

Interdisciplinary Water Education and Research

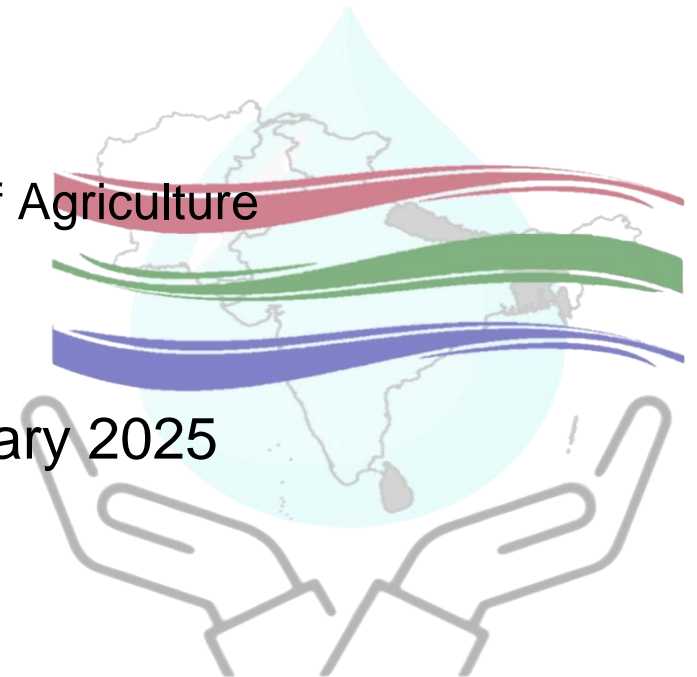
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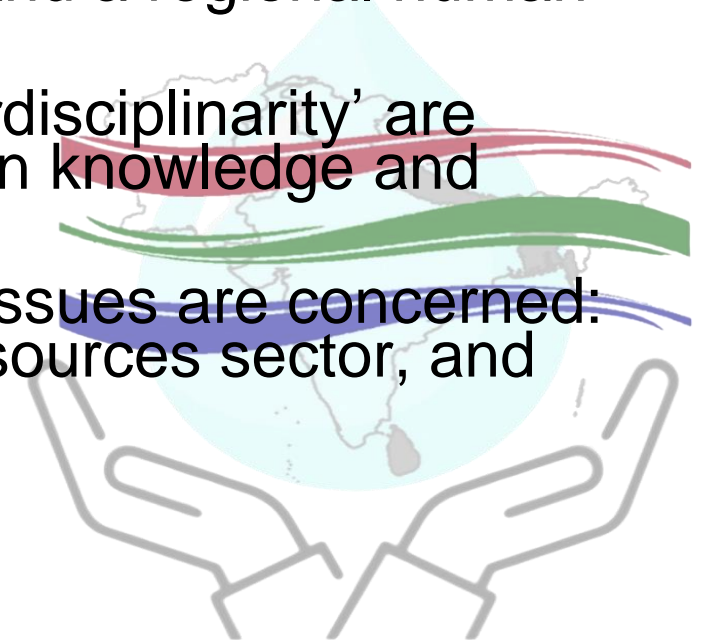
University of Peradeniya, Sri Lanka

2nd SAWA Regional Workshop, 29th January 2025



Introduction

- A workshop on 'IWRM in South Asia' organised by SaciWATERs in Colombo, Sri Lanka in December 2002, yielded several observations regarding the status of IWRM in the South Asian countries that shaped the Crossing Boundaries programme, and led to the first reader published by the project, IWRM, Global Theory, Emerging Practice and Local Needs.
- It was argued that regional evolution and elaboration of the IWRM concept in South Asia required a regional knowledge base and a regional human resources base.
- It was observed that as far as 'integration' and 'interdisciplinarity' are concerned, there were huge gaps in the South Asian knowledge and human resource base.
- A very major gap existed as far as gender & water issues are concerned: in terms of both female participation in the water resources sector, and knowledge and research on gender & water issues.



