



International Network for Capacity Building
in Integrated Water Resources Management

Applying Knowledge Management

A tool for Capacity Building Networks in Integrated
Water Resources Management

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Acronyms

Cap-Net	International Network for Capacity Building in IWRM
GWP	Global Water Partnership
IWRM	Integrated Water Resources Management
UNDP	United Nations Development Programme
LA-WETnet	Latin America Water Education and Training Network

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Abstract

This working paper examines knowledge management implications for capacity building networks in integrated water resources management (IWRM). Such networks have emerged globally as strategic responses to the demands for increased skills and capacities in the water sector leading towards the implementation of IWRM. The paper explores how knowledge management facilitates the capacity building process, resulting in improved network performance and development.

Knowledge management is an activity for the achievement of organisational goals. By managing knowledge within networks a continuous organisational process is built in which knowledge is generated, adapted and shared, and transferred to water sector target groups. The power of knowledge management is in allowing organisations to explicitly enable and enhance the productivity of these activities and to leverage their value for the group as well as for individual members.

Knowledge management outputs and indicators are presented as a tool to enhance network performance.

I. Introduction

Integrated water resources management (IWRM) presents broad principles towards the sustainable management and development of water resources. These principles are guiding elements for a process to address the emerging global crisis presented by water shortages, quality deterioration, flood and drought impacts and increased competition for water.

The need for change in the way water resources are managed has resulted in increased interest and support to capacity building. Cap-Net, the International Network for Capacity Building in IWRM of UNDP, a GWP associated programme, is firmly established as a global network providing a framework for linking specialist groups and agencies with capacity building networks around the world. Cap-Net is working to improve the effectiveness of the many networks that have emerged in recent years and which are proving to be an effective strategy for addressing the need for capacity building in support of sustainable development

Knowledge management is at the core of capacity building and must be clearly and openly addressed for capacity building networks to be effective. Capacity building networks are facilitating knowledge development and exchange at different levels and for different targets, with the broad goal of building capacities for sustainable management of water resources. This tool will help networks to identify and allocate priority to knowledge management activities and provide an understanding of why and how knowledge management assists networks to increase their performance level and impact.

II. Relationship between knowledge management and capacity building

Capacity building is dependent upon access to knowledge. The whole rationale of capacity building is the transfer of skills, information and development of knowledge thus there is the expectation that the capacity builder is one of the most knowledgeable in the chosen field. Knowledge management is therefore crucial in the performance of capacity building networks.

To understand how networks may become more effective by introducing knowledge management consider first a definition:

What is capacity building?

Capacity has been defined as the ability of individuals and organizations or organizational units to perform functions effectively, efficiently and sustainably. This implies that capacity is not a passive state but part of a continuing process. Capacity building is the process of providing tools and knowledge to initiate, guide and support institutional development. Most of these activities concern knowledge transfer, skills development and facilitating the use of these capacities (Alaerts, G.; Hartvelt, F.; Patorni, F.M.: 1996).

“Knowledge management is achieving organizational goals through the strategy-driven motivation and facilitation of (knowledge) workers to develop, enhance and use their capability to interpret data and information, experience, skills, culture, through a process of giving meaning to these data and information.” (Beijerse, 1999)

This definition includes some crucial concepts for capacity building:

- *Organisational goals / objectives:* knowledge management is an activity to improve the organisation’s ability to achieve results. For capacity building networks in IWRM it will generally be:
 - A well functioning network communicating with members and providing a framework for information exchange;
 - Competent membership with up to date knowledge on aspects of IWRM and able to generate new knowledge;

- Capable and knowledgeable trainers and educators able to deliver good quality capacity building on water resources management related issues.
- *Strategy-driven*: knowledge management is a strategic activity, which serves the network mission and goals and as such should be a central element of work plans and network strategy. This should address the way, the quality, and the quantity of knowledge which is being created, shared and transferred by the network.
- *Motivation and facilitation*: knowledge exchange and availability is a major tool to motivate network members and facilitate the flow and use of knowledge into target groups in the water sector, and back into the network for the generation of new knowledge.
- *Capability to interpret data and information*: giving meaning to data and information to create knowledge is the core of the knowledge management process and central to the process of capacity building.

It is important to make clear the distinction between knowledge management and information management. Usually information management refers to the processes which are aimed at storing, retrieving, and distributing data. Knowledge management is broader and focuses on the competencies of organisations and the capacity to interpret information and assign it a value. In addition, knowledge management considers the generation of new knowledge.

