

EU Water Initiative – Research Component

**EU-INCO water research from FP4 to
FP6 (1994-2006) – a critical review**

*Other evidence from the reading of
documentation by the Review Panel and from
other experience of panel members*

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Introduction

The IWRM review panel was aware that the issues being addressed by the terms of reference of this evaluation had been encountered by many other water scientists and professionals. In this section the experience of a number of members of the global water science community was sought to help situate the analysis of the panel and provide other ideas of importance in developing recommendations for EU-INCO – that is specific international cooperation in the Environment Theme of the Specific Programme 1 ‘Cooperation’ as part of the 7th Research Framework Programme.

Higher education is a key communications nexus. Mindsets of senior staff are reflected in curricula and in the assumptions and learned approaches of the graduates that emerge. The certainties of the *hydraulic mission* enjoyed a very long reign impacting billions of people. It was in place longer and with a more extensive reach than say - communism. The footprints of these ‘eternal’ certainties in the curricula of the engineering sciences and to a lesser extent economics in partner countries are proving difficult to reform.

Communicating with scientists in Higher Education Institutions

Problems caused by the mode of HE in engineering in South Asia and a response - regional capacity building project in South Asia Ajaya Dixit

The science community in Higher Education Institutions in Partner Countries plays a very important role in filtering new science knowledge. Scientists in these institutions determine research agendas and the progressiveness or not of first and second degree programmes as well as the focus research degrees.

In a review of higher education in South Asia SACIwater (2002) identified three characteristics. First, higher education is a product of colonial and post-colonial history. Some of its characteristics are the emergence of government-controlled and government-focused education systems, of a 'modernisation' perspective orienting itself to western science and technology, disregarding local knowledge, with a strict emphasis on engineering and large-scale infrastructure. Hierarchical organisation and pedagogical style, gender blindness and male domination in faculty and student population are the norm. The bias against women being recruited into the professions after graduation can be a serious problem. Secondly, water science education is determinedly mono-disciplinary and technocratic in outlook. Thirdly, water resources development is perceived as a technical process without considering how interest groups interact and negotiate. Particular and often inappropriate development trajectories are the result.

Local initiatives such as the Regional Capacity Building (RCB) project involving the countries of South Asia (SACIwaters, 2002, 2004) aimed to contribute to a paradigm

shift in water resources management in South Asia by developing constructively engaged IWRM: Specifically the project aimed to:

1. Educate a critical mass of South Asian water professionals trained in interdisciplinary analysis and design of intervention strategies for integrated and gender-sensitive water resources management to contribute to a more balanced gender composition of the community of South Asian water professionals.
2. Conduct innovation and social learning focused research in concrete development intervention settings, in partnership with water resource users and other stakeholders, as the core element of the capacity building and
3. Develop a knowledge base for capacity building on IWRM and gender and water issues, and provide a platform for exchange, discussion and collaboration at the South Asia level through networking, publications and workshops/conferences.

The good dams discourse: national determinants of international IWRM

The hot discourse on dams generally reflects an extreme case of the contention between an *hydraulic mission* version of modernity and the ideas in currency in *late modernity* - since 1980. Dipak Gyawali when Minister of Water Resources in Nepal convened a review to determine the extent to which the regulations and procedures of Nepal were in accord with the *Guidelines* of the World Commission on Dams. (World Commission on Dams, 2000) The reviewers came from three fraternities - the dam builders (industry), dam managers (government power, flood control and irrigation bureaucracies) and dam critics (activists opposed to large interventions). It was found that Nepal's laws and procedures -- thanks to the decade long water disputes and debates in the 1990's regarding the controversial Arun-3 hydroelectric project and the Mahakali Treaty on the river with the same name with India -- were either in accord or in some cases in advance of the *WCD Guidelines*. As citizens of an upstream state, the panel unanimously rejected the seventh strategic priority, which, by providing a very inflexible interpretation of the 'no harm' principle, was seen as biased against the small upstream riparian (Dixit *et al.*, 2004).

Gabicikovo-Nalgymaros Dam – pros and cons –Slovakia and Hungary: politicised international IWRM

The Gabicikovo-Nalgymaros structure is a major dam built on the Danube River below Bratislava the capital of the Slovak Republic. Originally the dam was intended as a joint project of the former Czechoslovakia and Hungary. An international treaty was signed by both parties in 1977. Construction started in the 1980s. By then the project had attracted major controversy - above all from environmentalists. The green movement in Hungary. After the fall of its communist regime Hungary stopped all work. Czechoslovakia, and later the independent Slovak Republic [separated from the

Czechoslovakia in 1992] continued to build the dam despite opposition from its domestic environmental movements.

The Dam was completed in the mid-1990s and after ten years of experience there is evidence that the project has not been successful but it is not a total failure. It is a typical example of an ambitious project rooted in the communist tradition in Central Europe and completed during the transition to a more liberal political-economy.

