

SEA of Quang Nam Province Hydropower Plan for the Vu Gia-Thu Bon River Basin

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SEA of Quang Nam Province Hydropower Plan for the Vu Gia-Thu Bon River Basin

Contend of paper

Background

Hydropower Plan in Quang Nam Province

Methodology

Key environmental, economic and social issues

Past, current trend analysis

Future trend analysis with and without HP

Four strategic concerns

Mitigation measures

I. Background (SEA of QN cont')

- The ADB Technical Assistance for Capacity Building in the SEA of the Hydropower Sector (TA 4713-VIE) in VG-TB:
- Purposes of Project
 - Capacity Building: Local & Center Gov.
 - Technical guideline of SEA for Hydropower Plan
 - SEA of Quang Nam Hydropower Plan
- Consultation company: International Center for Environmental management
- Implementation time 9/2006-9/2007



II. Hydropower Plan in Quang Nam (*SEA of QN cont'*)

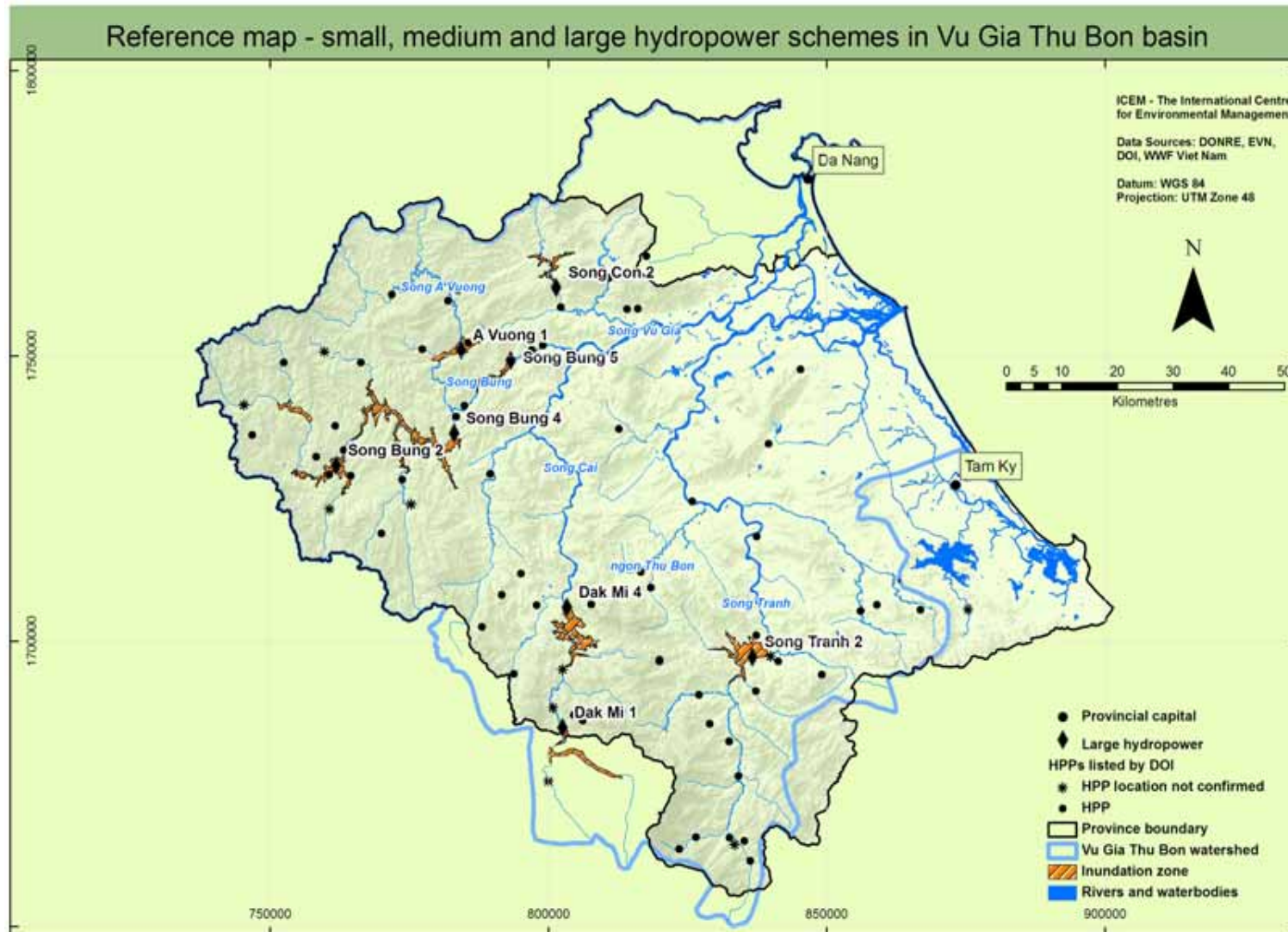
- SEA for Existing Master plan (MP) of Hydropower For Electric Development in QN province (Center and Local Gov approved)
- Period from 2006-2010 toward 2015