III. Knowing your network

Knowledge about the network is critical for implementing knowledge management, which is a means to achieve the networks' objectives. Network management should have a clear understanding about:

- Issues regarding the strategy of the network.
 - Are networks' mission, vision and goals identified, conceptualised and shared with all members?
 - Is there a long-term vision about the knowledge that will be needed in the future?
 - Has management formulated short and medium-run strategies for the acquisition and sharing of knowledge?
 - Are priority capacity building needs identified and prioritised?
- Issues regarding organisational matters.
 - Is there a clear identification of target groups?
 - Is there a database of members?
 - Is management aware of the available competencies within the network?
- Issues regarding instrumental matters.
 - Are work plans elaborated and communicated?
 - Are communications between members and the secretariat regular and effective?
 - Are communications between the secretariat and target groups regular and effective?
- Issues regarding network outputs.
 - Does the network provide synergy and facilitation of activities?
 - Are there monitoring and evaluating opportunities to ensure effectiveness of the network operation?

IV The knowledge management cycle in capacity building networks for IWRM

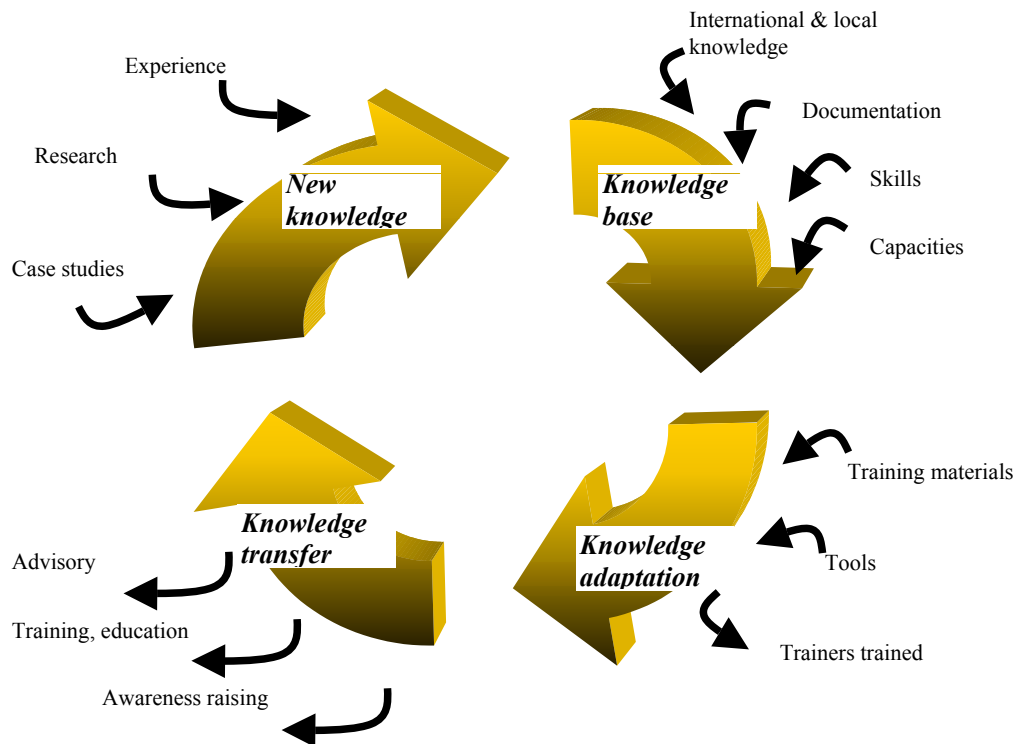
Knowledge management works properly when it results in direct benefits and therefore it should be clear how better management of knowledge will assist the network. A separate tool has been prepared to assist the network assess and analyse their overall performance. ([Capacity Building Networks. Monitoring and Measuring Performance](#)). This tool lists indicators of performance and many of those indicators are strongly influenced by aspects of knowledge management. Where possible the advice given about knowledge management in this paper should be linked also to the work plan of the network and integrated into the overall performance assessment.

Knowledge management aims to provide instruments to optimise the control and management of the most crucial production factor within organisations, in our case: capacity building for IWRM.

The knowledge management cycle assists to organise different knowledge management functions and link them to the out areas of the network. The cycle of knowledge management shows a continuous organisational process in which:

- i The knowledge base is established;
- ii Knowledge is adapted and shared with network members;
- iii Knowledge is transferred to target groups (water users, managers, IWRM implementers);
- iv Knowledge is generated (local and global levels).

The power of knowledge management is in allowing organisations to explicitly enable and enhance the productivity of these activities and to leverage their value for the group as well as for individual members.



