Water-Food-Energy Nexus Approach: Towards Green Regional Cooperation in Southeast Asia

Bijon Kumer Mitra, Pham Ngoc Bao,
Tetsuo Kuyama, and Binaya Raj Shivakoti

Natural Resources and Ecosystem Services Area

International Forum for Sustainable Asia and Pacific
28-29 July, 2015

IGES
Institute for Global Environmental Strategies

Mekong River Basin (MRB): A Strategic Basin in Southeast Asia

- ✓ The 10th largest river in the world and home of over 70 million people.
- ✓ **Water Security:** Mekong countries enjoy abundant water resources(Annual avg. water availability approx. 475 billion cubic meter (BCM) estimated annual water withdrawal of 62 BCM).
- ✓ **Food security:** Enriched and fertile sediments makes the Mekong delta one of the largest rice bowl in the world.

  This basin is the most productive fisheries site in the world
- ✓ **Energy security:** In MRB, potential of hydropower is about 350 GW, and it is likely that the investment in hydropower dam will be increased in the coming year.

But, uncoordinated hydropower development raises fear of water and food insecurity in the region.

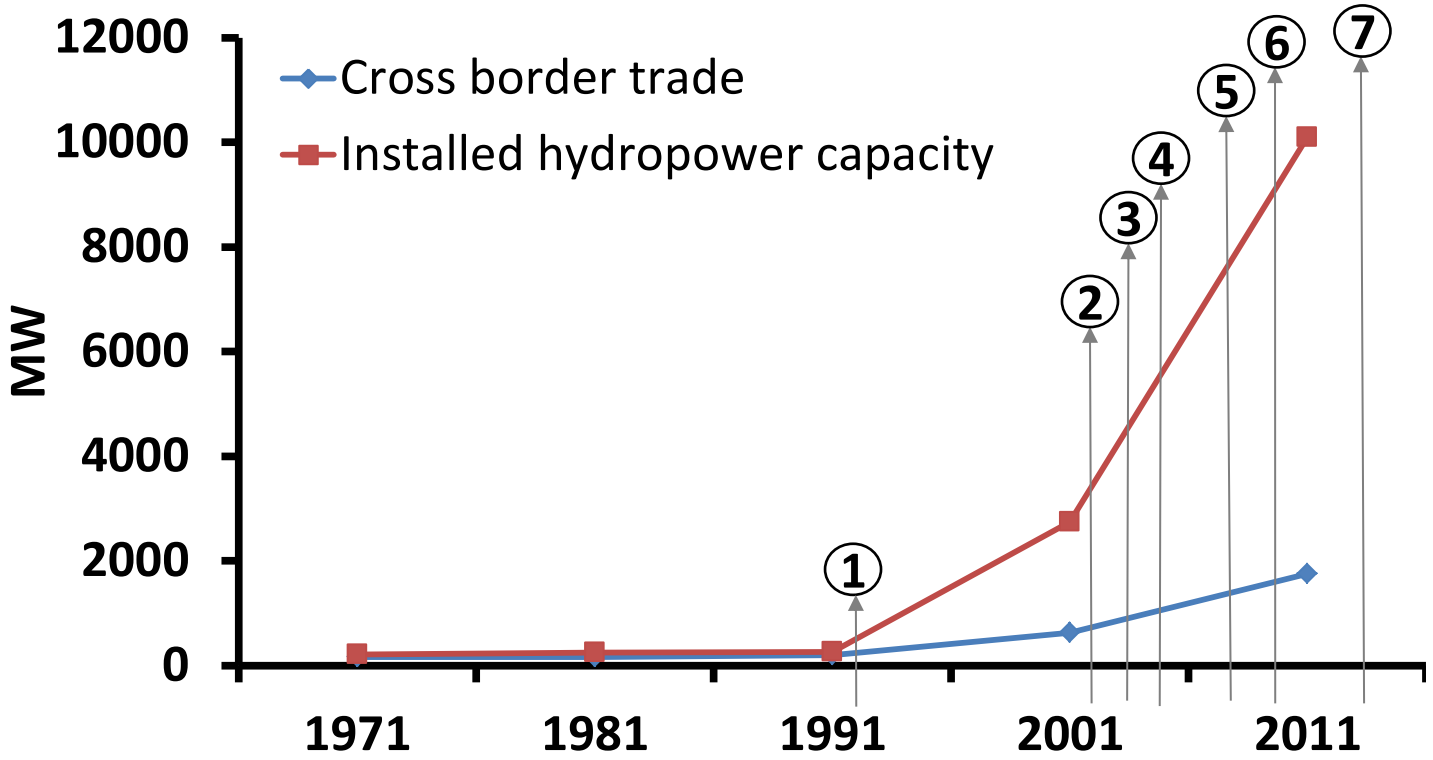
Source: Modified from Cronin & Hamlin 2012

Key Research Questions:

- What are the threats of the current uncoordinated and single-sector approach to sustainable resources management in the context of the Mekong River basin?