The main focus human capacity building programme on IWRM and gender & water issues in South Asia

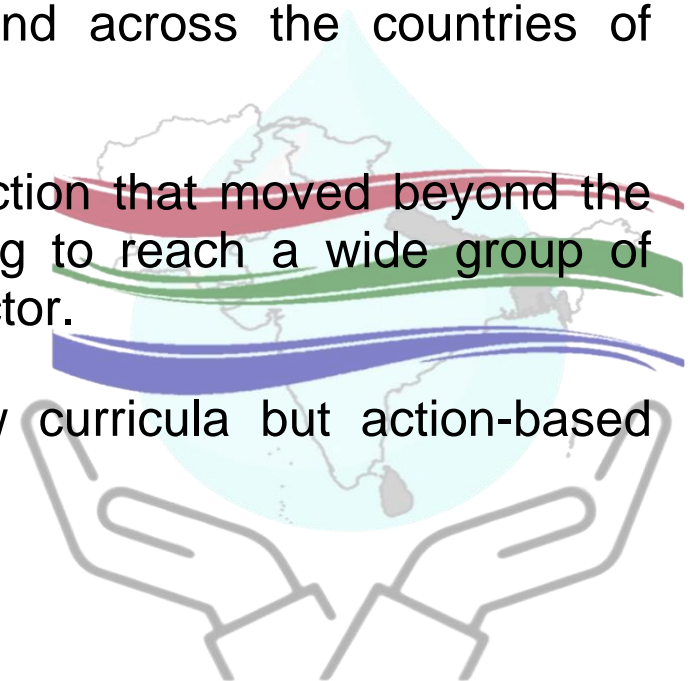
1. To strengthen existing local and sub-regional initiatives and institutions working on integration, interdisciplinarity, and innovation regarding water resources (support the 'social carriers' of the paradigm shift);
2. To network and support these initiatives and institutions at the regional level to generate critical mass and provide a platform for lively interaction of the South Asian IWRM and gender & water community;
3. To provide links with and inputs from the international IWRM and water resources knowledge and human resources base to make maximum use of already available knowledge and capacity.



CROSSING BOUNDARIES

Regional capacity building on IWRM and gender & water in South Asia

- In 2006, a group of South Asian and Dutch university colleges began the unique 5-year Crossing Boundaries programme, its title reflecting the boundaries to be crossed in meeting the challenges in water management in South Asia.
- With financial and policy support from the Dutch Ministry of Foreign Affairs (DGIS), the programme set out to create a paradigm shift in water resources policy that could manage regional water problems and build experience across within and across the countries of Bangladesh India, Nepal and Sri Lanka.
- The programme created a new framework for knowledge and action that moved beyond the boundaries of conventional capacity building programmes, aiming to reach a wide group of users who were professionally and politically active in the water sector.
- This new programme sought not only to build innovative new curricula but action-based research and outreach initiatives.



Set of integrated initiatives

- **EDUCATION** supporting new postgraduate programmes in the field of Integrated Water Resources Management (IWRM) at universities with existing commitment and professional standing in water and engineering;
- **Fellowships** for women candidates, called SAWA fellowships (South Asia Water fellowships), within an academic structure integrating Masters, Post-doctoral diplomas and PhD opportunities;
- **RESEARCH:** developed through new training in: field research methodology and interdisciplinary and innovation- oriented research, in centres, plus annual research workshops and international conferences held in different partner countries across the region;



