Urban Water Management in Bangkok, Thailand

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Contents

1. Water supply, floods measures in BKK
2. Water resources and flood measures in neighboring areas
3. National water master plan
4. Linkage of water security index and development indicators
5. Remarks
Water Supply Master plan in BKK and vicinity
Floods and water way rehabilitation
Water sources and floods in the neighboring areas
2nd level: Master plans under national strategy (2018-2037)

Office of the National Economic and Social Development (NESDB)

23 master plans
1. Security
2. Foreign issue
3. Agriculture
4. Manufacturing
5. Tourism
6. City
7. Logistic and digital
8. Business
9. Sufficiency economy
10. Culture
11. Lifelong learning
12. Education
13. Mental issue
14. Sport
15. Social power
16. Local business
17. Social welfare
18. Sustainable development
19. Water management
20. Government
21. Corruption issue
22. Laws
23. Innovation
3rd level: Master plan on water resources management

1. Water for domestic
   1. Tap water for village
   2. Tap water for urban/economic zone
   3. Drinking water under standard and acceptable price

2. Water for production
   1. Demand management
   2. Water efficiency
   3. Water allocation in rainfed area
   4. New water storage
   5. Water distribution system
   6. Increase water productivity
   7. Increase water by artificial rain making

3. Flood management
   1. Increase drainage efficiency
   2. Urban flood protection
   3. Flood area/retention pond management
   4. Area-based flood management
   5. Adaptation support

4. Water quality
   1. Wastewater reduction at source of origin
   2. Increase treatment efficiency
   3. Preserve ecological balance
   4. Recover national water resources

5. Upstream forest conservation & Soil erosion protection
   1. Conserve upstream forest
   2. Soil erosion protection in upstream area

6. Water management
   1. Water laws & institutional management
   2. Water management plan
   3. Monitoring and evaluation
   4. Database of decision support system
   5. R&D
   6. Communication and citizen participation

2nd level

19th issue: water master plans under national strategy

- **KD1 Household Water security**: 3 → 4
- **KD2 Economic Water security**: 4 → 5
- **KD3 Urban Water security**: 1 → 4
- **KD4 Environmental Water security**: 2 → 4
- **KD5 Resilience to water-related disaster**: 2 → 4
  - Damage reduction 50%

**To improve national water security**

**To increase water productivity**

**To recover national water ways/conservation**

**Sustainable green development**

Reference: Dr. Pongsak Suttinon, 2019
Adapting AWDO 2016 Framework for Provincial Water Security Assessment

Reference: Dr. Piyatida Ruangrassamee, 2019
Water Security Index and SDGs

THAILAND
East and South Asia

▼ OVERALL PERFORMANCE

Index score  73.0
Regional average score  65.7

SDG Global rank  40 (OF 162)

▼ SPILLOVER INDEX

100 (best) to 0 (worst)

▲ AVERAGE PERFORMANCE BY SDG
Discussion meeting among stakeholders

Water Security Workshop in Bangkok on 19 August 2019
ADB, OECD, IWC, Chulalongkorn University, Thai Water Partnership, CRI, and Representatives from Office of the National Water Resources (ONWR) and water-related government agencies
Supported by Thailand Science Research and Innovation (TSRI)

Policy evaluation by Office of the National Economic and Social Development (AWDO + Water Productivity + Water Governance)

Monitoring & Evaluation of National Water Resources Projects by Office of the National Water Resources

OECD: Water Governance in AWDO 2020

OECD: Water Finance in AWDO 2020

IWC, Australia: Environmental Water Security
Chair holder:
Assoc. Prof. Dr. Sucharit Koontanakulvong
http://project-wre.eng.chula.ac.th/watercu_eng/
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UNESCO Chair on Water, Disaster Management and Climate Change

Current areas of activity
• Water Security Assessment in ASEAN
• Vulnerability and Risk assessment due to Climate Change
• PERSIANN-CCS Estimation for Water and Disaster Management
• Climate Change Impact Assessment on Groundwater Management for sustainable development

Future Activities to address the SDGs
• Water-Energy-Food NEXUS’s data base and model development for Sustainable Development
• Flood and Drought Monitoring and Warning System with application from Remote Sensing Images
• Sustainable Groundwater Management under Climate Change
• THA2021 International Conference on Water, Disaster Management and Climate Change
• Smart System for Dam Operation
Remarks

• Urban Water Management in BKK:
  Water Supply coverage and service
  Flood Protection
  Waste water system
  Waterway Rehabilitation
• Flood mitigation System in the neighboring areas
• National Master Plan in Water management and water security index
• Regional collaborations
References

• Office of the National Economic and Social Development (NESDB), National Strategy (2018-2037)
• Office of the National Water Resources (ONWR), Master Plan on Water Resources Management (2018-2037)
• ADB (2016), Asian Water Development Outlook 2016
• OECD (2015), OECD Principles on Water Governance
• Koontanakulvong S. and C. Suthidhummajit (April, 2019), Technical report of water productivity under “Research Project on “Analysis of water security, water productivity and water-related disaster for water resources master plan”, supported by Thailand Science Research and Innovation (TSRI)
• Ruangrassamee et al. (2019), Research Project on “Analysis of water security, water productivity and water-related disaster for water resources master plan”, supported by Thailand Science Research and Innovation (TSRI)
• Suttinon P. (2019), Inception report on monitoring & evaluation of national water master plan, supported by Office of the National Water Resources
Research on water security assessment in Thailand and related

- Sucharit Koontanakulvong (2013): R&D on water security index at provincial and basin scales of Thailand
- Piyatida Ruangrassamee (2018-2019): update R&D on water security assessment at provincial and basin scales of Thailand
- Pongsak Suttinon (2019): mainstream water security index into national water strategy and master plan (cooperation with Office of National Water Resources) “Project on monitoring & evaluation of national water master plan”