

Assessment of Health Impact on Samut Songkram Province in Thailand:

The Case Study of Project Diverting Water from Mae Klong River (Phase 1)



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Background

- **National Economic & Social Development Plan**
- **Urban Development**
- **Population Growth**
- **Water Demand**

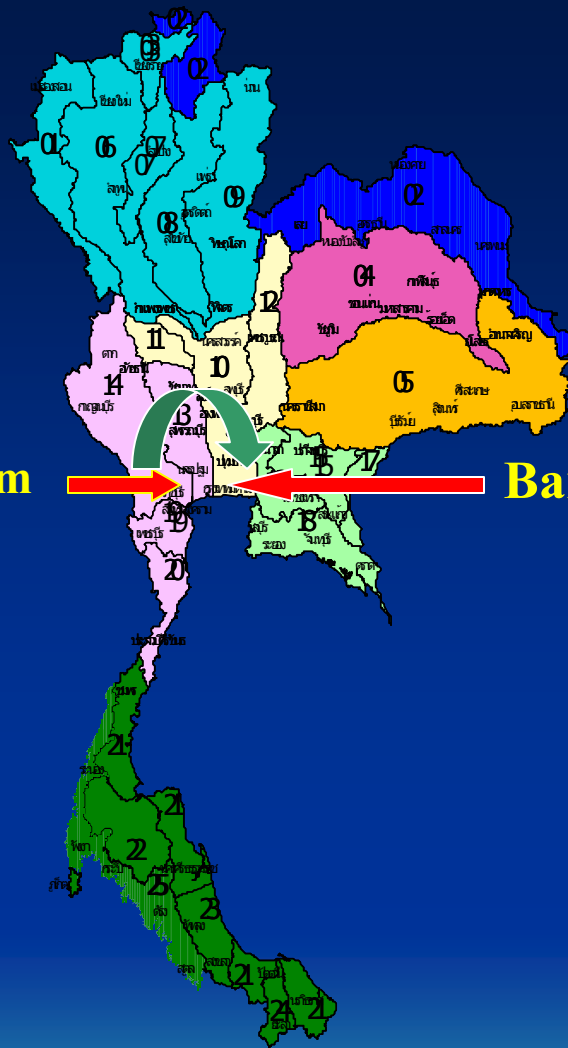


National Water Resource Policy

Problems

- Policy Making
- Public Participation
- Effects
- Conflict





Samut Songkram

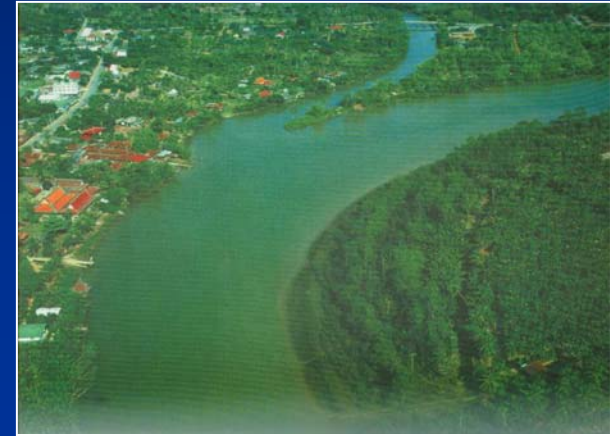
Bangkok

- estimated water consumption demand 8,000,000 m³/d
- over demand
- source raw water ?