The partner institutions

- The SaciWATERs consortium that provided an umbrella coordinating structure from its Hyderabad office, to support, promote and integrate the work of the above partner institutions, and build a wider network for IWRM in South Asia
- The Centre for Water Resources (CWR), Anna University, Chennai, India
- The Postgraduate Institute of Agriculture (PGIA), University of Peradeniya, Sri Lanka
- The Institute for Water and Flood Management (IWFM) at the Bangladesh University of Engineering and Technology (BUET) together with the Bangladesh Centre for Advanced Studies (BCAS) both in Dhaka, Bangladesh
- The Nepal Engineering College (NEC), Kathmandu, Nepal
- The Tata Institute of Social Sciences (TISS) which has played an important role in training
- Irrigation and Water Engineering group (IWE), Wageningen University, The Netherlands



Concepts of various levels of integration

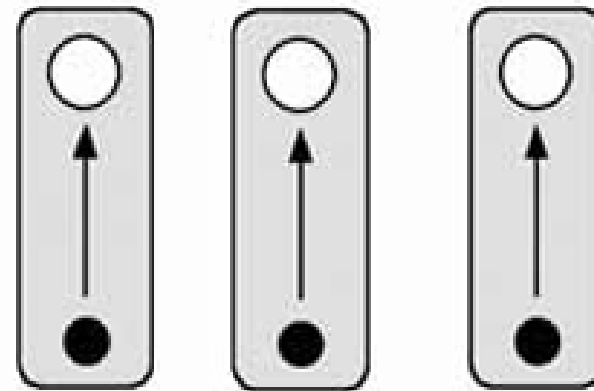
- Disciplinary
- Multidisciplinary
- Participatory
- Interdisciplinary
- Transdisciplinary



Disciplinary studies

disciplinary

- Within one academic discipline
- Disciplinary goal setting
- No cooperation with other disciplines
- Development of new disciplinary knowledge and theory

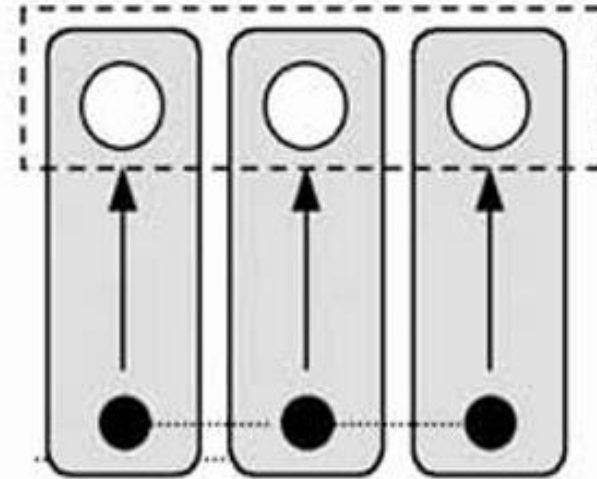


projects that take place within the bounds of a single, currently recognized academic discipline

Multidisciplinary studies

multidisciplinary

- Multiple disciplines
- Multiple disciplinary goal setting under one thematic umbrella
- Loose cooperation of disciplines for exchange of knowledge
- Disciplinary theory development

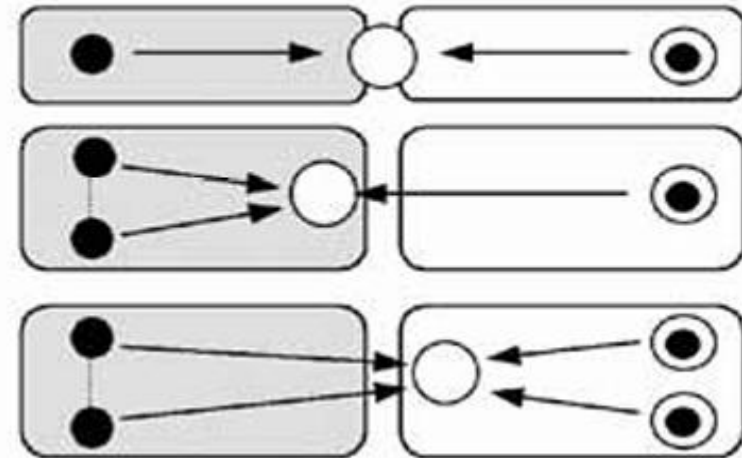


Projects that involve several different academic disciplines researching one theme or problem but with multiple disciplinary goals