- What mechanisms can address these threats and enhance a nexus approach in regional integration and provide win-win solutions?

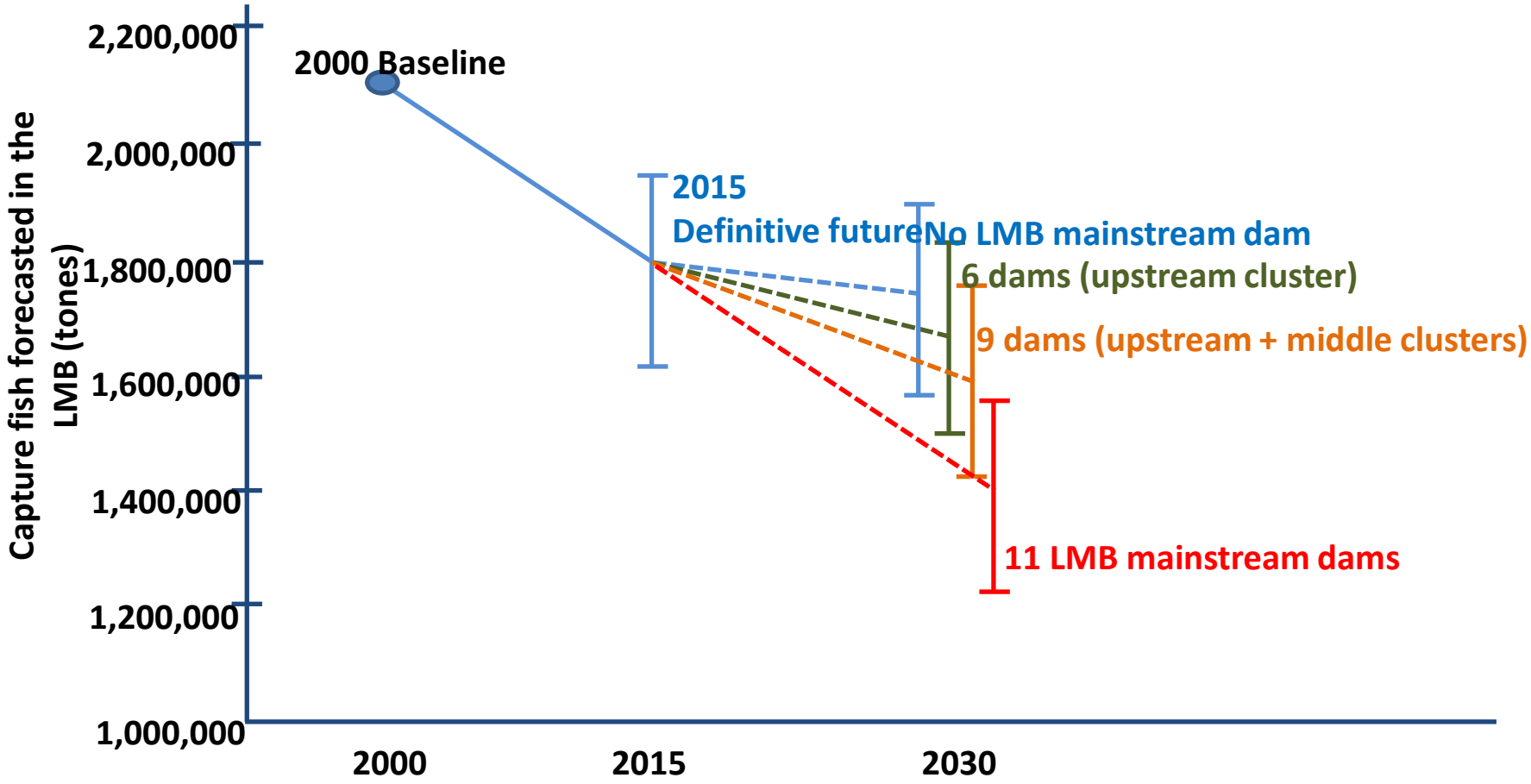
Key milestones towards GMS regional power trade cooperation



1- GMS Economic Cooperation Program launched (1992)
2- Regional Power Trade Coordination Committee (RPTCC) established (2002)
3- Intergovernmental agreement (IGA) on regional power trade ratified by all six GMS countries (2004)
4- Guidelines for the Implementation of Stage 1 of the Regional Power Trade Operating Agreement (MOU-1) signed (2005)
5- Road Map for Implementing the GMS Cross-Border Power Trading (MOU-2) signed (2008).
6- Second update of the GMS regional master plan completed (2010)
7- Regional Power Coordination Centre (RPCC) established in 2013 with legal identity dedicated to manage cross-border power infrastructure and trade in the GM

