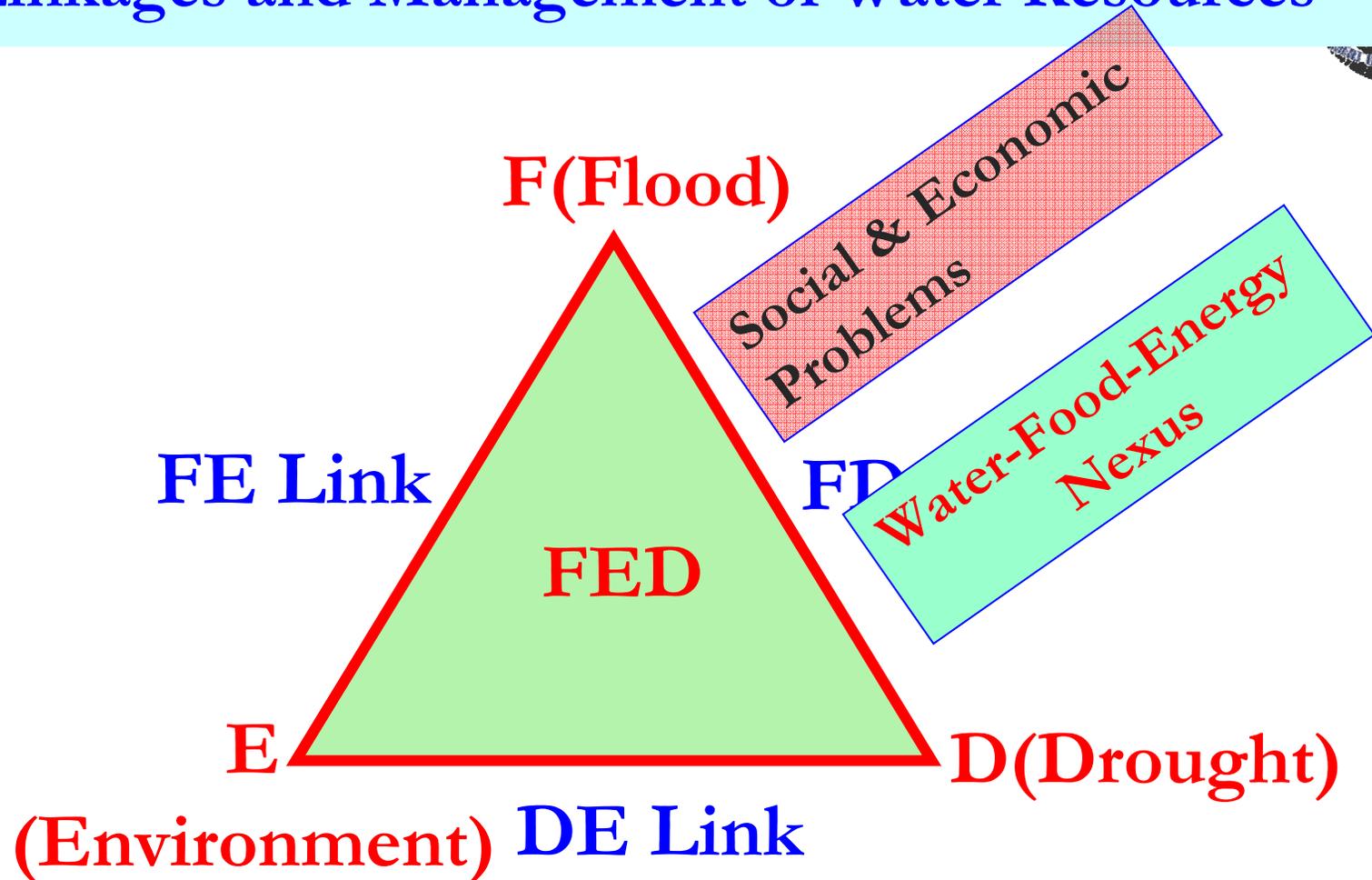


## Yield(cu.m/hr) & TDS(mg/L)



# FED Triangle:

## Linkages and Management of Water Resources



# Management of Dual Water Sources

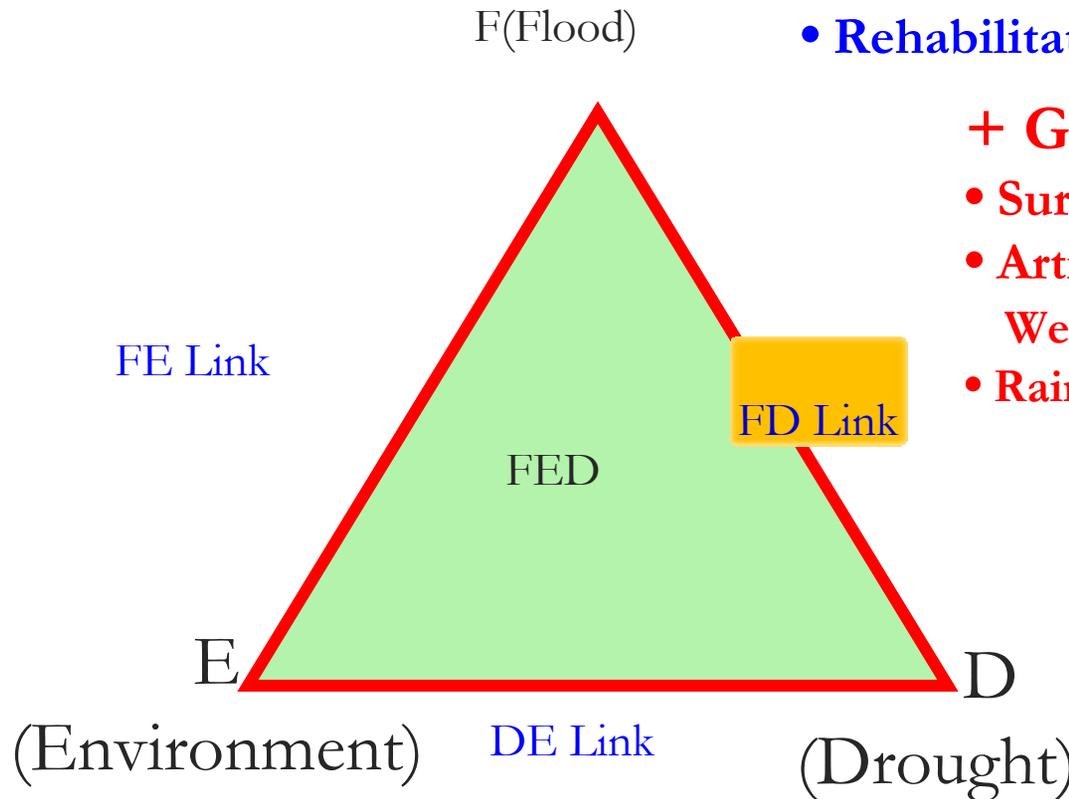


## + Surface Water :

- Dam, Reservoir, Retention area, etc
- Rehabilitation

