

IWRM: Concepts and challenges

Global Water Partnership Technical Advisory Committee (TAC) Chair Torkil Jønch-Clausen addresses frequently asked questions concerning the conceptual and practical challenges involved in integrated water resources management (IWRM).

In March, the GWP published a background paper clarifying its interpretation of IWRM and making a case for applying it globally. What led the GWP to develop this “corporate view” of IWRM?

Integrated water resources management as a concept has attracted attention since the international conferences in 1992 on water and environmental issues in Dublin and Rio de Janeiro. Practitioners see IWRM as the most promising way towards achieving sustainable use of water resources.

Yet IWRM has never been unambiguously defined, nor has the question of how it is to be implemented been fully addressed. Our first aim was to clarify within the GWP and among our partners how we interpret the IWRM concept and process. Now, we are offering our view for wider consultation among professionals and decision-makers. In doing so, we hope to help forge a shared conceptual base for cooperative action in developing and managing the world’s water resources.

What is IWRM?

We’ve defined IWRM as a process that promotes coordinated development and management of water, land and related resources. Its goal is to maximize economic and social well-being in an equitable manner without compromising the sustainability of vital ecosystems.

The IWRM framework explicitly takes into account water’s permeation into all areas of human, animal and plant activity. All life and all sectors of the economy depend on water. Water resources are constantly being recharged, used, returned and reused and we are all interdependent – we all live downstream. That interdependence calls for integration. IWRM is the “integrating handle” that can lead us from fragmented sub-sectoral to holistic cross-sectoral water management.

What is being integrated with what?

There are two basic categories of integration. The first is the natural system, which is a critical determinant of the availability and quality of water resources. The second is the human system, which shapes resource use, waste production and pollution of the resource, and which sets development priorities. Integration has to occur both within and between these categories, taking into account variability in both time and space. This is different from



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the “traditional” approach, which fragments water management by sector. IWRM also views the role of water managers more holistically, including not only the traditional “water professionals,” but also a wider range of stakeholders from other water-related sectors.

Using IWRM approaches helps water managers recognize how people’s behavior affects demand for water and thus, how to change from traditional supply management to more demand-responsive approaches. Finally, on a broader international scale, water resources management is intimately linked to trade and security issues between countries. For some of the world’s most water-stressed countries, the critical water resources issue is to what extent they can rely on importing

“virtual water” through food grains without compromising national security interests.

It sounds as if we’re talking about integrated management of supply and demand, quality and quantity, and human use and ecosystem conservation.

This is true, but there are other elements as well. We should see the IWRM process as incorporating all aspects of the Earth’s delicate water balance.

For example, within the natural system domain, it includes integration between land and water management, between surface water and groundwater, between upstream and downstream, and between the freshwater systems and coastal zones.

Within the human system, integration entails mainstreaming water in national economies, ensuring cross-sectoral co-ordination of water management, fostering partnership between public- and private-sector management and, not least, involving everybody in resource maintenance and decision-making.

As we’ve seen, water affects us all. That means it is everyone’s business, from private individuals, to community organisations, small and large companies and government agencies.

How does IWRM work in practice?

Let’s take integrated land and water management as an example. An integrated approach to managing land and water takes as its point of departure the hydrological cycle, which depends on our natural terrestrial and aquatic ecosystems in the transport of water through the air, soil, vegetation, surface water-courses and groundwater reserves. As a result, we see that land-use developments and vegetation cover – including crop selection – influence the physical distribution and quality of water.

Viewed from this perspective, river-basin and groundwater aquifer management will often be logical planning units for IWRM from a natural system perspective, if they are feasible from an administrative point of view.

Similar analytical threads can be conceived for other elements of the

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Water Forum Follow-up

Encouraging inclusiveness and promoting participation

One of the outcomes of the Second World Water Forum, which was held in The Hague in March, is the continued need for mechanisms such as the GWP to facilitate alliance-building between the many groups working on water resources.

At the Forum however, concerns were raised about the inclusiveness and degree of participation in the GWP-facilitated consultations that took place in the preparations for the Vision and Framework for Action.

The GWP has taken these perceptions seriously and has set out to strengthen its mechanisms for communication and participation as well as to ensure its mode of operation is more transparent and inviting.

