

New Perspectives on the Impacts of Irrigation on Fisheries: Rice/Fish Systems in Laos and Sri Lanka



Background

- Inland fisheries are important
- Irrigation development can have major impacts
- Available technical information and guidelines for impact assessment are weak
- There are opportunities for improving water management for food and ecosystems.

Inland fisheries are important

- Yield > 20 million t/year (> 25% of total food fish production)
- Account for as much as 20% of rural household income in Laos, Cambodia,...
- Important source of protein and micro-nutrients
- Often accessible and most important to the poor

Definition (FAO)

- *Fisheries*: harvesting (wild) aquatic organisms as common pool resource
- *Aquaculture = fish farming*: intervention in life cycle of organisms that are privately owned

Work done

- Development of technical guidelines and an adaptive, participatory and integrated approach for impact assessment (APIA)
- Case investigations of proposed 1000 ha irrigation scheme in Laos and existing 10000 ha Kirindi Oya Irrigation and Settlement Project in Sri Lanka
- Prior study of irrigation impacts in Laos

Key Lessons

1. Modified ecosystems can support productive fisheries and rural livelihoods
 - fisheries can co-exist with irrigation and add to the overall benefits from schemes
 - for example, rice fields and reservoirs in Laos and reservoirs in Sri Lanka.

Key Lessons

2. When assessing the externalities of water use we cannot assume that protecting biodiversity and ecological integrity will necessarily achieve fisheries production and livelihoods objectives.
 - may need to sustain modified rather than pristine ecosystems
 - may need different tools and perspectives, e.g. EIAs that focus only on biodiversity and ecology may not be sufficient.
 - may need different measures for mitigation of negative effects.

Key Lessons

3. Scope exists for multi-use management of water resources for irrigation and fisheries
 - impacts of water management and farming practices may be more important than the impacts of infrastructure construction
 - improved fisheries and irrigation management may be an “easy win” needing relatively low investment
 - independent sectoral approaches may impede this
 - these are aspects of Integrated Water Resource Management (IWRM)

Key Lessons

4. Fisheries can make a diverse range of contributions to the livelihoods of rural people
 - these are often undervalued or neglected
 - impact assessments and the valuation of externalities must look beyond production and income figures alone
 - assessments must also be disaggregated spatially across a catchment and by socio-economic group

Livelihood strategy	Livelihood functions of fishing
'Survival'	<ul style="list-style-type: none"> ● Subsistence (food production and income) ● Nutrition – protein, micronutrients, vitamins
'Subsistence' diversification', traditional livelihoods	<ul style="list-style-type: none"> ● Own consumption – food security and nutrition ● Complementarities in labour use with farming ● Means for barter, cash source or social networks ● Diversification for: <ul style="list-style-type: none"> ○ labour and consumption 'smoothing' ○ risk reduction ○ as a coping strategy/buffering against shocks.
'Specialisation' (as fishers)	<ul style="list-style-type: none"> ● Market production and income
'Wealthy diversification'	<ul style="list-style-type: none"> ● Retention in a diversified accumulation strategy ● Recreation