## + Groundwater :

- Survey & Development
- Artificial Recharge(AR) in the Wet period
- Rain harvesting & AR



## CUP(Conjunctive Water Use Program)

- + Concept of CUP
- + People participation: data, Capacity building,..

## FED Triangle:

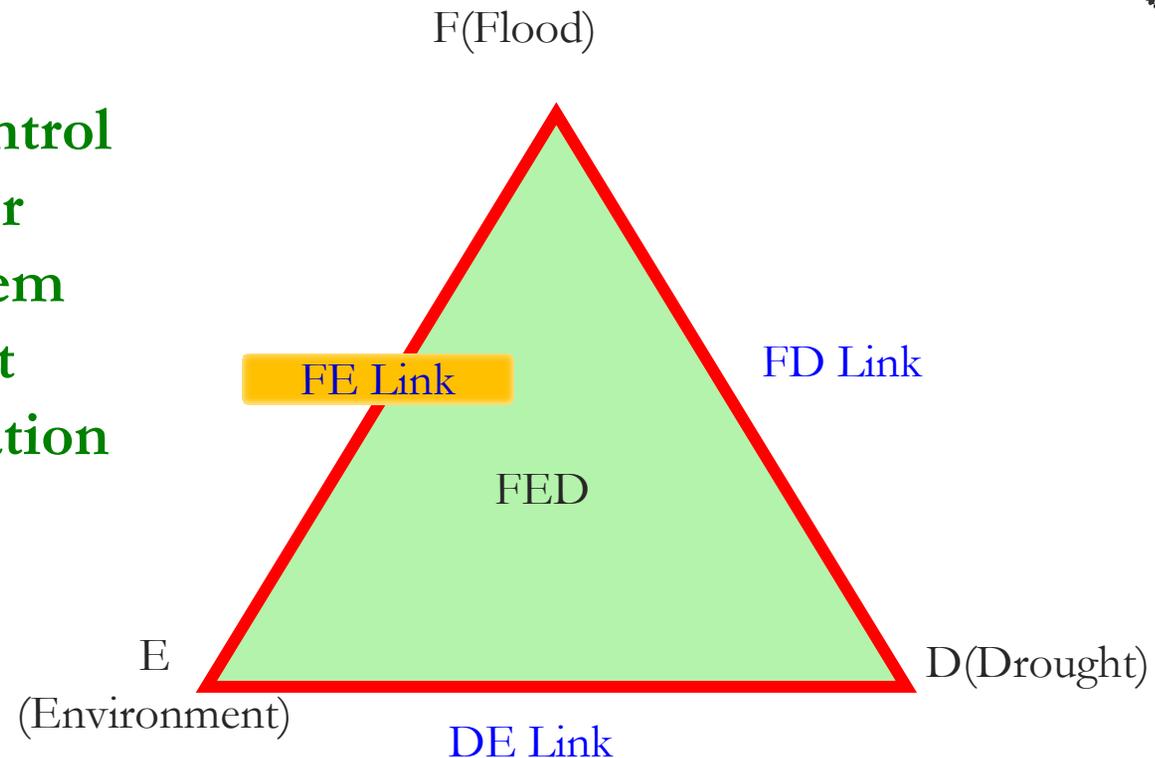
Linkages and Management of Water Resources