In order to gain legitimacy and equal representation, the GWP is actively pursuing a broader membership base in all regions and sectors.

Post-Forum challenge is to preserve momentum

Building on the pre-Forum process that involved the mobilization of considerable human and financial resources around the world, the Second World Water Forum generated a momentum that should not be lost.

The post-Forum challenge is to get action implemented at the regional and national levels and with that in mind, the Framework for Action process will be continued with a clear focus on countries and regions where the action takes place.

To keep water issues high on the political agenda, these follow-up actions will feed into future international events, such as the conference on freshwater in Bonn and the Rio+10 meeting scheduled for 2002.

GWP role: Honest broker

The GWP offers an operational platform to continue the dialogue – especially for some of the central IWRM issues that have been avoided or are proving highly contentious – and facilitates alliance-building across water sectors.

This mechanism is required because, at all levels, the majority of agencies still focus on specific sector interests.

Although most of these groups are now talking about integrated water management, there is still a long way to go before the principles of IWRM can be made operational for practical implementation.

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From the Editor

Facilitating participation

The Second World Water Forum is now behind us and we are facing newer and greater challenges. There is no doubt that the GWP – a networking and multi-stakeholder platform – now stands solidly recognized in the global water community and has established itself as one of the principal facilitating mechanisms for taking the momentum of the Forum forward into concrete actions.

In response to some of the concerns expressed, we are proactively strengthening our participatory mechanisms to reflect that we are an open organization and that we want to build alliances for which openness is a fundamentally important principle.

In our way-forward strategy, we are focusing on building partnerships, facilitating action planning, and supporting strategic actions to promote the implementation of integrated water resources management. These are the key issues for us to address as we move on from the Forum.

Admittedly, we cannot afford to cover the whole world or we will spread our resources and capacities too thin. Instead, it is our intention to focus our activities. We will identify and support those champions who are committed to taking actions that will make a difference in managing water in an integrated way. And we will assemble and synthesize good practices that can be widely disseminated to those who manage the world's water resources.

Above all, we realize that in doing so we are only one of several groups engaged in these activities, so we will endeavor to be as participatory as possible. In this respect, I look forward to working together with all of you in our efforts to achieve these goals. □

Khalid Mohtadullah
Executive Secretary, GWP

Calendar

September 7-8: SAMTAC meeting, Bahia de Salvador, Brazil.

September 30-October 4: INBO General Assembly, Zakopane, Poland.

October 4-11: IUCN World Congress, Amman, Jordan.

October 5-6: SEATAC meeting, Ho Chi Minh City, Vietnam.

October 9-14: Groundwater workshop and SASTAC meeting, Lahore, Pakistan.

October 18-20: WWC General Assembly, Marseilles, France.

November 6-10: TAC meeting Beijing.

November 17-19: CEETAC meeting, Tallinn, Estonia.

November 24-29: Fifth Global Forum of the Collaborative Council, Foz do Iguaçu, Brazil.

December 4-5: SC meeting. Venue to be decided.

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natural system. For example, freshwater systems are important determinants of conditions in the coastal zone. Freshwater managers must therefore consider the requirements of coastal zone management when making their own policies and decisions.

Actually, this is a special case of the upstream-downstream issue which is receiving increased attention in all countries, most notably in the recent UN declaration on land-based sources of pollution.

Can we conceive of a human system separate from the natural system?

We cannot. When it comes to analyzing human activities or service systems, virtually all aspects of integration require prior understanding of the natural system – its capacity, vulnerability and limits. Perfect integration is neither realistic nor attainable. But with an adequate understanding of the natural system as our starting point, there are measures we can introduce to encourage an integrated approach in decision-making on water resources management at all levels – from the individual household to international trade and river basin management.

One example is mainstreaming water resources economically. By mainstreaming, we mean three things: striving for government policies, financial priorities and planning that take account of the implications for water resources development, water-related risks and water use; encouraging the private sector to make technological, production and consumption choices based on the real value of water, and the need to sustain the assets over time; and providing forums and mechanisms for all stakeholders to participate in decisions on water resources allocation, conflict resolution and trade-offs.