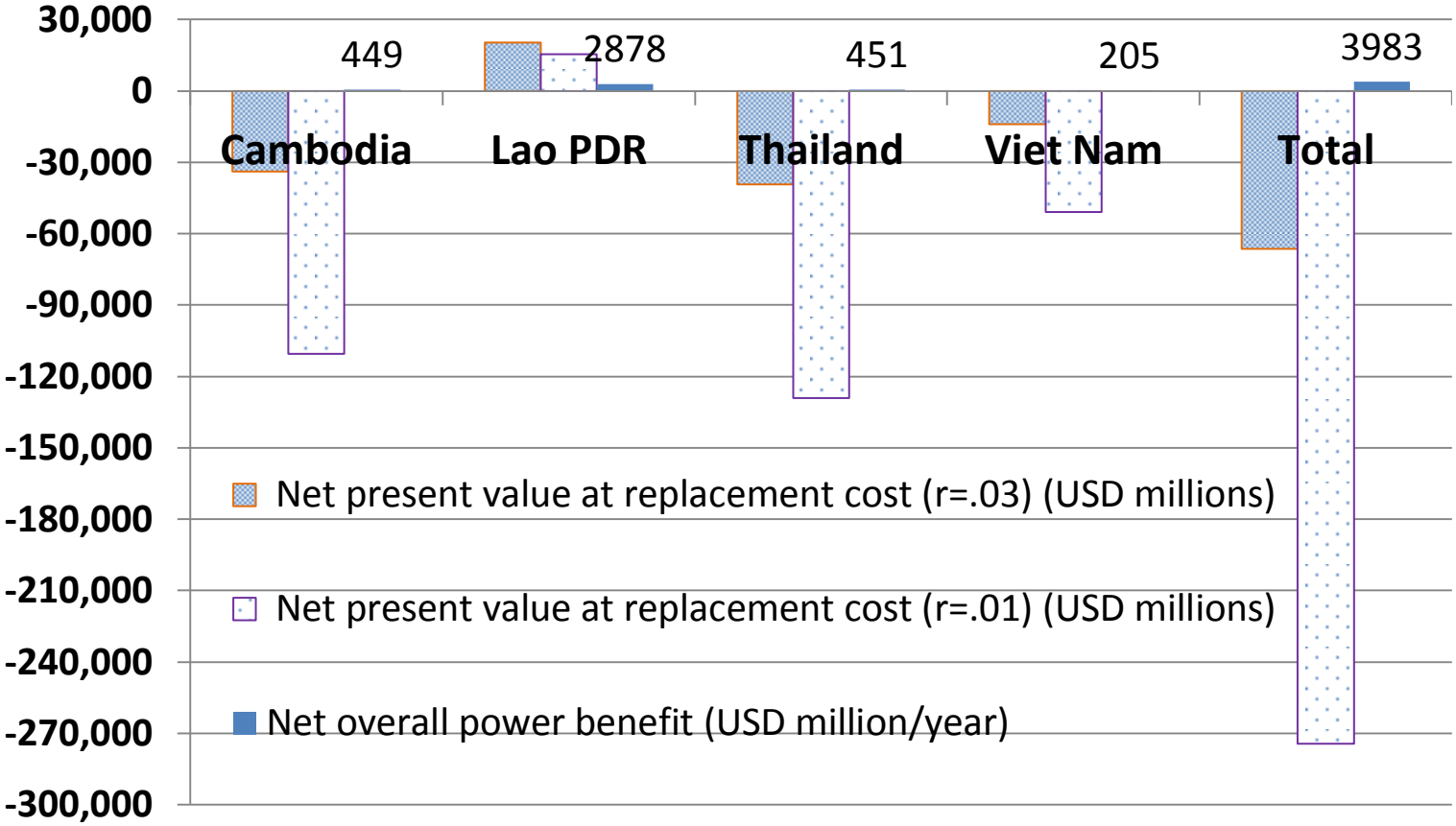
Source: Prepared by the authors based on information in ECA 2010

Potential incremental impacts of Lower Mekong Basin (LMB) mainstream dams on food security



Source: ICEM, 2010

Net economic benefits of hydropower dam construction on Mekong River



Source: Prepared by the authors based on data from Costanza, et al. 2011

Policy options for introducing Water-Food-Energy nexus in regional integration in the GMS.

- ✓ Introducing transboundary and national-to-local benefit sharings in the framework of a nexus approach that can motivate the riparian countries for sustainable cooperation.

- ✓ Adopting a transboundary EIA framework by the riparian countries will enable to improve environmental and social safeguard of hydropower projects in the region.

- ✓ Granting the MRC supra-national authority to enable transboundary water governance in the region

- ✓ Extending the geographical reach of the MRC to the most upstream countries (China and Myanmar)