Proposed 60 Hydro scheme (large, medium and small scale)

River basin about 10.000 km² (including QN &DN)

Environment, Social, Economic Assessment

SEA of QN (cont')



III. Methodology (SEA of QN cont')

- Workshops (5 time): comment from Centre and local government experts, stakeholder, scientists, NGO (WWF)
- Working group
- The methodology is Trend analysis
- (SEA – Technical guideline)
- Story-lines that qualitatively describe the key trends, their main drivers, territorial dimension and key concerns for hydropower development;
- Maps showing and overlaying spatial dimensions of key environmental, social and economic issues; and where possible,
- Simple graphs (when data was available)

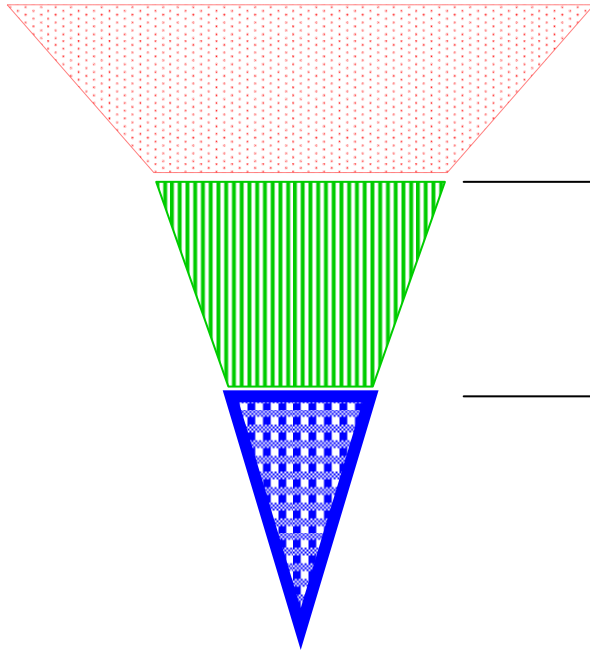
IV. Key Environmental, social and economic issues

SEA of QN (cont')

80 Env. Social and Economic issues

- Consolidation 15 issues addressed by the SEA
- Out line of the expected future trends in 15 issues with the MP
- Four critical strategic issues: integrity of ecosystems, (ii) water supply, (iii) minorities, and (iv) economic development in two Provinces

SEA of QN (cont')



**80 issues
identified**

**Trends analyzed
for 15 key**

critical strategic concerns:
ecosystem integrity, water
supply, minorities, and
provincial economic
development
**Mitigation measures
identified**

Key issues addressed by the SEA (*SEA of QN cont'*)

1. Climate situation with emphasis on rainfall
2. Dry season minimal flows and effect on salinity intrusion
3. Flooding and maximum flows
4. Sediment transport and sand excavation
5. Aquatic biodiversity and fisheries
6. **Forest management and terrestrial biodiversity**
7. Demography and migration
8. Minorities
9. Public health
10. Transport
11. Agriculture and irrigation
12. Industrial development
13. Tourism development
14. Mining and
15. Waste management

V. Past, current trend analysis (SEA of QN cont')

Exp. Changes in Protection and production forest areas in QN

<i>Forest category</i>	<i>1998</i> ¹	<i>2004</i> ¹		<i>2006</i> ²	
	<i>Area (ha)</i>	<i>Area (ha)</i>	<i>% of 1998</i>	<i>Area (ha)</i>	<i>% of 1998</i>
Protection forest	261,220	288,42	110.4	253,0	96.9
- Natural forest	250,888	240.21	95.7	229,6	91.5
- Plantations	10,332	13,030		23,40	
Production forest	250,525	173,41	69.2	107,9	43.1
- Natural forest	250,525	71,113	28.4	76,86	30.7
- Plantations	0	30,395		31,06	

***VI. Future trend analysis with and without HP
SEA of QN (cont')***

Planning for protection and production forests in QN

<i>Forest category</i>	<i>2004¹</i>	<i>2006²</i>	<i>2010³</i>
Protection forest (ha)	288,420	389,261	386,077
Land with forest	288,420	253,035	280,871
- Natural forest	240,214	229,636	262,097
- Plantations	13,030	23,402	18,774
I. Production forest (ha)	173,414.0	180,041	179,560
Land with forest	173,414	107,925	90,161
- Natural forest	71,113	76,864	59,616
- Plantations	30,395	31,061	30,545

- *increasing forest fragmentation*
- *breaking in connectivity through the River Basin*
- *reducing quality of forest*

VII. Four strategic concerns (SEA of QN cont')

- Water supply (change the timing of flows; reduce to a small fraction of the natural flow in the river
- Economic development of Quang Nam and Da Nang: Industrial production; agricultural sector; Fisheries sector; forestry sector; mining sector, impact on employment...
- Ecosystem integrity;
- Ethnic minorities.