Chaiporn Siripornpibul, 2013



## Water Quality Control

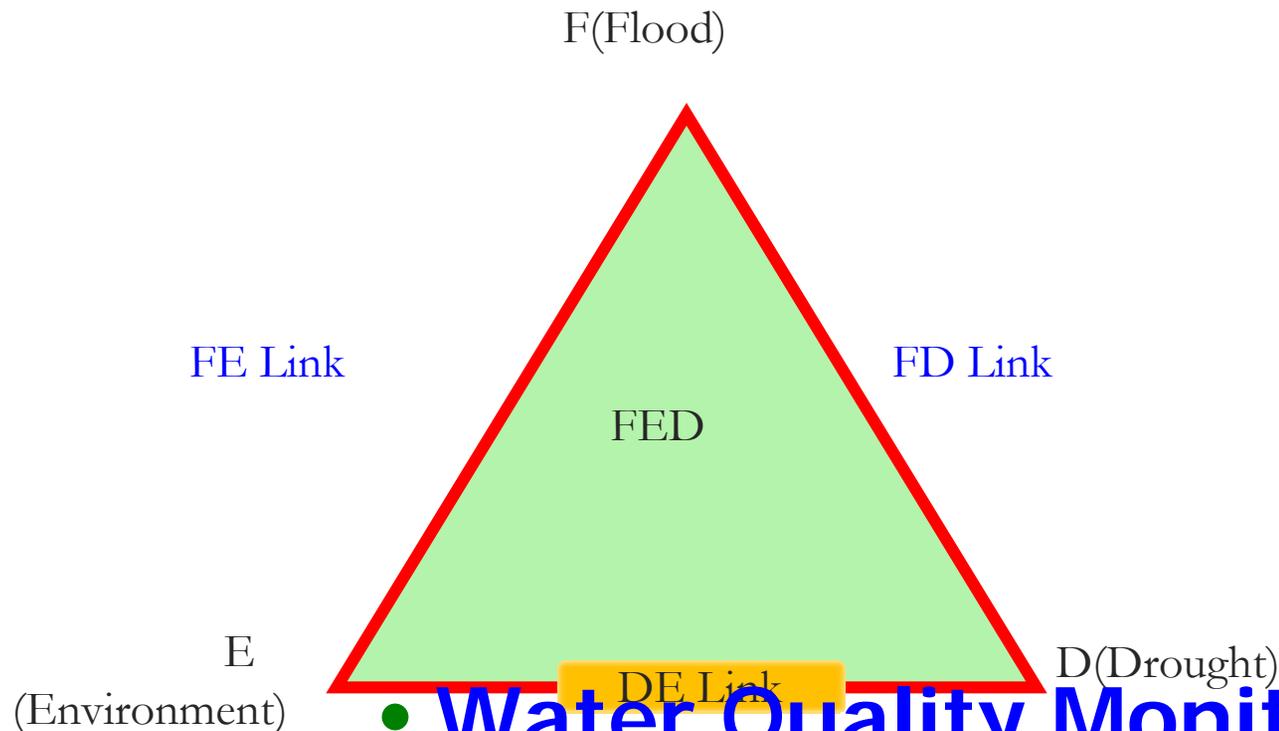
- Polluted water
- Monitoring system
- Water Treatment
- Reservoirs operation
- ,.....



## FED Triangle:

Linkages and Management of Water Resources

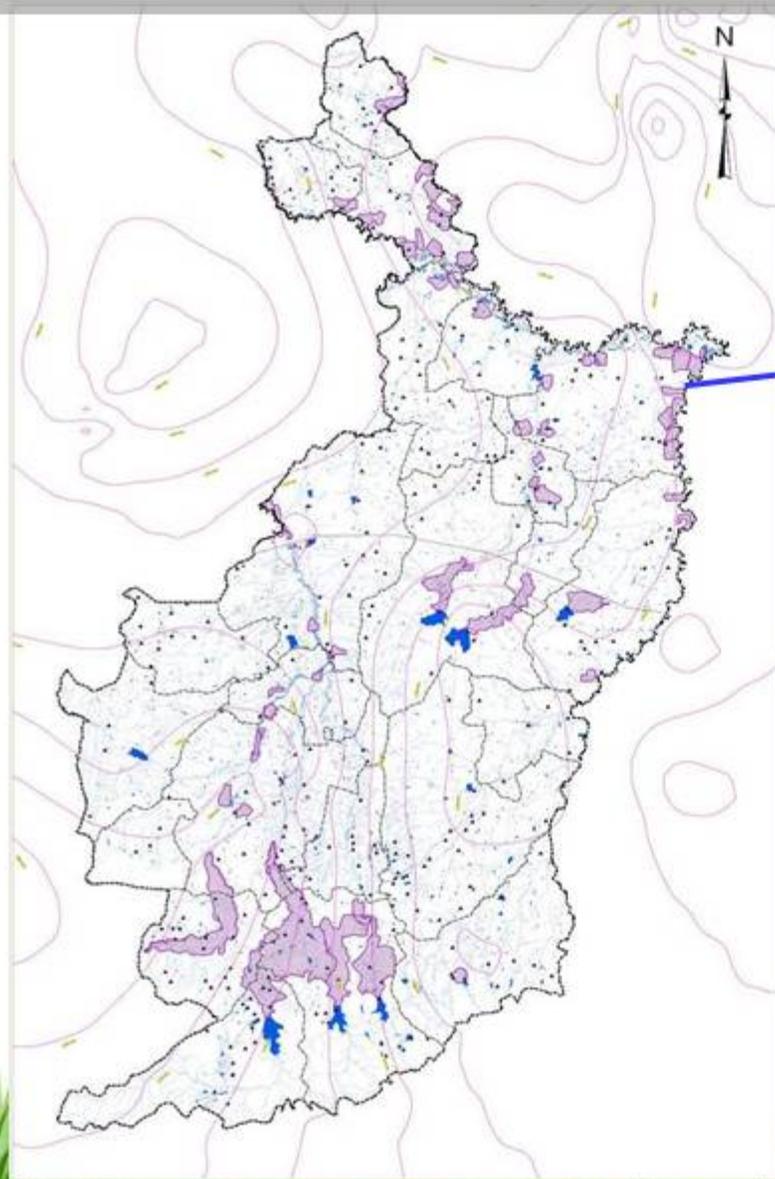
Chaiporn Siripornpibul, 2013



- **Water Quality Monitoring and Treatment**
- **Salinity Control: Regulation of discharge rate from**