National energy and industrial policies may have a profound impact on water resources – and vice versa – for example. Hence, developments in these sectors must be evaluated for their implications for water resources management and possible impacts on the natural system. This is not as simple as it might seem. IWRM

must include procedures for cross-sectoral information exchange and coordination, as well as techniques for evaluating the implications of individual projects for water resources in particular and for society in general.

Integrating government policies, influencing private-sector actors to make wise decisions on water resource investments, and involving all stakeholders in planning and decision processes sound like difficult undertakings. How are governments to achieve all this?

Integration is the art and science of blending the right proportions of items into a workable whole. But as those involved in water resources management know, integration itself cannot guarantee development of the best strategies, plans and management schemes, just as mixing two poor ingredients does not make a tasty meal.

In pursuing IWRM, private organizations and government agencies could be guided by a few overriding criteria that take account of social, economic and natural conditions. First, there is equity. All people should have access to water of adequate quantity and quality to sustain human well-being. Second, there is economic efficiency. Water resources must be exploited with maximum possible efficiency because of their finite and vulnerable nature. Last, but not least, there is environmental and ecological sustainability. Use of water resources should be managed so as to maintain the life-support system, thereby ensuring its availability for future generations.

If those are guiding values, what concrete steps are needed to implement IWRM? Concurrent development and strengthening of three elements is needed: an enabling environment, appropriate institutional roles, and practical management instruments.

The enabling environment comprises national, provincial and local policies and legislation. These constitute the rules of the game that enable all stakeholders to play their respective roles. The "rules" should promote both top-down and bottom-up participation of all stakeholders, from the national level down to the village or munic-



An integrated approach, relating water sources, such as

ipality, or from the level of a catchment or watershed up to the river-basin level.

In addition to governments, private companies and community-based organizations that promote full participation of women and disadvantaged groups should be involved. All these actors have a role to play in enhancing access to water, bringing about a balance between conservation and development, and managing water as an economic and social good.

Government's role in the enabling environment should be that of activator and facilitator, rather than top-down manager. Formulation of national water policies, enactment of water resources legislation, separation of regulation from service provision functions, and encouragement and scrutiny of the private sector are all important aspects. Another important task is maintaining dialogue with neighboring countries. Fifty percent of all land lies in shared river basins. Ongoing dialogue and joint planning processes in the Nile, the Mekong and other international river basins may show the way.

Regarding institutional roles, this is an area where stage of development, financial and human resources, traditional norms and

Update: vision to action

As a follow-up to the Framework for Action, participants at the Second World Water Forum requested that the GWP develop a Post-Hague Report that captures the commitments made at the Forum, responds to the concerns expressed there, and presents a participatory process for taking the momentum generated in the Forum forward. I asked Alan Hall, coordinator of the GWP's Framework for Action Unit, how this is going to be achieved.

What is GWP's role in this process?

First, I think it is important to stress that the GWP prepared the global Framework for Action at the request of the World Water Commission. This document brings together the work of thousands involved in the Vision exercise and provides options

and priority strategies for action as a basis for discussion. It represents the starting point for formulating the long-term program of actions required to better manage water in the future. The actual role that the GWP plays in the follow-up process is a facilitating one, as clearly, the implementation of the Framework for Action is a job for many other people.

How are you going to facilitate this process?

We are asking representatives from the groups involved in the preparation of the Vision to Action process for their contributions, and to suggest proposals that help transform the Framework into concrete actions. Obviously, we cannot contact everyone ourselves, so we are sending out invitations to single points of contact who

will act as coordinators and collators for their particular interest groups.

Who are you are contacting?

Most importantly, as action takes place in the countries, we are contacting the regional groups, both those associated with the GWP's Regional TACs and others involved in the developing the Vision. We are also contacting the sectoral groups, that is, those involved in water for food and rural development, water and nature, water for people, and water in rivers. Finally, we are contacting other key actors such as the CEO panel, gender group, the internationally based NGOs, youth, the World Water Council and several relevant UN organizations.

What are you going to do with the responses you receive?



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Consequently, the GWP is positioning itself as an honest broker, offering a platform for dialogue between the various constituencies in the water sector – including governments, national private sectors and transnational operating companies, NGOs, civil society and water-user groups.

The GWP is not the only supporting group involved in this task. Importantly, there are many others, such as external support agencies, UN agencies, international NGOs like the World Conservation Union (IUCN) and the Water Supply and Sanitation Collaborative Council (WSSCC), private sector organizations and those who provide technical and financial assistance.