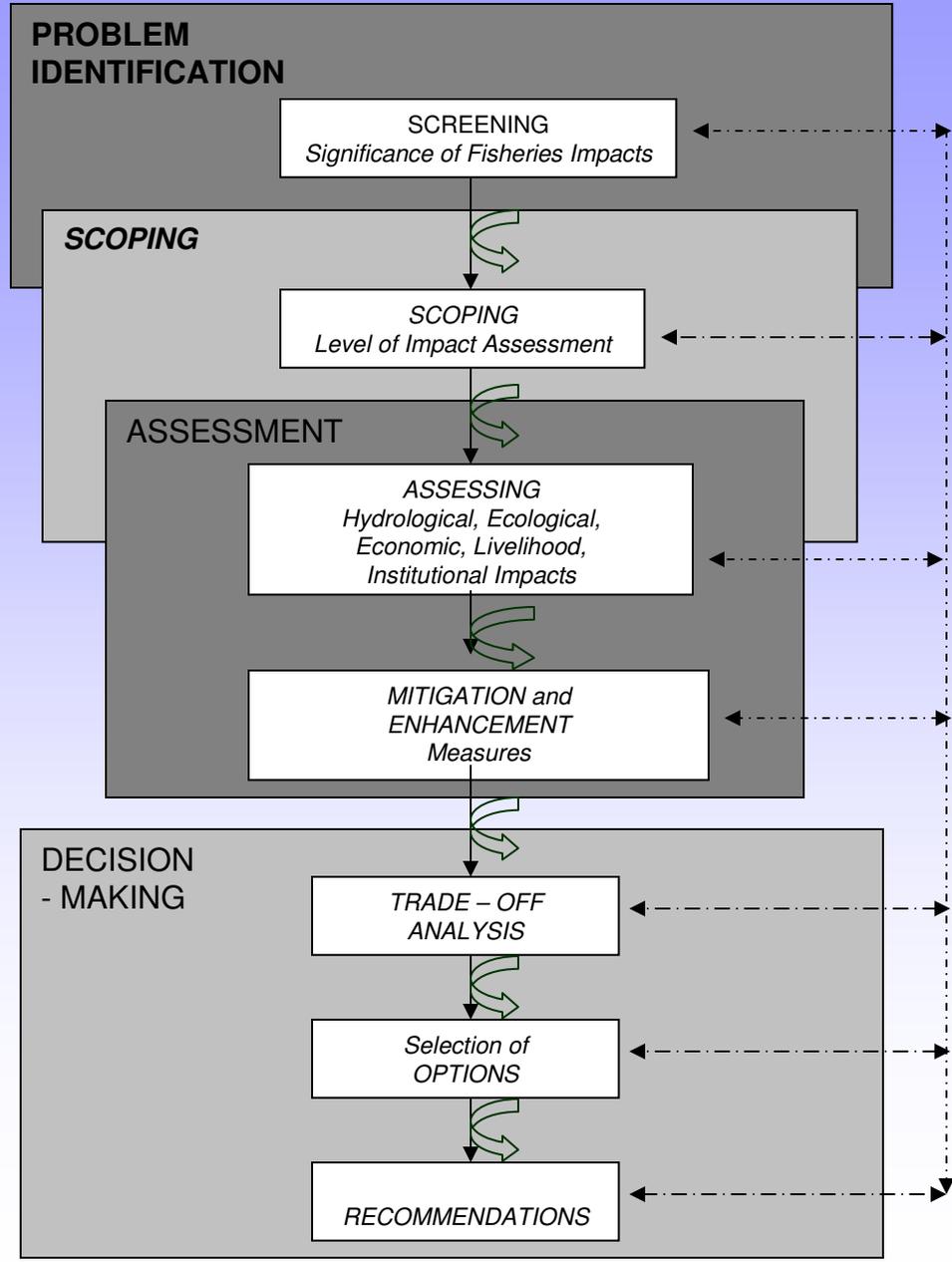
Key Lessons

5. The value of stakeholder involvement

- help ensure diverse values of water are included in decision making, particularly community interests and needs
- integrate indigenous and scientific knowledge
- identify, prioritise and scope issues at lower cost
- ameliorate conflicts and establish basis for on-going dialogue and negotiation
- establish ownership and commitment to mitigation or other management measures
- support an on-going iterative and adaptive approach given remaining uncertainty and knowledge gaps.

APIA Diagram

Stakeholders, Policy Makers



ITERATION and LEARNING

Researchers

Key Lessons

6. Recognise the need for location specific and differentiated policy responses
 - in Laos to maintain the contribution of fishing to the diversified livelihoods of most rural households, and its role as a ‘safety-net’ or activity of last resort for the most vulnerable
 - in Sri Lanka a policy mix to promote small-scale commercial fisheries in reservoirs and sustain the ecology and fishery of coastal lagoons, while maintaining fisheries as a ‘safety-net’ for the vulnerable.

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