Positive outcomes include:

- 1 The structure should reduce flood impacts during spring when the Danube brings water from the Alps.
- 2 The power-station produces 700 megawatts of electricity equivalent to one nuclear reactor.
- 3 Ships from the Black Sea can now reach Vienna and Western Europe. This was not possible in the past because of the impediment of the 'inner delta' below Bratislava.
- 4 Water in the reservoir can be used for irrigation of intensive crops in the lowlands of southern Slovakia.

Negative outcomes include:

- 1 Large area of unique flood forest in southern Slovakia has been damaged by the construction of the dam.
- 2 The total cost exceeded Euros 700 mn - much more than expected
- 3 Underground water levels decreased in some area of the region and thus one of the biggest reservoirs of drinking water in central Europe has been endangered.

The project was conceived in the era when industrial and economic priorities held sway. Such projects epitomised progress and efficiency for Czechoslovakia in the 1980s. At the beginning of the twenty-first century decentralisation, diversification and environmental sustainability have become the driving ideas in the new economies of Central Europe. (Source: Pavel Novaček)

Mexican experience in the transition from the hydraulic mission paradigm: An example of the politicised context in which EU-INCO water research has to engage; national engagement

The National Water Commission or the Comisión Nacional del Agua [CNA] is Mexico's highest water authority. It operates at a federal level and is responsible for water rights allocation, setting water prices and tariffs – as well as collecting them. It is also in charge

of basic infrastructure construction and maintenance, watershed sharing of waters in times of shortage.

The CNA delegates important water research tasks to the recently decentralised institute, the Instituto Mexicano del Agua [IMTA]. Both institutions are staffed by highly qualified professionals. CAN commands substantial political influence and power. The DG sits in the President's cabinet. Both CNA and IMTA are typical examples of very entrenched institutions of *industrial modernity* and are still engaged in their 'hydraulic mission'.

It is a paradox that the recently published reforms inspired by the National Water Law of Mexico suggests that Mexico is already engaged in a reflexively modern approach to water resources management. The legislation devolved substantial power and voice to local authorities and citizen groups. The law establishes an 'ad-hoc' water council for each of the 13 large basins of the country. Each should also have representatives from the business community [private sector], academia and local government. The law also has strict provisions for transparency and accountability.

These institutional initiatives contradict the strictly vertical and authoritarian ways of the CNA. This paradox expresses well the confrontation between the new political mood of the country and the old institutions established mainly in the nineteenth and early twentieth centuries. Emerging social and political priorities of the country are reflected in the new water law but there will be protracted discourse before they will be adopted by the CNA. (Source: Cassio Luiselli)

Chinampas, Mexico City - adaptation to environmental degradation

The 'Chinampas' [Floating gardens] of Xochimilco, south-east of Mexico City is a good example of 'constructive engagement' with a locally evolved technology of water resources management for landscape conservation and food production. The Chinampas are in full production although they are struggling to survive on the shores of Lake Xocwmilco south-east of Mexico City.

The Chinampas is an ancient mode of using mud and water to produce corn, vegetables and flowers in a very intensive organic way. Each chinampa [garden plot] can produce up to three crops per year. A chinampa is a small plot of rich mud arranged in chequered islands in the freshwater lagoon. They are separated by a regular layout of canals, which can be navigated by flat bottomed boats. The chinampas existed in the tenth century. They started to disappear by the middle of the twentieth century because of the encroachment of urban sprawl on to the lake shores and other areas in Mexico City.

By the 1980s a strong alliance of NGOs, local people [chinamperos] and the academic community managed to convince the Government to pass a decree protecting the chinampas. Soon after, UNESCO declared the whole of Xochimilco lakes a World Heritage Site and the chinampas had a new lease of life.

The chinampas are still under threat. A strong constructive engagement could be activated to attract new activity and rescue the landscape and culture for the twenty-first century. (Source: Cassio Luiselli)

Evidence from the review of documentation and from communication with project coordinators

The evaluation has also been based on a series of questions circulated to the coordinators of the EU-INCO water research projects. There follows a selection of the responses received.

Extracts are included below as boxes to provide a flavour of the quality of the coordinators grasp of the EU-INCO principles and their engagement with the application of their research. The main purpose is to demonstrate the commitment of the coordinators and the research teams to communicating the results. The good intent is evident. It is also evident in a number of their comments that they were aware of the political challenge of communicating and having impact.

There is evidence of all of the following types of constructively engaged communication in the following comments of research project coordinators:

Among project team

It is important for water professionals to increase their understanding of broader social, economic and political context. Other participants (social and economic scientists) need to be better informed about water resources issues and challenges. Being fully aware of the overall objectives and purposes is extremely important. It is necessary to have an integrative vision.

Project leadership with policy makers

Data and results should be translated into a readable, concise language to policy makers and being able to sensitize them to water resources management challenges.

Project team interacting with citizens (local residents)

How to sensitize people to water issues? How to convey science and project findings to normal people to change their attitudes and shorten the input time? It is necessary to have the project relevant to normal life problems (tools: public awareness campaigns, education curricula, etc.).

Regional communication

Developing common understanding among the cross-sectoral country team members of the water issues, challenges and management. [Basim A. Dudeen]

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