The Partnership is reaching out to water constituencies by further shifting the focus of its activities to regions and countries. In fostering IWRM, a two-tiered approach is being followed. First, the GWP is helping to raise awareness of IWRM to heighten the political will to act and second, work is continuing with sectoral professionals on improving their understanding of the tools available for IWRM and the conditions required for its successful application.

In doing so, the GWP is striving to work together with other supporting groups, especially those networks with regional/national chapters such as the International Commission for Irrigation and Drainage (ICID), IUCN, WSSCC and others. These groups are being invited to take an active part at all levels in GWP's cross-sectoral network.

GWP to increase focus on strategic IWRM activities

Together with analysis by the GWP, the results of the Vision to Action initiative have shown that some key IWRM priorities are still not addressed by the GWP's Associated Programmes.

The outstanding gaps lie in water legislation, water allocation, risk management and conflict resolution. To address these areas, the GWP is developing a more focused Associated Programme portfolio.

The revised approach is placing greater emphasis on mapping the gaps, facilitating initiatives to fill these gaps, and reducing its role in monitoring and evaluating its operational programs. The gaps and needs found at the sectoral level will be referred to the sectoral organizations.

In generating demand for services, the GWP will take a proactive stance and approach countries willing to "champion" IWRM to act as testing grounds. The GWP will act on specific, demand-led country initiatives to facilitate the implementation of IWRM, through such activities as roundtable discussions with appropriate groups.

In these cases, the GWP will provide advice and support and present these countries as examples of using good practice.

Regional and country partnerships are key

Water partnerships at the regional and country levels provide the means for dialogue and information exchange. These water partnerships hold the key to facilitating actions that make a difference on the ground.

The GWP's Regional Technical Advisory Committees (RTACs) have always been seen as the start-up engines for full Regional Water Partnerships (RWPs). The transition from the present RTACs to full-fledged regional water partnerships is ongoing and will be accelerated over the coming year. A future debate is required to address the reality of forming sub-regional or country partnerships and how they will link to other parts of the GWP.

To encourage cognizance and implementation of IWRM, partnerships are needed between decision-makers and water professionals. Although the political level may be appropriately tackled through regional water partnerships in some regions, it is only likely to be successful when existing political institutions, like the Southern African Development Community (SADC) in Southern Africa, are in place.

Elsewhere, a regional approach may not be as successful and a country level partnership would be more appropriate. But even where the political conditions for RWPs do not exist, cross-national professional and NGO partnerships can play a valuable role in promoting knowledge of good practice.

Promoting IWRM

GWP is concerned about raising awareness and exchanging information on IWRM at all levels among the primary and supporting groups.

A communications strategy designed to facilitate this action and to communicate the GWP's own activities and achievements is being developed.

Although communications are important to make GWP better known and to help transparency and dispel misconceptions, the GWP's alliance-building itself is a major part of its public awareness initiative, as the partners themselves will carry the organization's messages.

GWP is not a donor

The GWP should not be viewed as a channel for direct financial support to national or regional project development and implementation. This is the business of regional and national representatives of international donor agencies and of national governments themselves.

The GWP's Financial Support Group coordinates and facilitates financial support to the Associated Programmes, which provide strategic assistance to the regions.

Increasingly, this support group is developing into a forum for strategic discussions by the donors on their contributions to water resources management and development activities.

Streams and reservoirs, to the needs of nature, agriculture, industry and people is at the heart of IWRM.

Other circumstances will play a large part in determining what is most appropriate.

No blueprints can be valid for all cases. Nevertheless, institutional development is critical everywhere to the formulation and implementation of IWRM policies. Clear demarcation of responsibilities between actors, adequate coordination mechanisms, filling jurisdictional gaps and eliminating overlaps and matching responsibilities to authority and to capacities for action are all parts of institutional development.

Finally, a management "toolbox" full of practical instruments should be developed to help water managers get their jobs done. The art of IWRM lies in selecting, adjusting and applying the right mix of these tools for a given situation. Five categories come to mind:

1 Water resources assessment. This comprises data collection networks, environmental impact assessment techniques and risk management tools – for floods and droughts, for instance.

