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**Regional Workshop for Coordination of Research  
on  
Hydropower Development in the Lower Mekong Basin**

**by**

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## **CAMBODIA, status**

- **Cambodia is at its very early stage of energy development; in particular hydropower**
- **Current technical managerial and financial capacity is inadequate for large infrastructure planning and development**
- **Generally there is a severe lack of scientific knowledge and technical capacity in water resources and energy development; hydropower development in particular**
- **There is no particular academic national institution particularly dealing with water resources/energy/electricity generation**



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## **CAMBODIA, gaps**

- **Capacity to assess needs: option assessment, policy planning, political risk, institutional capacity, technical risk, social risk, economic and financial risk**
- **Capacity to develop policy and its implementation**
- **Local technical and financial capacity**
- **Scientific knowledge of natural resources (water, biodiversity, livelihood, etc.)**
- **Capacity to inform the public in major national infrastructure development**
- **Weak data and information system for planning, decision making and operation**
- **Weak legal framework for public participation**



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## **CAMBODIA, recommendations**

- **Need long term support in:**

- **Higher education in water and related resources, river and lake biology (EIAs, general environmental impacts)**
- **Curriculum development support to higher education in water and related resources**
- **Joint capacity development with international university in water resources related to:**
  - **Large infrastructure development**
  - **Fishery management related to large reservoirs and dams**
  - **Sediment and siltation**
  - **Tools development and their sustainable use**

- **Priority areas:**

**Long term: curriculum development for national universities in water sector**

**Short to medium term: Inter-university cooperation for specific program within the Mekong region and internationally**

**Advisory expertise for large scale infrastructure development such as mainstream dam**



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## **LAO PDR, status**

- **National University of Laos**

- **higher education for social and economic development of Lao PDR**
- **promote and perform research in natural and social sciences**
- **preserve and expand arts, culture and traditions of the multi-ethnic nation**
- **provide technical services to the society**

**11 faculties, incl. 78 undergraduates, 7 Masters and 2 PhD programs**

➤ **33000 students, 1700 academic staff**

**4 other universities**

**Earth Systems Lao (ESL): environmental technology, information and services**



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## LAO PDR, gaps

**General lack of understanding on:**

- **Water – hydropower development linkage**
- **effects of climate change on water**
- **water foot prints**
- **links between hydropower development and environment (fisheries, biology, agriculture, etc.)**



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## **LAO PDR, recommendations**

- **Information network and information sharing between academia, practitioners and decision makers, on national as well as on a regional level**
- **Pilot and/or demonstration projects for promoting best practices and understanding**
- **Training programs on linkages and impacts from hydropower on the environment and the water resources**



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## **VIETNAM, status**

- **30 universities with programs related to water resources and hydropower**
  - **5 programs focusing primarily on hydropower**
  - **30 programs focusing on environment**
  - **6 programs focusing on hydrology and water resources**
  - **7 programs focusing on other issues, like hydropower construction**
  - **Standard and advanced academic research programs**

**No research activities from private sector**



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## **VIETNAM, gaps**

- **Use of scientific methods to handle environment-related issues, pollution control and natural resources**
- **Knowledge and skills in policy-making, social aspects, planning and the interactions between human beings and nature**
- **Management and knowledge of natural habitats and renewable resources, also on law and policy, administration, communications and public relations**
- **Use of cost-benefit analysis, environmental impact assessments and similar analytic tools for studying how economic developments affect the environmental system.**



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## **VIETNAM, recommendations**

**Develop academic programs to:**

- **improve knowledge and research capacity on environment related issues, including social sciences and the interactions between human beings and nature**
- **provide knowledge and skills in policy-making, politics, law and economics**
- **improve skills in planning, developing, managing, and evaluating programs to protect and regulate natural habitats and renewable natural resources, including administrative and communications skills, and public relations**
- **improve knowledge on cost-benefit analysis, and how to analyze water footprints of different development options and alternative resource management strategies**



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## **THAILAND, status**

- **Comprehensive courses, curricula, education and training programs and research projects or research networks in Thai universities and institutions on all topics related to hydropower development**
- **In general, Thai universities today concentrate their work mostly on sustainable development and stakeholder participation, and specific local issues and problems in natural resources/WR planning and development, integrated/comprehensive/holistic management, good governance, and conflict prevention, resolution and management**
- **Increasing concerns, awareness and reallocation of resources to support studies/research on negative environmental, social and health impacts, climate change adaption and mitigation studies in recent years**
- **Asian Institute of Technology**
- **Mekong Institute**



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## THAILAND, gaps

- **Common understanding of the term "Water Footprint"**



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## **THAILAND, recommendations**

- **Urgent need for more research and education/training programs on the development of regulations and guidelines on the expanded quality of life measure/indicator on the Health Impact Assessment (HIA)**
- **Increased attention to climate change, impact assessment and response/adaption and mitigation measures, key performance indicators and parameters, CDM, greenhouse gas reduction, and clean energy.**
- **Increased focus on natural disaster mitigation and management, good governance, and conflict prevention, resolution and management**



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## **Cross-cutting issues?**

- **Interaction between the human and the nature**
  - **physical and environmental impacts**
  - **socio-economic impacts**
- **Climate change and adaption**
- **No linkage between research institutions and private sector**
- **Public information and stakeholder involvement**