Knowledge base

The knowledge base is established from:

- ❑ *Access to international and local knowledge.* This may not always be properly documented in formal publications and therefore participation in international, regional and national events can allow the network to be at the cutting edge of current thinking and bring this into the work programme. Relevance of local knowledge cannot be underestimated which highlights the importance of a strong network membership.
- ❑ *Documents (journals, papers, reports etc) providing the sum of current knowledge.* There are usually only small additions to knowledge over time and the majority of capacity building is founded on well known information and experience adapted to the local circumstances.
- ❑ *Skills and capacities of the network.* The real strength of the network as a promoter and provider of capacity building is in the skills and capacity of the members. This represents the most important knowledge base for the network and creates the respectability with which it is viewed. Knowledge of members in the subject areas of IWRM and their skills in application, training, communication, research all contribute significantly to the knowledge base. Mapping the distribution of competencies and knowledge in the network can be a useful tool.

Knowledge adaptation and sharing

In order to support delivery of capacity building which is appropriate for the region or country, relevant to the target group and of good quality, there is a need to:

- ❑ *Adapt information, materials and strategies to meet the needs of the specific target group.* This is a concrete example of application of network knowledge to ensure local social, environmental and economic realities are being taken into account. For capacity builders this is often expressed in the development of regional or country specific training materials.
- ❑ *Sharing of knowledge among members is critical to development of the capacity of members and strengthening of the knowledge base of the network.* One strategy for this is the training of trainers. Second, and probably more important, is an effective communication system which keeps members informed, provides access to the knowledge base and encourages exchange or communities of practice, among members.

For knowledge sharing to be effective within networks, knowledge mapping is recommended. Knowledge mapping describes the network knowledge base (within its membership and partners), who has it, and how does it flows (or doesn't) through the network. Knowledge mapping can show what changes are needed in organisational behaviour, as well as identifying processes and technologies to improve results. Knowledge mapping can also clarify which information are members needing and locate the best sources for it.

A proper communication system within the network is central for its efficiency and to facilitate knowledge mapping and knowledge sharing. Networks are about people and their interactions, and thus communication is critical. Technology offers a tool to facilitate this process. As many networks have country, regional, or global coverage, using online communities is cheap and practical. At its simple level, an effective online community can be developed through the medium of an email discussion list. A more sophisticated tool is a web platform, where users log in to post and share information. It is relevant to consider that the more sophisticated environments do not necessarily produce the best online communities or facilitates communications. The success of an online community depends on many inter-related factors; some of which are technology based and many others that relate to human behaviour. Periodical meetings are also an effective tool to facilitate knowledge sharing and knowledge mapping.

Knowledge transfer

Capacity building is all about knowledge transfer and this function has a high priority within networks. Networks will see their knowledge transfer as effective when they are addressing the following areas:

- ❑ *Information dissemination.* Raising awareness about the network itself and about the importance of sustainable management of water resources serves not only to promote the success of the network but also to increase knowledge and understanding of society about water management. This latter is not a sole prerogative of the network but good information dissemination to professionals can play a significant role in developing knowledge on current water resource management issues.
- ❑ *Training and education.* The incorporation of current knowledge into curricula and the provision of in service training are key mechanisms for networks to support water sector reforms and improve capacities of existing water managers. Transfer of knowledge in this way is one of the most targeted approaches and with the most immediate and visible impact.
- ❑ *Advisory support.* Recognition as a focal point for knowledge on water resources management will lead to the network/ members acting in an advisory role. The provision of information, summaries of experience, background papers, consultancy support, workshops all attest to the recognition of the network as a knowledge centre and provide avenues for the transfer of that knowledge.

As the process advances, new knowledge will be generated, in the form of best practices, lessons, and compiled experiences. The research activity by capacity building institutions also has a direct relation with this process, as it aims to find answers for implementation problems or questions.

Knowledge generation

Networks can play a key role in knowledge generation. While not always a high priority for a network, participating in generation of new knowledge places the network and its members firmly at the forefront as experts in the field of water resources management. Knowledge may be generated and assimilated through the following routes:

- ❑ *Research on various aspects of water management continue to contribute significantly to our understanding of how to implement IWRM.* The process of implementing IWRM is still relatively new and will vary from country to country providing a fruitful and important area for research which has immediate relevance.
- ❑ *Case studies on how to manage water, elaborating of practices, processes and outcomes serve to document and convert experience in to knowledge which can be shared.* This is an important contribution that can be made by networks and provides useful materials to support knowledge transfer activities.
- ❑ *Experience of individuals and institutions accumulates as programmes and systems are put into practice.* This experience is often not documented but nevertheless contributes significantly to new knowledge. Being able to draw on the experience of members and other practitioners greatly improves the relevance and impact of knowledge management activities of networks.