1 Communication and information. Raising awareness is often a potent instrument for improving management, particularly when

accompanied by opportunities for informed stakeholder participation.

1 Tools for water allocation and conflict resolution. Allocation could be done through a mix of regulatory and market instruments based on valuation of costs and benefits. Conflict resolution tools could provide guidance in issues of upstream versus downstream, sector versus sector and human versus nature.

1 Regulatory instruments. These include direct controls, such as land-use plans and utility regulation, as well as economic instruments (prices, tariffs, subsidies and others) and encouragement of self-regulation. For example, by transparent benchmarking and product labeling technology, both new and traditional technologies might provide scope for progress within the water sector and in other productive sectors that affect water supply and demand.

In addition to these, financing is obviously a critical factor. Investments in IWRM, by users, governments, the private sector, donors and development banks, provide high returns to society, socially, environmentally as well as economically. n

Many different viewpoints have to be brought together and a diverse range of commitments, follow-up actions and proposals for the next steps will all have to be captured and agreed on within the document. One objective is to develop a process that will focus more on regional and country-level activity but which links to major international events such as the Third World Water Forum scheduled for 2003 in Japan. Once all the responses are received, we will incorporate them into a report that will be presented for debate and open discussion in working groups at the GWP's Consultative Group meeting in Stockholm in August. At that time, we will consolidate the various opinions on what the next steps should be for completing the report. As you can imagine, a lot will depend on the outcome of the discussions in Stockholm. After that, we envisage circulating a final draft early in October with a view to

publishing the final report at the end of November.

How do you envisage the shape of the final document?

The document is being organized in four parts: moving water up the political agenda, building on the achievements, responding to the Forum, and moving forward. The first two sections give some background to bring new readers up to date and present examples of actions already developing as a result of the vision process. The third section addresses some of the issues of concern to some participants at the Forum that still need more debate and the final part discusses the processes needed to move forward. Where necessary, annexes will be included to provide more detail. The structure and contents will be reviewed following the Stockholm meeting. n

By James Lenahan

Partnerships

Warning system reduces fatalities

Flood peaks from a number of river tributaries flowing through the Republic of South Africa and Zimbabwe, combined with rainfall and runoff in Mozambique itself, caused extreme flooding in Mozambique earlier this year. Loss of life was cut significantly due to the early flood warnings issued by Mozambique authorities based on information provided by the regional hydrological network.

The Southern Africa Development Community – Hydrological Cycle Observing System (SADC-HYCOS), supported by the World Meteorological Organization, was formally endorsed by the GWP in January in recognition of its strategic importance in providing hydrological information for the region.

The network, which provides hydrological information from a number of gauge stations located throughout the region, is linked by satellite to the Pilot Regional Centre in Pretoria, South Africa, where it is analyzed and displayed on the

South African Department of Water and Forestry Web site (<http://www.dwarf.gov.za/directorate/hydrology>).

During the tropical cyclones of February and March 2000, Mozambique authorities frequently visited the site to obtain information on precipitation and river levels. Flooding in the region became so severe that many of the hydrological gauging stations were themselves submerged and manual readings had to be taken to replace this remote sensing technique.

Additional hydrological information from stations not part of the SADC-HYCOS network was also relayed to Mozambique on a daily basis by the Regional Centre.

Recognition of the value of the SADC-HYCOS information system in helping Mozambique during this devastating period was announced by Mozambique's Deputy Minister of Water at the Second World Water Forum, which was held in The Hague in March.



Although media attention focused on downstream Mozambique, loss of life and flood damage also affected Botswana, Zimbabwe and South Africa. The highest recorded water levels in 82 years were recorded in the Komati River – 11,200 cubic metres per second – while the flood peak in the Limpopo River reached 9,700 cubic meters per second, equaling five similar peaks recorded over the last 106 years. The highest recorded level of the Limpopo, 12,500 cubic meters per second, was reached in 1894. n

Regional Water Partnership for Southern Africa

AT A SPECIAL CONFERENCE to mark the event, a Regional Water Partnership for Southern Africa was launched in Pretoria, Republic of South Africa, in June with support from the Southern Africa Technical Advisory Committee (SATAC) of the GWP.