Participatory studies

participatory

- Involves academic researchers and non-academic participants
- Exchange of knowledge, knowledge bodies not integrated
- May be disciplinary or multidisciplinary
- Not necessarily research, goal may be academic or not

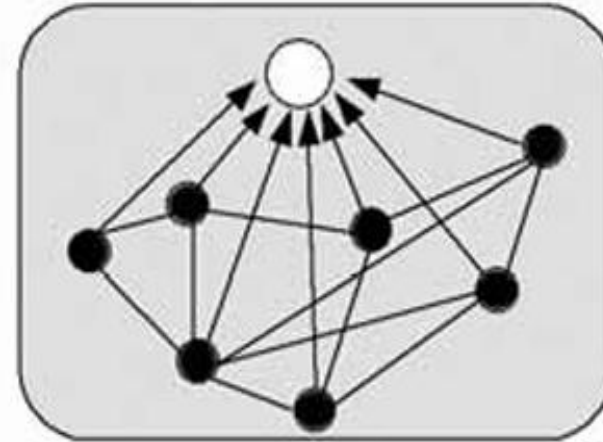


Projects that involve academic researchers and non-academic participants working together to solve a problem

Interdisciplinary studies

interdisciplinary

- Crosses disciplinary boundaries
- Common goal setting
- Integration of disciplines
- Development of integrated knowledge and theory

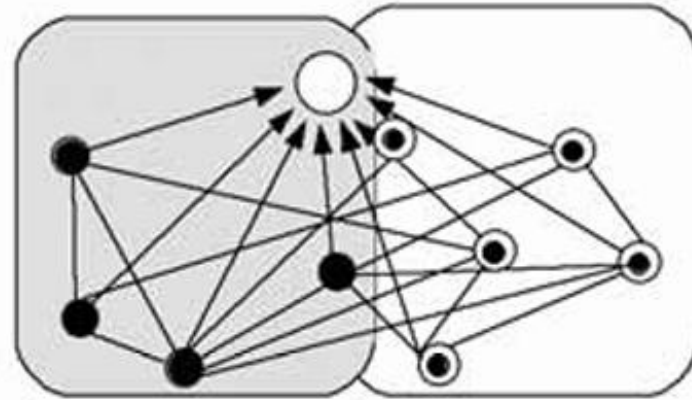


Projects that involve several unrelated academic disciplines in a way that forces them to cross subject boundaries to create new knowledge and theory and solve a common research goal.

Transdisciplinary studies

transdisciplinary

- Crosses disciplinary and scientific/academic boundaries
- Common goal-setting
- Integration of disciplines and non-academic participants
- Development of integrated knowledge and theory among science and society



Projects that both integrate academic researchers from different unrelated disciplines and non-academic participants to research a common goal and create new knowledge and theory.

Major Changes to the Curriculum

Three new courses were introduced to existing programme at BUET, CWR and PGIA

- **Field Research Methodology**
- **Gender** issues in water resource management
- Integrated Water Resources Management

New post graduate course on Interdisciplinary water resources management was commenced at nec in July 2007

