

# CUMULATIVE IMPACT ASSESSMENT AND WATER BASIN MANAGEMENT ON SMALLER RIVER BASINS IN VIETNAM

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# OVERVIEW

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The Background

The Challenge

The Issue

The Approach

# The Background

2,200 streams and rivers with length greater than 10 km

Average rainfall is high - excellent hydropower potential

Hydropower since 1960s

## **Operational:**

*49 HPP - 11,600 MW*

*190 SHP (30 MW) -1,500 MW*

## **Under Construction:**

36 HPP- 4,600 MW

181 SHP - 2,300 MW

## **Under Planning:**

7 HPP – 420 MW

353 SHP – 1,058 MW



# The Challenge

SHP projects need to be carefully managed and are not win-win

Renewable Energy Development Project (US\$220 million) finances SHP developments

Impacts on Local Communities

- Access road construction
- Land compensation and resettlement
- Minimum environmental flow
- Dam safety



## The Issue

- Lack of efficient legal, regulatory and institutional framework for water resource management and SHP development planning
- Lack of understanding of impacts of SHP developments
- Lack of attractive feed-in tariffs and environmental and social safeguards awareness
- Lack of coordination among relevant ministries (Environment, Energy, Agriculture, Transport, Planning)
- Lack of coordination at national, provincial, municipal and commune level
- Lack of coordination among SHP developers on water cascades
- Lack of experienced hydropower developers



## The Approach

Conduct analytical work to improve SHP development on six REDP rivers

US\$560,000  
ASTAE/AusAid/BB

International/local team of experts under World Bank supervision

Started in July 2012 –  
duration 12 month

### Cumulative Impact Assessment and Watershed Management for River Basin Cascades in Vietnam



Australian Government  
AusAID

# The Approach

**Why do we need cumulative impact assessment?**

**4 main tasks of analytical work**

To get the whole cascade to work as efficient as possible



- Screening Phase of 6 REDP Rivers
- Detailed Cumulative Impact Assessment for 4 high impact rivers
- Develop Joint Operation Rules for SHP to maximize electricity output and minimize impacts
- Develop General Planning Guidelines for SHP developments

# The Approach

## Screening Phase

Completed

Criteria for ranking cascade system impacts

- Physical
- Environmental
- Social

Criterion	Ngoi Xan	Nam Tha	Pho Day	Nam Hoa	Nam Chien	Sap
<b>Physical</b>						
Land Take/Length	4	5	2	3	4	3
Erosion/sedimentation/Water Quality	3	3	2	3	3	5
Flow regime change	2	2	1	2	3	2
<b>Environmental</b>						
Valued Ecosystem Components (VEC's)	3	4	2	3	4	2
Ecosystem Services	3	4	2	2	3	2
Habitat fragmentation	4	5	2	2	4	3
<b>Social</b>						
PAP's	2	2	4	3	4	1
Local Economy	2	2	2	1	4	3
Cultural/Social life	2	2	3	1	3	1
<b>Total system impact score</b>	<b>2.75</b>	<b>3.20</b>	<b>2.20</b>	<b>2.20</b>	<b>3.60</b>	<b>2.45</b>



## The Approach

Detailed Cumulative  
Impact Assessment

Develop Joint  
Operational Guidelines

Planning Guidelines for  
SHP in Vietnam

### **Review SHP Planning Procedures**

- Review of planning procedures, processes and institutional arrangements (institutional framework, stakeholder analysis, challenges and bottlenecks)
- Recommendations to improvement procedures and institutional arrangements

### **Guidelines for Development of Joint Operation Rules for SHP in Vietnam**

### **Guidelines for Development of Benefit Sharing Schemes for SHP in Vietnam**



**Fish Trap in Chien river**

Thank you for your ongoing support