



“Rewarding ecosystems, rewarding people”

in

Dryland watershed ecosystems of the West Asia and Mediterranean regions

REWARD

Programme for

Regional Water Resources and Dryland Management

IUCN Regional Office for West Asia

Essentially funded by DGCS/Italy through the WESCANA project
and by DGIS/Netherlands through the IUCN- WANI Programme



TABLE OF CONTENT

- 1. Introduction**
- 2. Background about the REWARD Programme**
- 3. Sustainably managing dryland watersheds**
- 4. Adapting to climate change in dryland ecosystems**
- 5. RBA, gender and equity in management of dryland watersheds**
- 6. Systemic approaches in REWARD**
- 7. Changing the institutional process around ecosystem management**
- 8. A vision for a Regional Knowledge Network for Water Resources in Drylands**

Summary Fact Sheet on REWARD

The Regional Water Resources and Dryland Programme
facilitated by IUCN-ROWA (West Asia)
(version January 2010)

The REWARD Programme could be described in a nutshell as follows:

- 1) A network of networks within a broader network, with
- 2) A thematic focus on developing local water governance and systemic approaches for IWRM at the watershed/river basin level
- 3) A regional set of project components focusing on networking, capacity building and knowledge development; and information sharing.
- 4) Regional activities will be structured through three (3) sub-networks, resp. on
 - mountain watersheds,
 - oasis/ground water management and
 - management of large river systems/river restoration.

The sub-networks will be coordinated with support from IUCN-ROWA by key Knowledge Centres in the region; resp. 1) PHG in Palestine and WEC/Yemen; 2) BRDC in Jordan) and 3) CEDARE and IUCN-ROWA.

- 5) Specific attention for gender/equity/poverty as well as for social/ecological resilience of ecosystems in face of climate change
- 6) A series of Demonstration Projects at the watershed/river basin level in different countries of the region:
 - a) Marj Sanour Watershed Development in Jenin/Palestine
 - b) Dhamar watershed development in Yemen
 - c) Azraq Oasis Basin development in Jordan
 - d) Zarqa River Basin Restoration in Jordan
 - e) Nile River District Management in Beni Sueif and Minia Districts, Egypt
- 7) New watersheds proposed through additional funding
 - f) Assi River Basin Management in Hermel/Lebanon (DGCS)
 - g) A new watershed in Hebron Governorate/Palestine (EC/ENPI)
 - h) a new watershed in Balqa governorate/Jordan (EC/ENPI)
 - i) lower Oued Lahou river basin in Morocco (EC/ENPI)
 - j) Turon watershed in Andaluz/Spain (EC/ENPI)
- 8) All watershed demonstration projects work on systemic tools :
 - stakeholder dialogue and concerted action (SDCA);
 - participatory water planning cycles and Decision Support Tools;
 - water governance (stakeholder platforms, empowerment of local communities and local government agencies; institutional change issues);
 - resilience in face of climate change, integration with dryland management;
 - community pilot initiatives.
- 9) Principal funding thus far DGCS/Italy (2,4 million EURO; 2006-2010); UNDP/Jordan for Zarqa (USD 400,000/3 year; 2008-2011); SAIC/Jordan for Zarqa (400,000 EURO/3 years; 2008-2011), DGIS/Netherlands (660,000 USD (2009/2010), InWent for Public awareness (180,000 USD/ 2009-2010), funding for local community activities from GEF. SDF/Egypt and Yemen, USAIF, other including government funds.
- 10) REWARD is not a project but IUCN-ROWAs long-term programme on Water and Dry-lands

1. Introduction

REWARD is about empowering local people in managing their ecosystem natural resources. At the same time REWARD is about creating the social, institutional and policy conditions where under people can sustain and improve their livelihoods. In short REWARD is about how people can reward ecosystems and how ecosystems can reward people.

With local people we mean people and their associations living in rural or urban communities, the entrepreneurs in these local communities and the staff of local government agencies. These are the people who are directly engaged and responsible for their own well being in their direct physical and social environment. Taking such responsibility is often not possible without the necessary conducive policies decided at governorate and national levels. Because of that recognition REWARD is involving intensively and right from the start the decision-makers and technical staff in the national government bodies.

This publication is the fruit of three years of work of a group of dedicated organizations that have come together with the interest to contribute to the better management of scarce water resources and fragile dryland ecosystems in the dry regions of West Asia and the Mediterranean Basin. Facilitated by IUCN ROWA, IUCNs Regional Office for West Asia, activities have started in 2006 with the WESCANA Water Project, funded by DGCS of the Italian Government. With WESCANA initially focusing on developing systemic approaches to water resource management, it became evident that water resources are a critical part of the dryland ecosystems in this region, where environmental flows in such ecosystems are importantly decided by the surface and ground water regimes in specific watersheds or river basins. In short, water resources, dryland ecosystems and rural livelihoods are intrinsically connected to each other. The engagement and interest of key partners in bringing expertise together has led to the creation of the Regional Water Resources and Dryland (REWARD) Initiative, now one of IUCN ROWAs major long-term programmes. On one hand REWARD works in specific watershed-defined field projects to develop and test systemic and participatory approaches for water resource management. On the other hand REWARD believes that social and technological innovation is enhanced by mutual learning, networking and shared knowledge development. For this purpose REWARD and its partners have started to join forces in regional networks around specific water resource systems. Together these sub-networks form a functional, informal but pragmatic Regional Water Knowledge Network (RWKN), in which a wide array of now around 50 partners (among which about 15 IUCN members) take part.