3.1. Major steps /initiatives taken by the CWR for commencing the IWRM Course

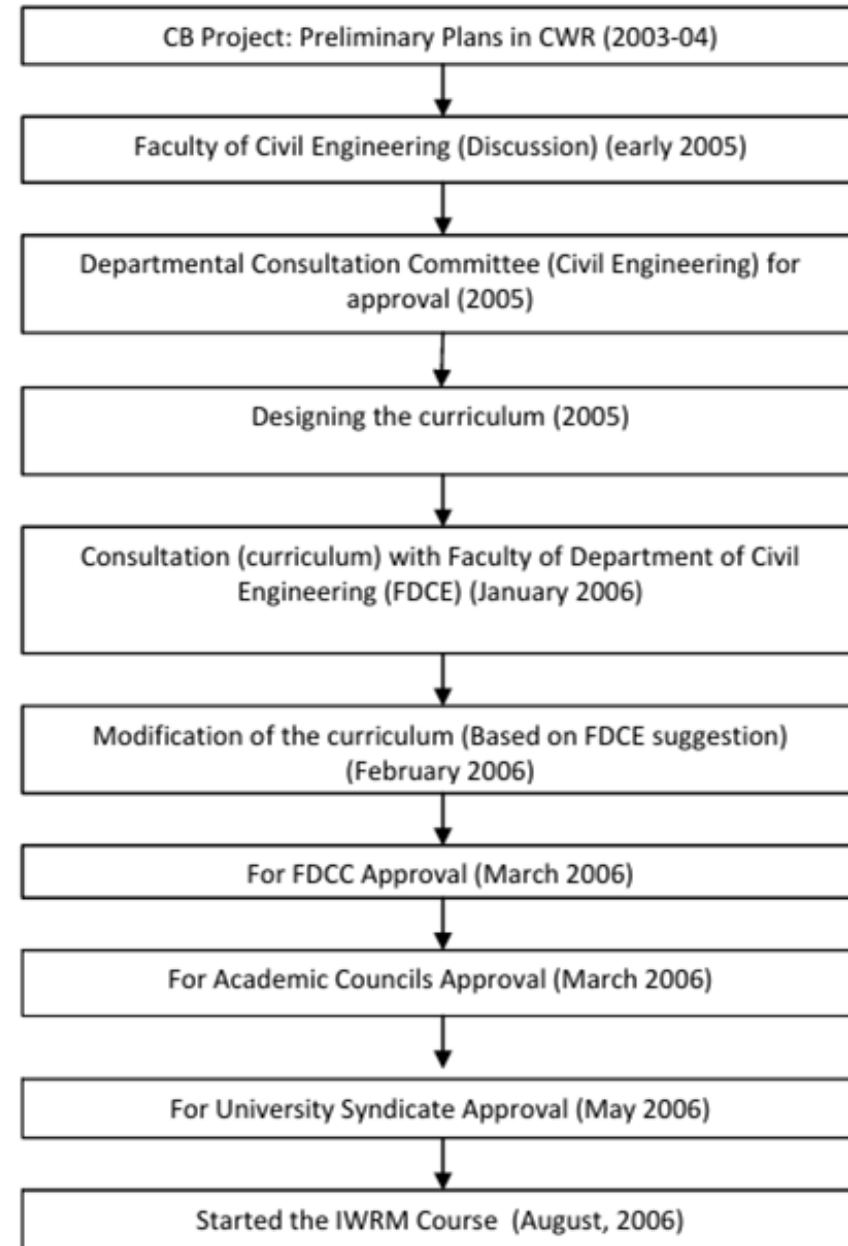
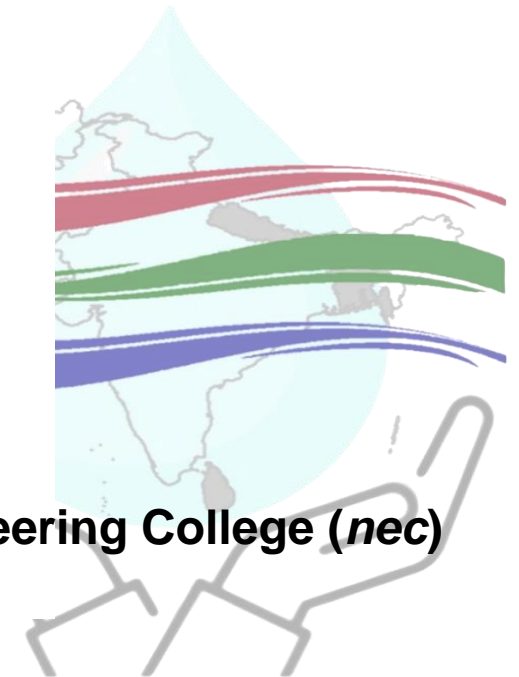