**FED Triangle:**  
Linkages and Management of Water Resources

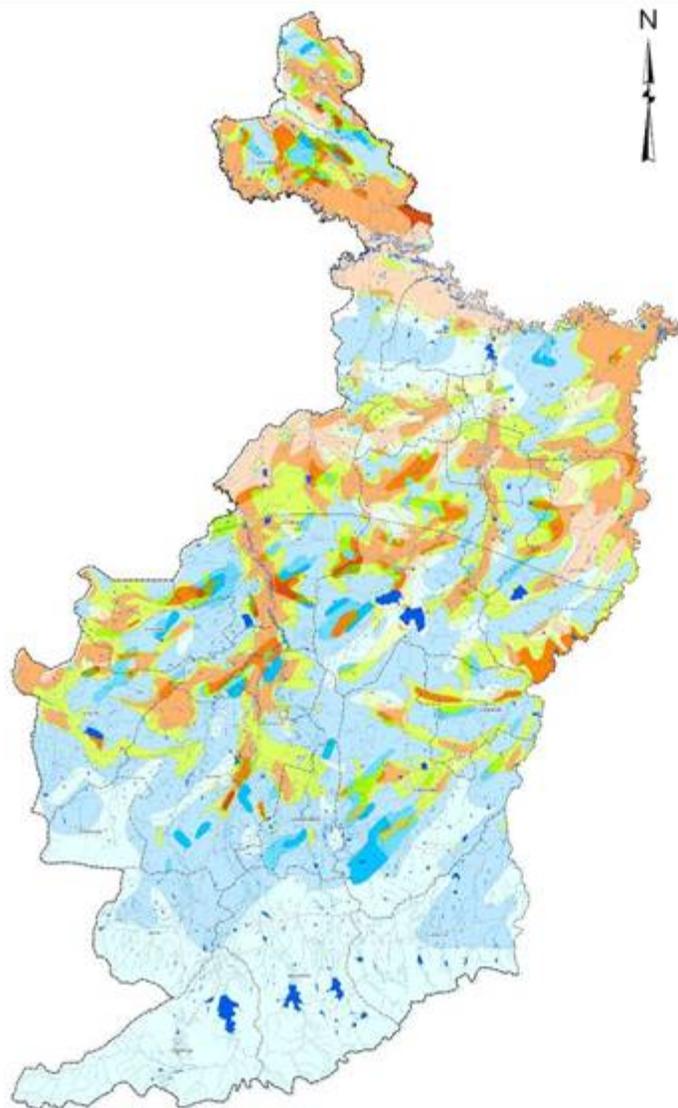
# Map of Surface Water Resources In Buriram Province



-  Reservoirs & Ponds
-  Isohyetal lines(mm.)
-  Locations of Medium and small size of Reservoirs
- 
-  Irrigated Areas