Map of 25 Basins in Thailand

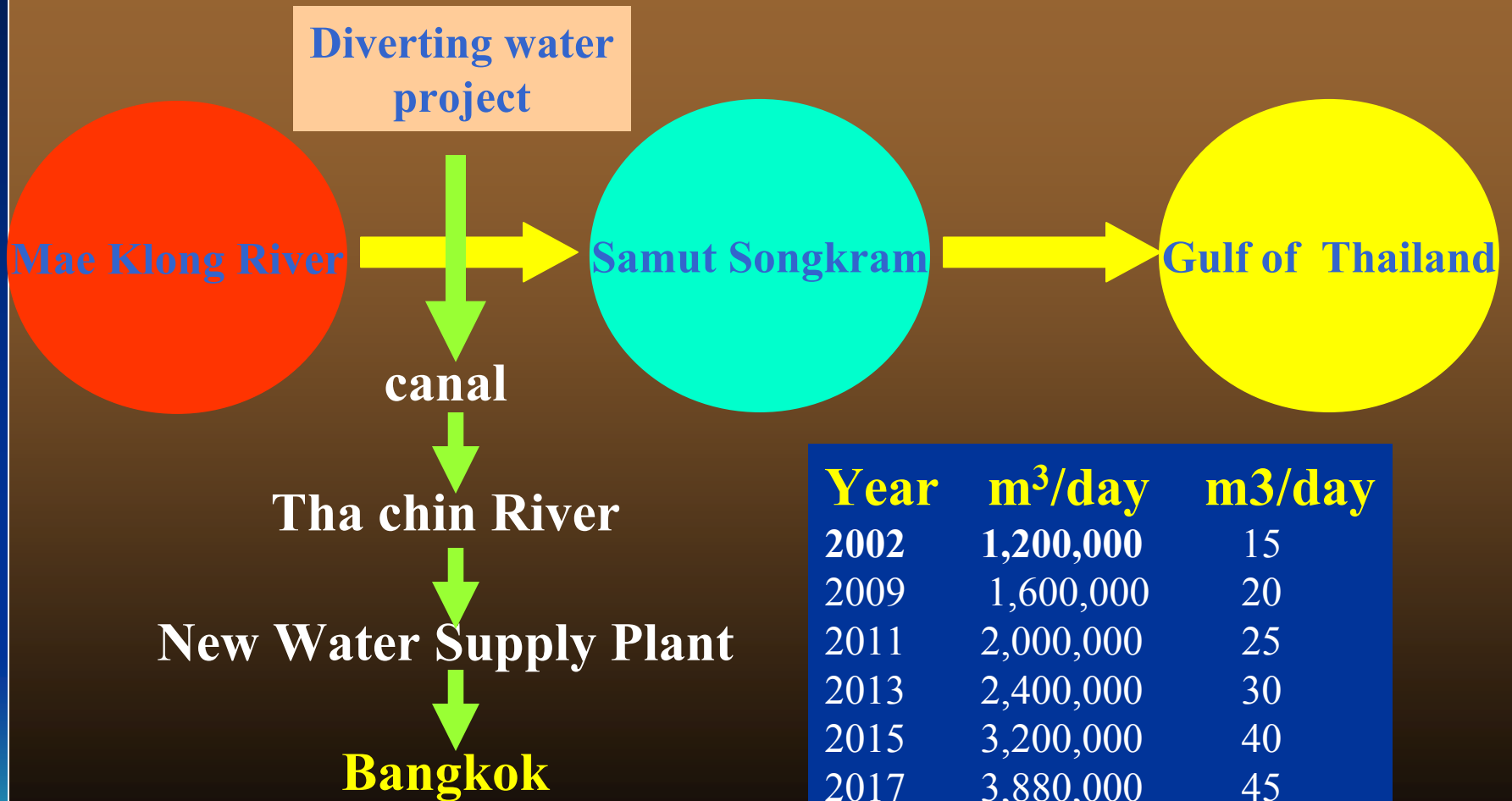
raw water source

- Old plant: from Chao Praya River
- New plant (Mahasawat plant)
 - Phase I : from Tha chin River
 - Phases II : from Mae Klong River
 - In 2017, estimated of converting water 1,419.1 million m³ /year
(45 m³/s)



Diverting Water from Mae Klong River Project





Research Objectives

Phase I

- to define Health Determinants for the diverting water from Mae Klong River project
- to identify indicators of Health Impact