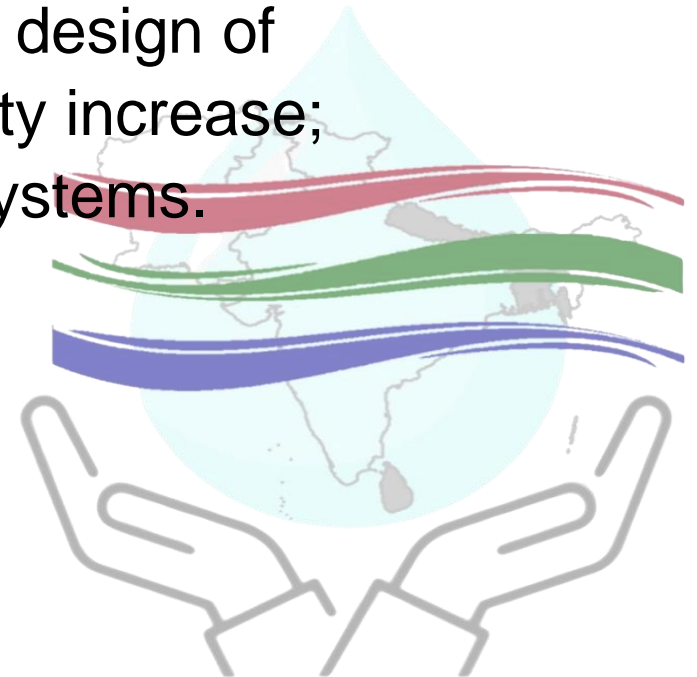
Figure 9.1. Process followed in the identification and development of research questions by the students at Nepal Engineering College (*nec*)



Bangladesh University of Engineering Technology (BUET)

Research programme: Sustainable management of land water and ecological resources in the south-west region of the country.

Priority issues included: Participatory planning and decision-making in water management; decision support tools; design of eco-friendly infrastructure; water allocation, productivity increase; and regulatory measures, operation and monitoring systems.



Centre for Water Resources (CWR)

Research programme: 'The Impact of Urbanisation on Water Resources and A study on Chennai Metropolitan Area'.

Priority issues in this field included: Groundwater markets and hydrological and social impacts of extraction and transfers in the sub-urban areas; groundwater contamination problems and health risks; degradation of urban water bodies and their impacts; flooding in urban areas; and municipal solid waste disposal and groundwater contamination issues.



Nepal Engineering College (nec)

Research programme: 'Livelihood Security and Changing Patterns of Water Use in the Upper Bagmati Basin', with students and staff developing research questions in 26 different cross-cutting issues in this problem context.