# Map of Groundwater Resources in Buriram Province

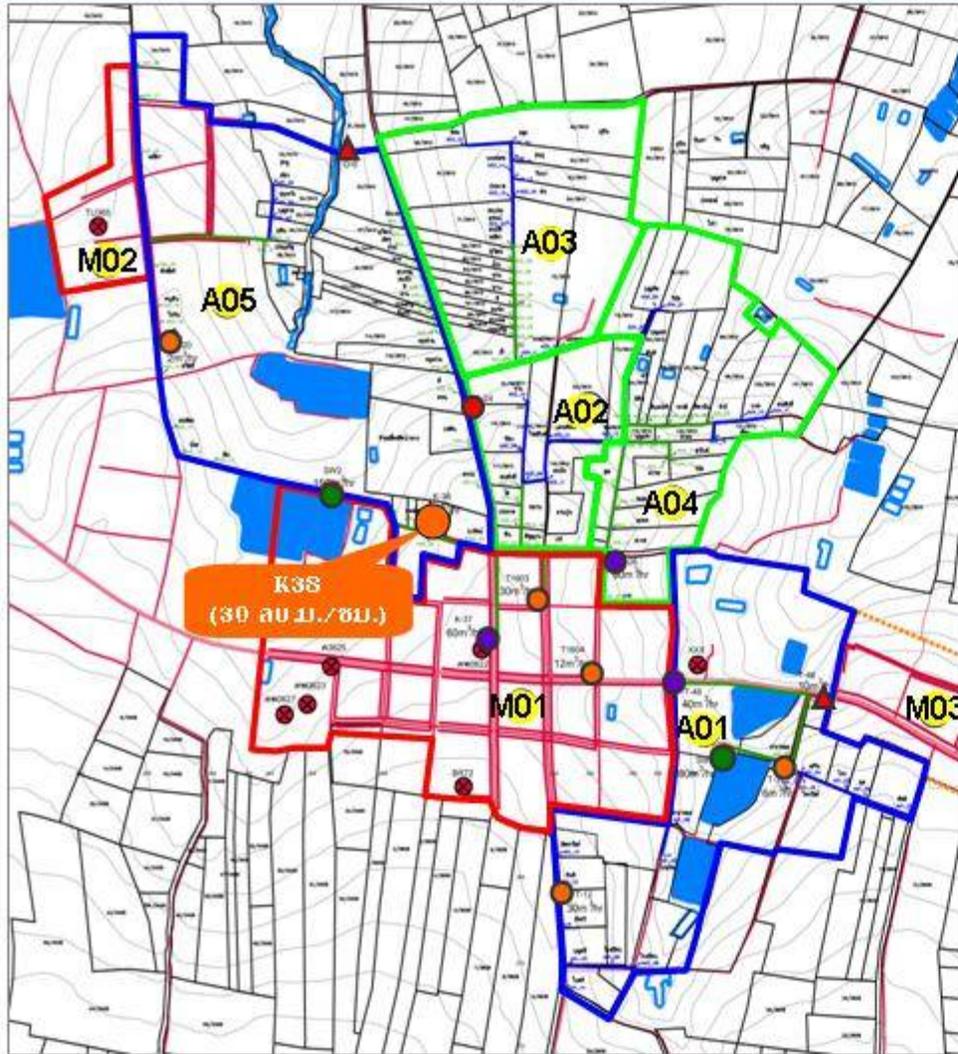


## Yield(cu.m/hr) & TDS(mg/L)



# Conjunctive Use Pilot Project: Buriram province

## Groundwater Drilling & Development



ส่งท่อการผสม-ท่อเจาะ-ร่อง



ส่งท่อการผสม-ท่อเจาะ-ร่อง



เป่าล้างบ่อ



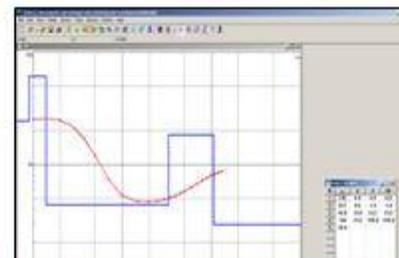
การสูบน้ำทดสอบปริมาณน้ำ



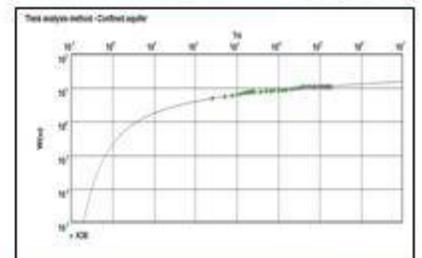
บ่อน้ำขนาดเล็กเพื่อการเกษตร ในพื้นที่ของบ่อส่งสูบน้ำ



Q = 30 ลบ.ม./ชม. (H=2 ม.) เป็นจุดผสมของบ่อน้ำ 2 บ่อ



กราฟความตํานกบ ไข่ปลาจำเพาะผสมเจาะจุด



กราฟแสดงผลการสูบน้ำทดสอบปริมาณน้ำ

# Pilot Project

Ban Sab Somboon,

Non Somboon District , Buriram Province



Artesian Well



Mushroom Farm



# Groundwater for Agriculture, Suphanburi Province



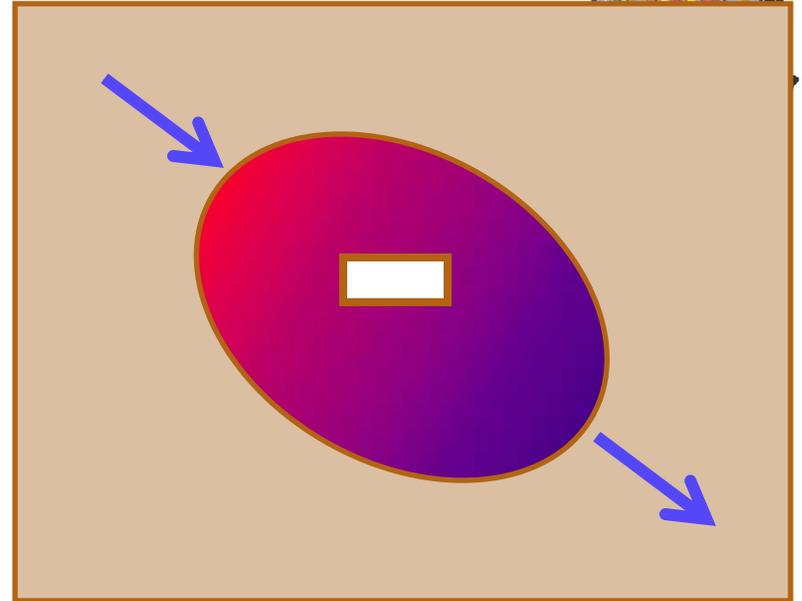
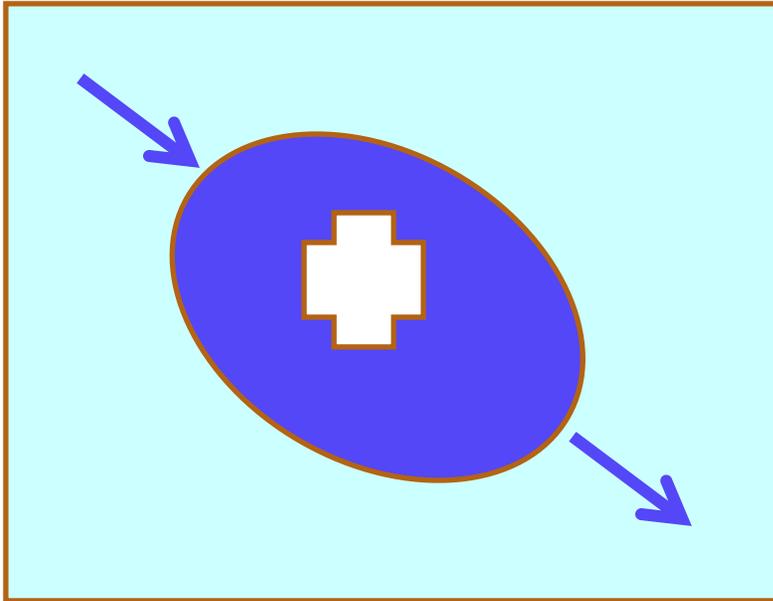
# Groundwater for Agriculture Suphanburi Province



