IWRM-based Water Planning Approach in Lao PDR

By Department of Water Resources
Ministry of Natural Resources & Environment, Lao PDR
Brief information about Lao PDR

- Lao PDR located in South-East Asia
- Area 236,800 km² (half size of Spain)
- 90% of the country are in Mekong Basin
- Water resources per capita is around 55,000 m³ per year
- 35% of annual flow (or equal 270,000 m³) in Mekong is from Lao tributaries
- The monthly rivers flow by the pattern of rainfall is around 80% during the rainy season and 20% in the dry season.
THE BASIN LINKAGES

The Mekong River Basin

Characteristics:
- Area: 795,000 km² (21)
- Length of mainstream: 4,800 km (12)
- Average discharge: 15,000 m³/a (8)

Major watersheds in Lao PDR with catchment area above 4,500 km²

Legend:
- International boundary
- Basin boundary
- River
- Upper Mekong Basin
- Lower Mekong Basin (MRC)

Rank in the world
Flow contribution
Challenges for Water Resources Planning

• Population Increase
• Increase in access to tap water
• Increase in energy consumption

• Promising trend in becoming regional source of energy so-called Battery of ASEAN

• Irrigation expansion program

• Commitment in Mekong Agreement
IWRM IN THE MEKONG BASIN
- VERTICAL AND HORIZONTAL “INTEGRATION”

- Trans-boundary basin
- Nation
- Tributary basin
- Sub-basin
- Watershed

- Cross-sector dialogue
- Stakeholder dialogue

- Mekong IWRM-based BDP
- National IWRM Plans
- River basin plans
- Sub-basin Plans
- Integrated Watershed Management
Case study of Nam Ngum
The Lao case: The Nam Ngum River Basin (RBC 2010)

- Area: 16,841 km²
- Population: 550,000
- Annual rainfall: 2,200 mm
- Coverage: 5 provinces

Increasing mining and plantation development

MAJOR EMERGING CHALLENGES
The Lao case: The Nam Ngum River Basin (RBC 2010)

Currently 4 hydropower schemes:
- storage capacity of 7,300 mcm
- gen. cap. of 255 MW

Additional 6 dams (up to 14 total) are being planned:
- storage capacity to 17,000 mcm
- gen. cap. To 1,500 - 1,800 MW

Increasing mining and plantation development

MAJOR EMERGING CHALLENGES
The overall planning context

**Geography**
- Mekong Basin
- Laos
- Nam Ngum
- Nam Ngum sub-Basins
- Watersheds

**IWRM instruments**
- Mekong IWRM Strategy 2010
- Mekong IWRM-based BDP
- Nam Ngum IWRM Plan
- Nam Ngum sub-basin plans (as e.g. Nam Song and Nam Kho)
- Integrated Watershed Management Plans
Modeling development scenarios
The river basin planning process

DEVELOPMENT PLANS 2011-15
SECTOR PLANS
National
Province
District

WATER RESOURCES PLANS
National WR Action Plan 2011-15
National and Basin IWRM Plans

OTHER PLANS
MRC BDP & MRC Procedures
Sector plans
Climate change adaptation plans
MDG, PRSP etc etc.

RIVER BASIN PLAN
RIVER BASIN MANAGEMENT

STAKEHOLDER DIALOGUE
RBC SECRETARIAT
SUB-BASIN COMMITTEES
(Districts, communities)
Khob Chai
Gracias
Thank you