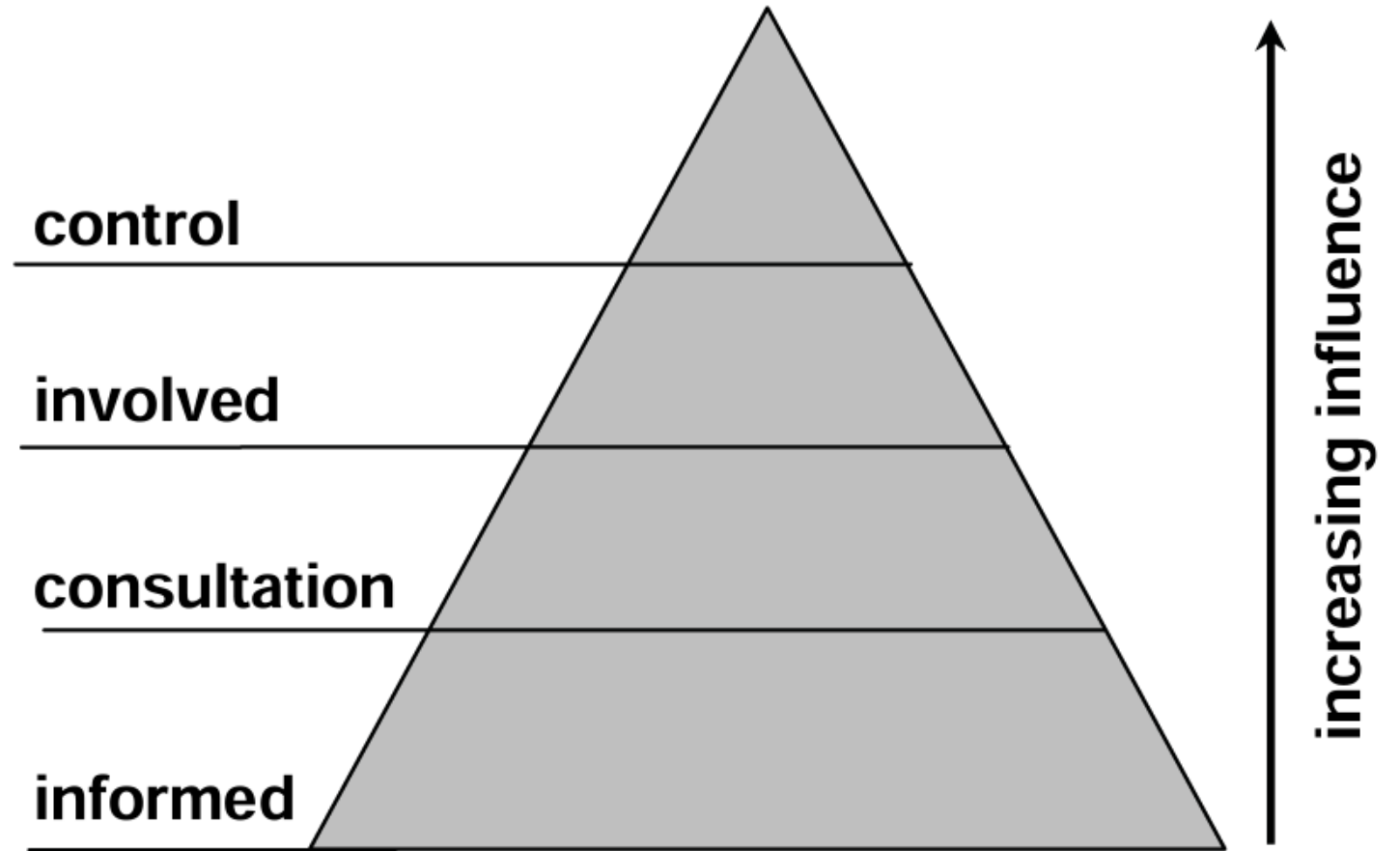


Post Graduate Institute of Agriculture (PGIA)

Research programme: Improve water quality of the Mahaweli river, specifically to introduce technically sound, economically feasible, environmentally friendly and socially accepted approaches and techniques to reduce the pollutant load to the reach of Mahaweli from Kotmale dam to Randenigala reservoir



Level of Stakeholder Participation



Readers developed under the CB Project

- Integrated Water Resources Management: Global Theory, Emerging Practice and Local Needs
- Drought in South Asia
- Gender And Water in South Asia
- Water Access and Conflicts: Implications for governance
- Water And Ecosystems
- Water and Health
- Water Resources Policy In South Asia: Analysing Regional And Country Experiences
- Informing Water Policies: Case Studies from South Asia
- Globalisation Of Governance
- Women Water Professionals in South Asia



Discussion

- Challenges
- Impacts etc.



Thank You