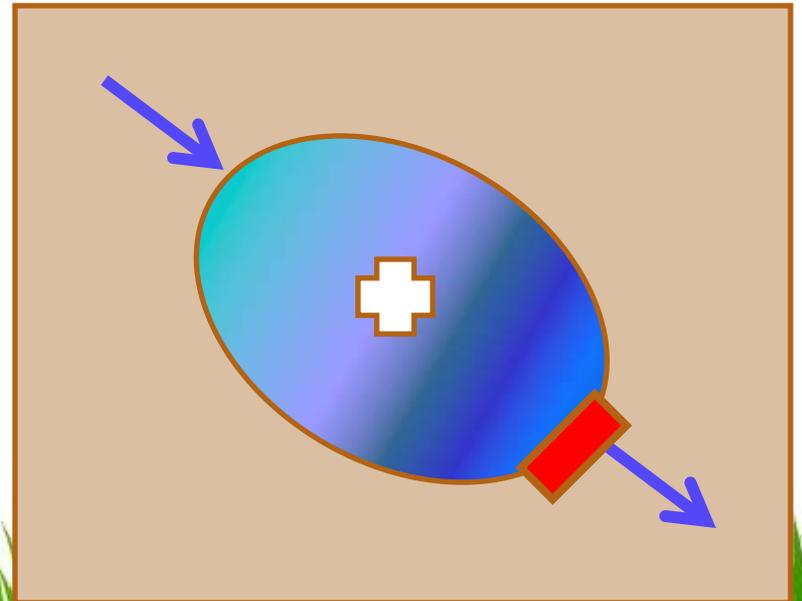
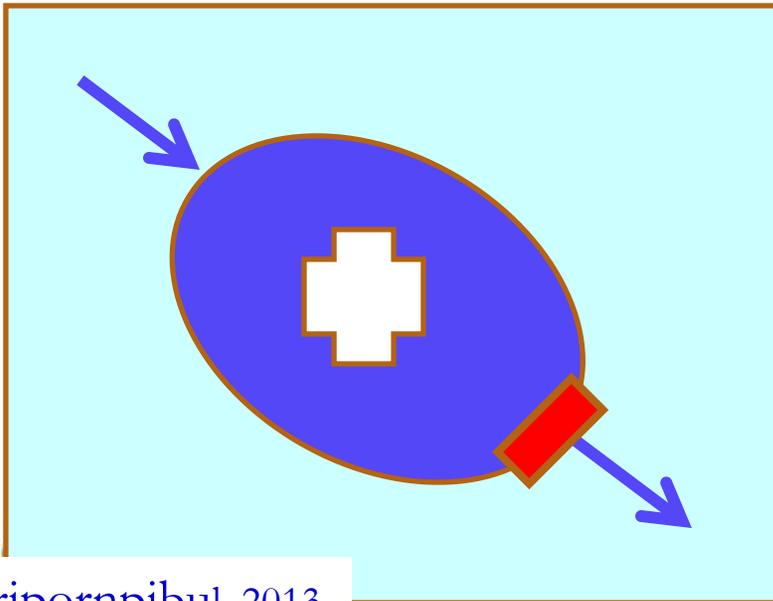
# Wet Season

# Dry Season

Before



