

Qualified professionals are a must for sustainable water management

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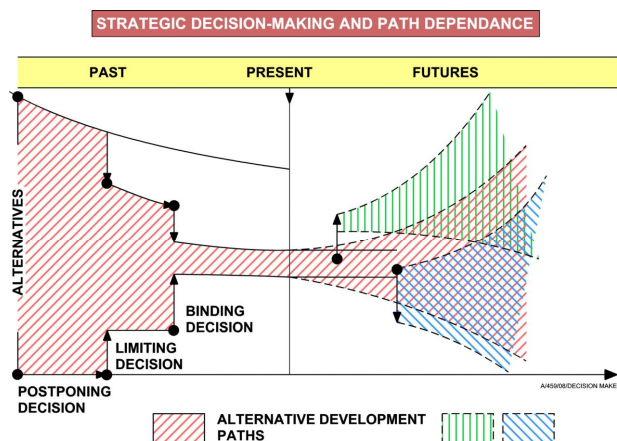
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Capacity building and institutional development

UNDP states that “Capacity is the ability of individuals, groups, institutions and organizations to identify and solve development problems over time”. The International IHE –UNESCO Symposium in 2007 made the following policy recommendations: (i) Capacity and Knowledge Development require long-term time horizons (ii) Developing countries must become more independent in their own problem-solving (iii) Capacity and knowledge development is a goal in itself, not just a tool (iv) Start early: At primary school and beyond (v) Make knowledge and capacity development more effective: understand how it works.

For **institutional development** of water supply and sanitation services we have several requirements. At the utility level, we need operative technology, appropriate organisations and adequate cost recovery. In most countries local governments play a major role as the owner of the public systems, while central government policies guide sectoral development. Citizens are to be seen as the ultimate owners of the systems.

One basis of the institutional development of water services is the concept of **New Institutional Economics** where organisations are actors through which institutions come into existence. Institutions provide the ‘playground and rules’ for the responsible organisations to manage services successfully. As summarised by the Nobel Laureate D.C. North institutions are the rules of the game while organisations are the players.



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Fig. 1. Path dependence and related decision-making.

Another framework (Fig. 1) related to capacity building is the **path dependence theory**. As North points out, history matters as “time and context”. Path dependence results in water infrastructure systems limiting the potential, desirable and plausible futures. Sandelin (2006) suggested that water utilities should pay more attention to capturing **tacit knowledge**, and sharing it with new employees.

A survey on Finnish water services education and research indicated that today's education focuses on technical systems and treatment technologies. Yet, the most important future tasks of water services engineers were expected to be especially in management and institutional issues. In most cases the graduates fairly soon shift towards management-type duties after initially performing conventional design and planning duties. As an example Fig. 2 shows the relative importance of **knowledge, skills and attitudes** as seen by utility managers. Attitudes were considered most important, while all three dimensions are needed.

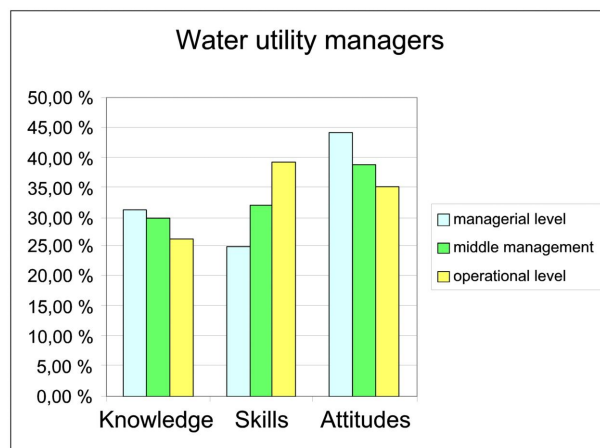


Fig. 2. Relative importance of knowledge, skills and attitudes for viable water services as seen by utility managers (n=8).

Suggested approaches

Integrated Water Resources Management (IWRM) is one of the basic water-related policy approaches. Water resources management is largely a regional, national and international issue while water services is more of a local one (Fig. 3).

Discussion

Water education and research should be expanded to include **diverse multi-, pluri-, cross-, inter- and multi-disciplinary approaches, and transdisciplinarity**. In addition to **formal education**, the principle of **life-long learning** should be kept in time. As for sustainable water management, we should continuously ask which general overall principles may be valid and which practices and strategies are mostly needed at the local level.

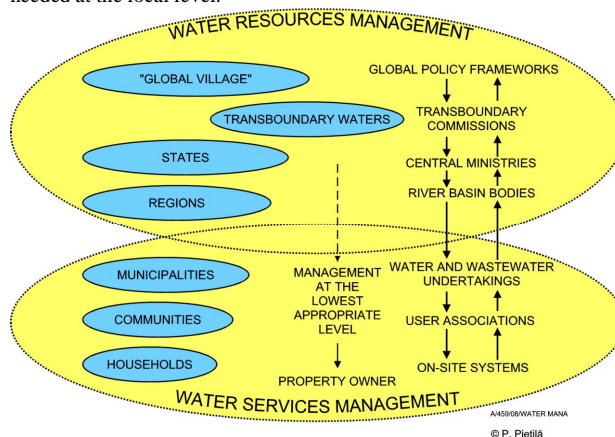


Fig. 3. Framework for water services and water resources management.

Conclusions

- (i) A more holistic approach to water policies – both water services and water resources – should be pursued.
- (ii) In any policy and institutional framework qualified professionals will be the basic requirement of development.
- (iii) Water research should be expanded to include more diverse multi-, pluri-, cross-, inter- and multi-disciplinary approaches.
- (iii) Current curricula in water and sanitation services should be expanded to cover institutional and management issues, policies and best practices.

We have a good reason to believe that more interaction would be useful between expert of water services and water resources management over various professional and educational disciplines.