Phase II

- to develop tools & methodology for assessment
- to assess of Health Impact



**Public Policy related to
Water Resources Management & Development**

**Diverting Water
Project**

**Samut Songkram
Province**

Health Determinants

Health Impact Indicators

Health Impact Assessment

Conceptual Framework



Research Methodology

- Literature Review
- Field survey
- Public meeting
- Expert meeting
- Data analyzing



Pubic Meeting

- villagers
- Civil society groups
- NGOs
- Health's volunteers

Expert Meeting

- Water specialists
- Health specialists
- Social specialists



Negative effects

- Low quality water supply
- High level of seawater
- feel unfair
- risk for water scarcity



Goods / Resources

Agricultural effects

- Water scarcity in dry season
- 25% losing water
- Decreasing cultivating area;
 - Rice fields 429,096 rais
 - Sugar cane 206,180 rais
- Economic loss 1,275 million baht/year



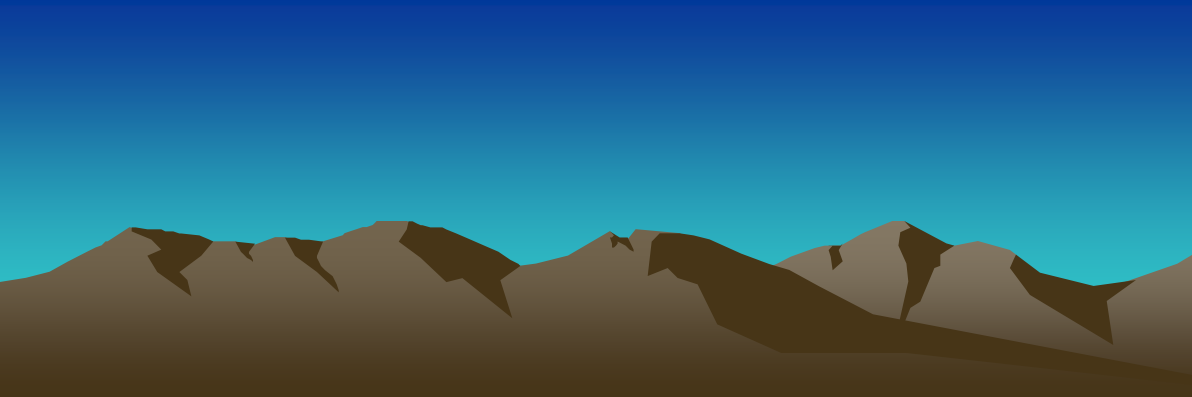
Health Determinants

- **Water consumption**
- **Environment**
- **Transportation**
- **Socio-economic**



Health Determinants

- **Water consumption**
 - lack of water supply
 - inadequate water
 - low water supply quality



Health Determinants

- **Environment**
 - insufficient water
 - water pass through canal decreasing
 - changing of ecosystem
 - high seawater level
 - water flows decreasing
 - high pollutant
 - soil deterioration
 - wastewater



Health Determinants

- **Transportation**
 - inconvenience transportation by water
 - raising of street construction