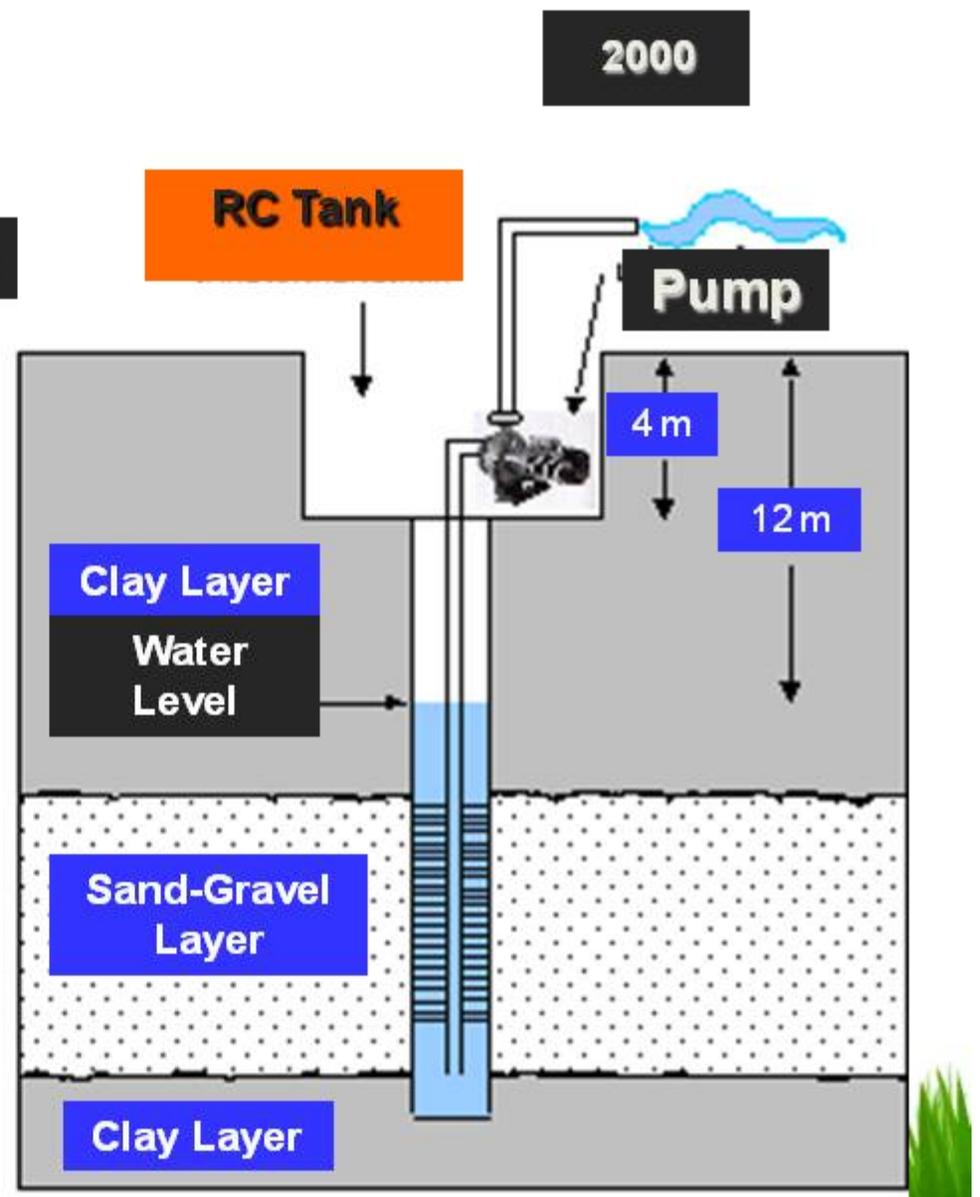
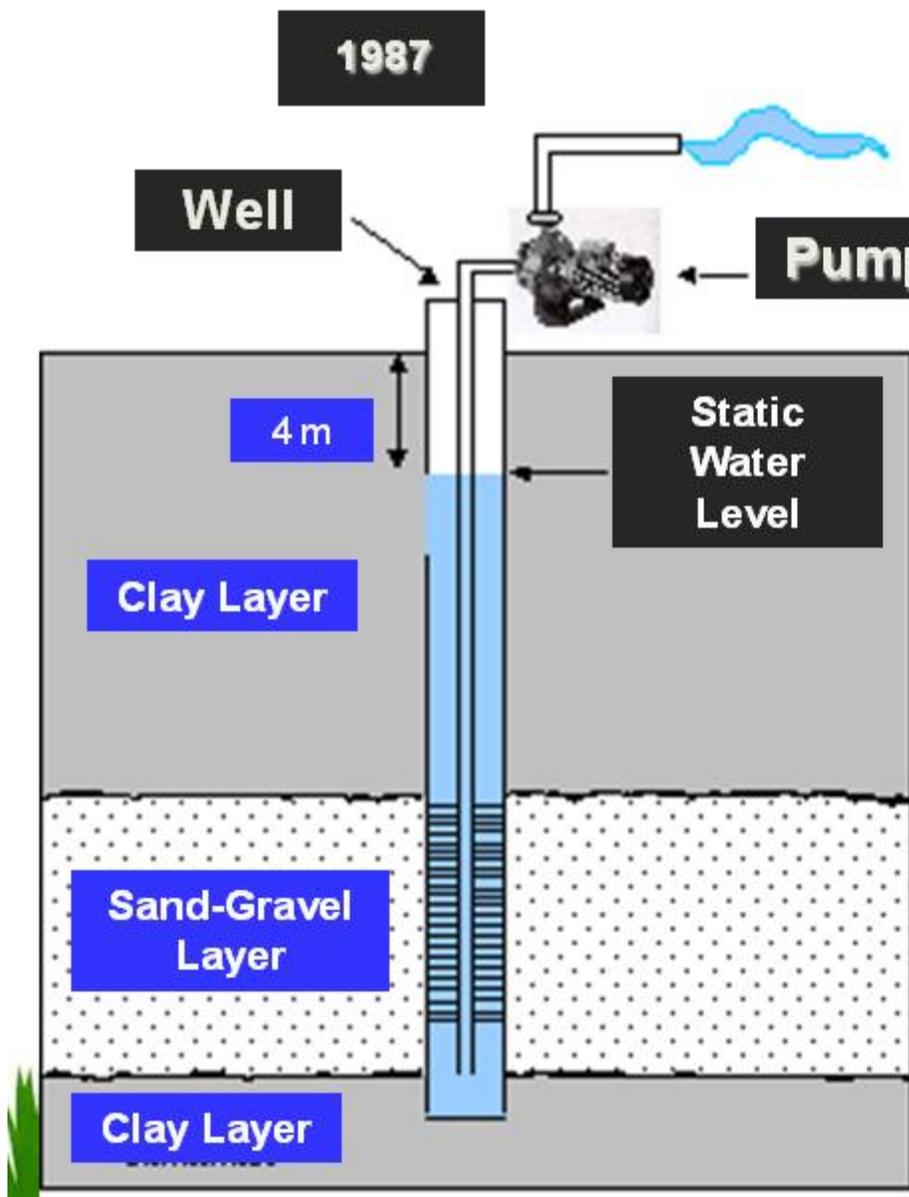
After