V. What to do about Knowledge management?

Taking the above as a framework for decision making on knowledge management, networks can adopt a strategy for knowledge management which takes positive steps to examine and prioritise actions around the elements in the Table below. It may not be possible or feasible to address all of these however tackling some of them may serve to raise the profile and relevance of the network more than others. The table may be used both as a tool for action but also as a tool for self assessment on the subject of knowledge management.

How well do we perform knowledge management?

- **“Good”** shows that the output has been achieved;
- **“Improving”** shows there is awareness about the importance of the output and action is being taken;
- **“Needs more attention”** shows the output is not yet being addressed or considered important.

Knowledge management functions of networks

	Outputs	Indicators	What are our actions?	How well do we perform knowledge management?
Knowledge Base	Network has access to international and local knowledge.	<ul style="list-style-type: none"> • Participation in local and international meetings. • Membership distribution and functions at local and international levels. • Communication systems. 		Good? Improving? or Needs attention?
	Documentation of current thinking and practices on sustainable management of water resources is available within the network.	<ul style="list-style-type: none"> • Resource libraries identified and accessible to members • Web based information access 		
	The network has a broad range of knowledge on elements of integrated water resources management in the skills and capacities of its members.	<ul style="list-style-type: none"> • Range of skills and disciplines of members. • Knowledge mapping of members. 		
Knowledge Adaptation and Sharing	Knowledge products are adapted to the regional and local context.	<ul style="list-style-type: none"> • Training materials and other materials in appropriate languages, with local examples and relevance. 		
	Network members are fully informed and contribute to communication on network activities, work opportunities and exchange of information and experience.	<ul style="list-style-type: none"> • Effective communication system in place between members. • Members participating in activities, sharing experience and information. 		
	Network members are competent in aspects of IWRM and able to deliver quality capacity building services.	<ul style="list-style-type: none"> • Trainers have been trained. • Quality of capacity building assessed. 		

	Outputs	Indicators	What are our actions?	How well do we perform knowledge management?
Knowledge Transfer	Information about the network and about integrated water resources management is made available and disseminated to water sector professionals.	<ul style="list-style-type: none"> • Information materials type and availability to water professionals. 		
	The network and its members carry out training and include water resources management in education curricula.	<ul style="list-style-type: none"> • Number of training activities. • Revised curricula. • Contribution of members 		
	The network is seen as a focal point for accessing advice, from members, on integrated water resources management.	<ul style="list-style-type: none"> • Requests for network assistance. • Numbers of workshops, papers, consultancies. 		
Knowledge Generation	Research is being conducted contributing to understanding on how to achieve sustainable management and development of water resources.	<ul style="list-style-type: none"> • Number of research programmes. • Incorporation of research into capacity building 		
	Case studies have been prepared and disseminated.	<ul style="list-style-type: none"> • Number of case studies • Dissemination of results 		
	The network is attracting experienced members and members are gaining new experience by participating in the network.	<ul style="list-style-type: none"> • Number of new members • Range of skills and knowledge • Number and type of network activities generating experience 		

Which are problems and barriers to perform knowledge management in networks?

VI. Essential outcomes of knowledge management for capacity building networks

Capacity building networks are innovative strategies to support development. Their level of impact is in direct relation with their level of activity and operation. These networks are not just formal statements or intentions, but the operationalisation of an active process of knowledge generation, adapting, sharing, and transferring. This process will result in long term impact as it is built on the wealth of local knowledge and capacities.

Knowledge management for capacity building networks ensures:

- An effective development of new knowledge and efficient combination of the best available knowledge (synergy of members, national and international partnerships) applicable at local level and available as part of the global knowledge base.
- Distribution of knowledge within the network and transfer to target groups in the water sector.
- Local anchorage of knowledge, for local accessibility and local development.

Knowledge management enhances networks' performance as it:

1. *Make things visible*: for a network, the most active way of gaining visibility is through operational knowledge management. As much as it is important for networks to have a formal structure, they acquire reality once their active operations begins, and this as we have seen is through knowledge management and delivery of capacity building.
2. *Promotes policy acceptance*: in the case of networks this is promoting and raising awareness about the need for IWRM. The core of the content is IWRM and as knowledge circulates policy is impacted within the water sector and related target groups, including decision makers and governments.
3. *Facilitates platform processes*: the knowledge management cycle requires effective networking. Without effective participation of network members and recipient groups there will be no real knowledge management. Network development and knowledge management are simultaneous processes contributing to each other.

Knowledge management for networks facilitates both delivery of capacity building and network development. It should be seen as a strategic development activity, and thus it is continuous. Networks should not leave aside knowledge management until they are well settled, but use knowledge management as a mechanism for network strengthening. The knowledge content changes as new knowledge is being developed and demands are attended, but the cycle grows positively bringing relevance and sustainability for capacity building networks.

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