VIII. Mitigation measures (SEA of QN cont')

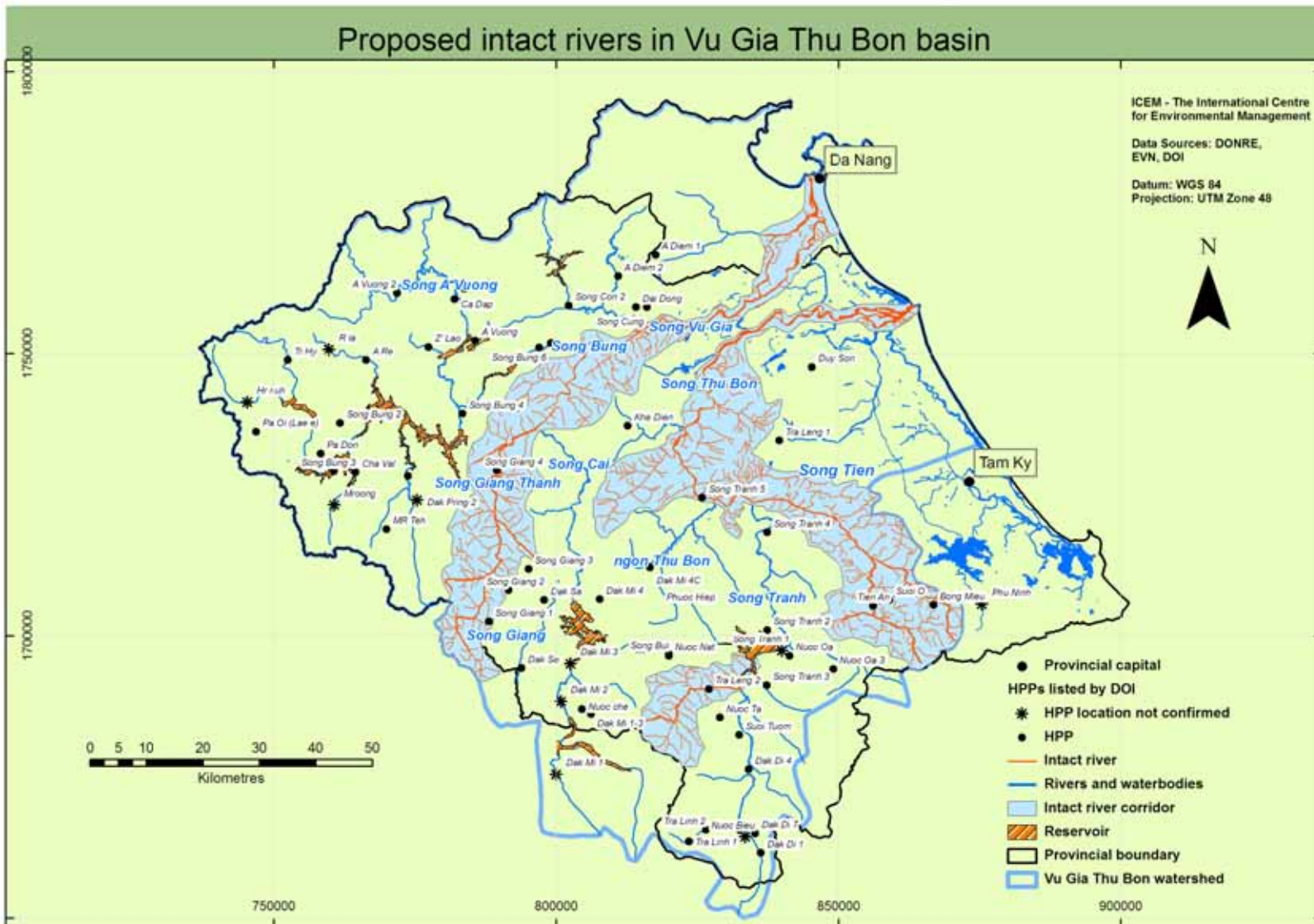
- **Water supply:**
 - *Multiple-purpose use; Rule Curve Preparation; Water Supply Gate Dak Mi River*
 - Innovative financing: Employment creation as part of sectoral structural adjustment programmes; Development of a local hydropower servicing industry



- **Ecosystem integrity:**
 - Two complete river (Song Tien/ Thu Bon; Song Giang/ Vu Gia).
 - Compensatory forest
- **Ethnic minorities:**
 - Integrated government service delivery for ethnic minorities;
 - Long-term adjustment programs for resettled communities (10-15 yrs);
 - Long term financial & non-financial commitment by hydropower developers
- **River basin planning**

A river basin organization should involve all provinces within the basin

Proposed intact rivers in Vu Gia Thu Bon basin



ICEM - The International Centre for Environmental Management
 Data Sources: DONRE, EVN, DOI
 Datum: WGS 84
 Projection: UTM Zone 48



- Web site <http://www.icem.com.au>
- **THANK YOU FOR YOUR ATTENTION**