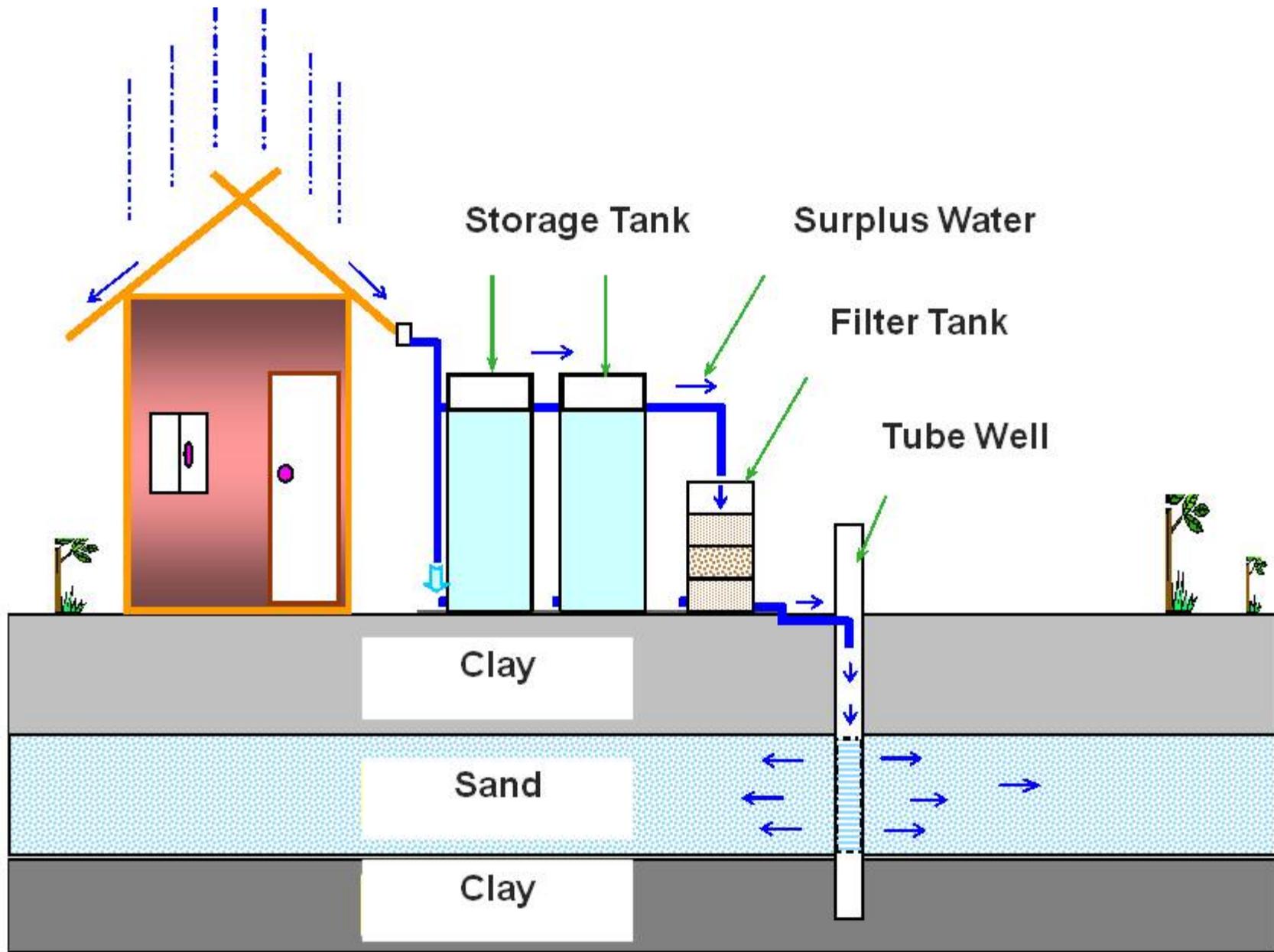




## Groundwater Use In Chainat Province





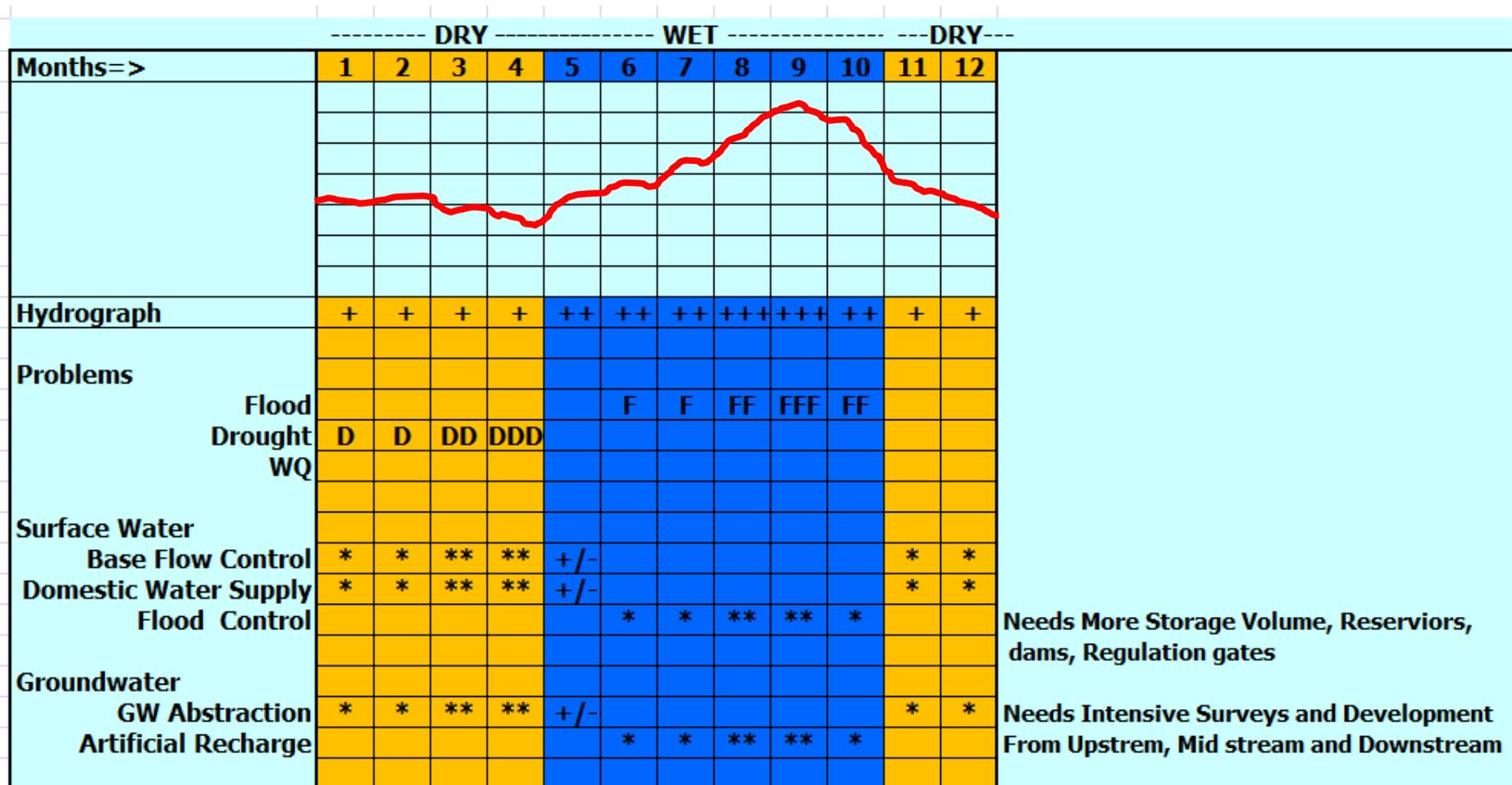


**Diagram of Artificial Recharge using Rain Water**





# FED Matrix and Timely Water Resources Management



***Thank You***