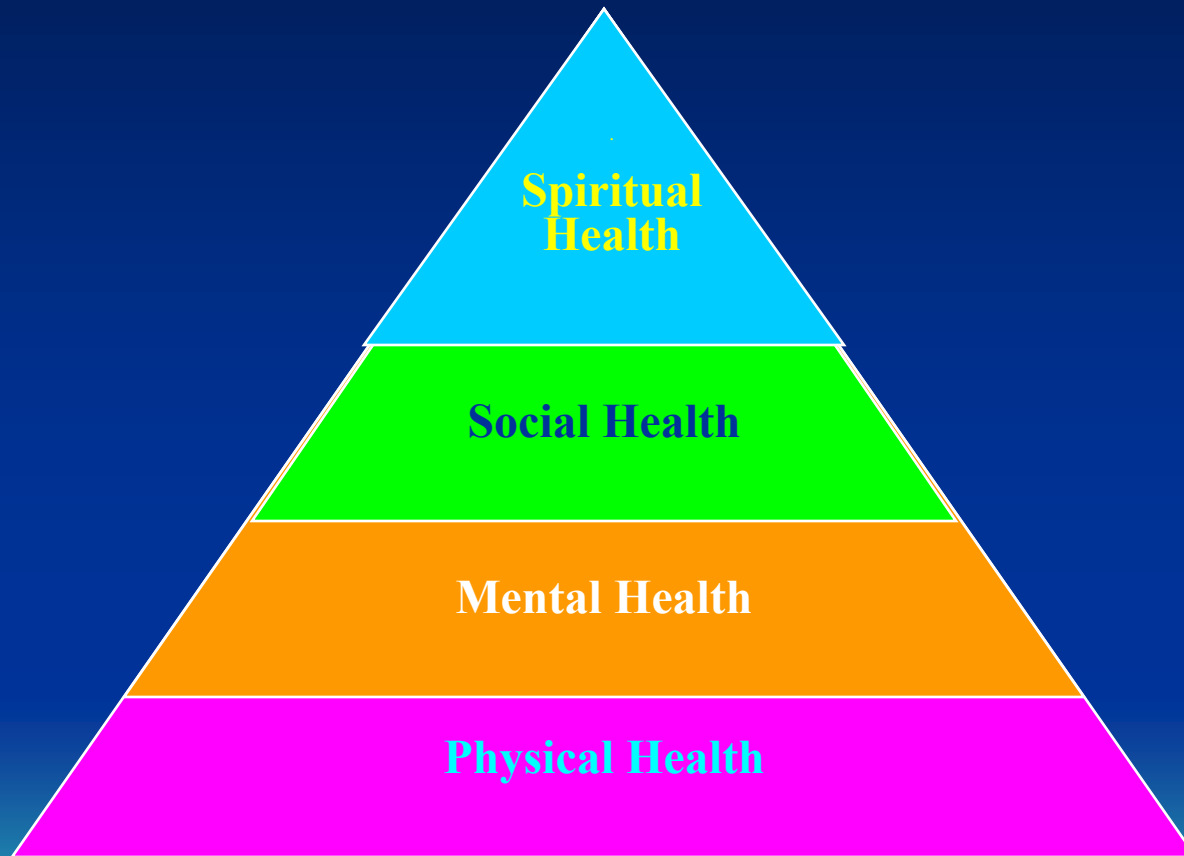


Health Determinants

- **Socio-economic**
 - income
 - occupation
 - unwilling for working
 - community conflict
 - changing of occupation
 - agricultural products
 - needed more labor
 - migration
 - tourism site



Health Impact Indicators



Physical Health Indicators

- **Illness rate**
- **Frequency from health service using**
- **Birth rate**
- **Mortal rate**
- **Growth rate**
- **Rate of patience's bed**
- **Environment of house**
- **Disable condition**
- **Lack of water**
- **Accidental rate**



Mental Health Indicators

- Psychological illness
- Nervous
- Anxiety
- Work satisfaction
- Stress from family/community/public
- Life stability
- Suicide rate
- Safety in life and property
- Mental severity



Social Health Indicators

- **Incomes**
- **Employment and unemployed**
- **Social traditional changing**
- **Life style changing**
- **Social vigorous**
- **Family/social relationship**
- **Conflict**
- **Migration rate**
- **Family development**
- **Occupation changing**
- **Water consumption cost**
- **Expenditure**



Spiritual Health Indicators

- Life's goal
- Community responsibility
- Life expectation
- Respect
- Changing of social ethics and moral
- Skill for resolved problem
- Feeling of social owner



Conclusion

- **Water scarcity**
- **Water quality**
- **Lack of Public participation**
- **Social conflict**
- **Rights of Water allocation**
- **Life and property impacts**



Conclusion

- **Negatives effects**
 - **Water consumption**
 - **Agricultural**
 - **Tourism**
 - **Ecosystem**
 - **Transportation**
 - **Socio-economic**