The aim of the conference was to create a water partnership to formalize contacts between GWP members in Southern Africa and build an active forum for dialogue and action in the region on integrated water resources management. Mission and vision statements, a plan of action, and a governance structure were agreed on and established for the partnership.

The action plan identified a number of initiatives for the Partnership to address, including dissemination of the regional vision, development of the framework for action, dialogue on water issues through workshops, web sites, and newsletters, and facilitating access to databases on information and best practices related to integrated water resources management.

A total of 85 delegates participated in the conference, including GWP members, potential members and international cooperating partners. Currently, 89 stakeholder organizations are members of the GWP in Southern Africa and they are located in Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zimbabwe and Zambia.

The inspiration to form the Southern Africa Regional Water Partnership in June – and the two national water partnerships in Zambia and Zimbabwe earlier this year – was a result of increased interest in the GWP since the establishment of its Regional Technical Advisory Committee – SATAC – in 1998. n

For more information on the Southern Africa Water Partnership visit the website: www.gwpsatac.org.zw

Malwatu Oya Basin Water Partnership established in Sri Lanka

A DECISION TO ESTABLISH a Water Partnership to help stakeholders reconcile competing water demands in the Malwatu Oya water basin in Sri Lanka was taken during a workshop in March.

The move is designed to develop an action plan for managing the water resources of the Malwatu Oya basin in the North Central Province of the country.

The province is heavily dependent on irrigation water both for agriculture and domestic purposes. Rapid population growth – partly due to immigration – urbanization, expansion of tourism, and the growth of both the industrial and service economies are placing heavy pressure on the available water

resources. The result has been higher demand not only for water, but for good quality water.

Once established, the Area Water Partnership will identify the inter-provincial problems of water management in the Malwatu Oya basin and evolve a mechanism for sharing the water. It is anticipated that this initiative will lead to a model institutional mechanism that could be offered to the government for the management of other inter-provincial river basins.

The workshop provided an excellent opportunity to introduce the concept of integrated water resources management to the participants. It impressed on them

the importance of looking at water as a natural resource to be shared, in contrast to the segmented approach that is currently being pursued by the different sector agencies responsible for the provision of water.

The North Central Provincial Council – the political/administrative body responsible for the province – showed great initiative in organizing the conference, which was attended by staff of the Irrigation Department, the Water Supply and Drainage Board, the Water Resources Board and the Mahaweli Authority. Representatives from local authorities, NGOs, and the community also played an active part in the proceedings. n

Bringing gender perspectives to IWRM

THE GENDER AND WATER ALLIANCE aims to reach out and work with organizations in the water sector, said Jennifer Francis of the International Water and Sanitation Centre (IRC), “as there is a real need for change in the regions and countries. Working with the GWP will give us a mechanism to link up with the regions and countries.”

Francis made the remarks in May when presenting, on behalf of the Gender and Water Alliance, the draft

proposal on gender to the GWP's Technical Advisory Committee. The final proposal outlining the action program of the Alliance will be submitted to the GWP's Financial Support Group in August as a GWP Associated Programme.

The Gender and Water Alliance is a network of individuals and organizations (approximately 100 members) representing all levels – from policy to grassroots – in several regions of the world including Latin America and the Caribbean, Middle East, Africa, Europe, South Asia and East Asia. The International Water and Sanitation Centre will act as secretariat for the Alliance.

The Alliance was formed by individu-

als and organizations working with gender mainstreaming issues in the Vision to Action consultations leading up to the Second World Water Forum in The Hague. The Alliance intends to assist in implementing the World Water Vision and Framework for Action on the ground.

The first workshop of the Alliance was hosted by the Vision Management Unit in Paris in June, when an action program was mapped out in consultation with partners from various water use sectors.

The Alliance advocates change on the ground in several areas, including gender-sensitive information sharing, networking and capacity building, and aims to make a concerted and sustained

effort to bring gender and equity perspectives into integrated water resources management.

The Alliance also wishes to ensure that agreed principles for meaningful participation of women and men – irrespective of age, status, income, culture or religion – in dialogue and decision-making are put into practice by making them an integral component of the design, implementation, monitoring and evaluation of all IWRM legislation, policies and programs. n

For more information on the Alliance contact Jennifer Francis by e-mail: francis@irc.nl