This publication, more precisely, is also the fruit of a strategic three-day workshop that took place in Sharm Al Shaikh, Egypt in May 2009. The workshop explored how new dimensions can be integrated and be given more emphasis in the work of REWARD, its field projects and its Regional Water Resource System Networks. These new dimensions have everything to do with dryland management, adaptation to climate change, gender and equity and institutional change processes necessary to sustain ecosystem resource management. The first two days of the Sharm Al Shaikh workshop were used to reflect on these new dimensions and to see how they can be practically integrated in on-going work. The last day has been used to strengthen the organization of the regional networks on specific water resource/dryland ecosystems. This publication intends to share with a broader audience the thoughts, insights and practical propositions to enhance the work and ambitions of REWARD.

Peter Laban, Regional REWARD Coordinator for IUCN-ROWA (August 2009)

1. Background about the REWARD Programme

Introduction

The expansion of agriculture and demographic growth over the past decades has led to a dramatic degradation of ecosystem productivity and natural resources in the West Asia and Mediterranean regions. As identified by the UN Convention to Combat Desertification these factors, together with poverty, unequal land distribution, refugees flows, and the disruption of traditional farming methods are leading to the process of “land degradation in arid, semi arid and dry sub-humid areas” commonly known as “desertification”. Such desertification is critically negative for especially the “drylands” that form most of the land in this region. Desertification is closely related to poor management of the often scarce freshwater resources. These water resources are hence considered to be one of the most limiting factors for sustainable development in this region.

What is the REWARD Programme today?

In 2006 the IUCN Regional Office in Jordan has started the WESCANA Regional Water Project funded by DGCS/Italy. This project has formed the base for a multi-donor funded regional water programme implemented by the actual IUCN Regional Office for West Asia (ROWA). This regional programme, presented as **REWARD : Regional Water Resources and Drylands Management**, encompasses a challenging innovation and development programme for ecosystem and livelihoods development. REWARD is amongst others funded through the WESCANA Project by the Italian Ministry of Foreign Affairs (DGCS) and the IUCN global Water and Nature Initiative (essentially funded by the Netherlands Ministry of Foreign Affairs (DGIS). The programme is implemented in the larger Region of West Asia and North Africa and will work through a Regional Knowledge Network facilitated by IUCN ROWA/REWARD with for the moment three sub-networks on specific Water Resource systems relevant for the region the latter coordinated by key partners/Knowledge Centres. Chapter 8 will discuss a vision and operational modalities for such a regional network and how sub-networks could be put to life and continued.

The regional network finds its practical basis in field projects on the ground. Actually five demonstration projects are now in implementation in river basins and watersheds in Egypt, Jordan, Palestine and Yemen, while a new project will start in 2010 in Lebanon.. All five projects have gone through an inception phase to determine focus and scope for implementation of 3 year projects. Four of them have started in 2008. The projects will be implemented in cooperation with the Center for Environment and Development for the Arab Region and Europe (CEDARE) in Egypt, the Jordanian Ministry of Environment and the Water and Environment Centre of Sana’a University in Yemen. A new IUCN Project Office in Palestine is taking the lead on the project in Palestine. New projects may be identified in the coming years to enhance up-scaling and institutional change.

REWARD Objectives

The objective of REWARD is to influence decision makers in the region to adopt systemic approaches for water resource management through the demonstration projects and the Regional Water Knowledge Network that is in the process of being developed. The regional network will foster capacity building, shared learning, networking and exchange of experience between the major actors in the water sector of the region. This will be given hands and feet by sub-networks on specific water resources systems relevant for the region and related demonstration projects in different countries.

All REWARD/WESCANA projects build strongly on the methodologies for participatory planning and stakeholder dialogue in the water sector developed by the EMPOWERS project that was funded by the European Commission and implemented by CARE International with local and international partners (2003-2007). These methodologies and approaches will be further tested and developed in the REWARD demonstration projects, while this will be given further depth by developing Decision Support Tools and ecosystem analysis, including environmental economic assessment tools. Chapter 6 will provide a short overview of these methodologies and approaches.

The REWARD Programme forms part of, and directly contributes to, the Water and Nature Initiative (WANI), a world-wide effort of IUCN to contribute to sustainable water resources management. This enables the ROWA/REWARD network members to benefit directly from the experience and expertise available in this worldwide initiative. Annex 1 provides the Strategic Objectives of the Water And Nature Initiative coordinated by IUCNs Global Water Programme.

Actual Country Projects

Zarqa River Restoration – Jordan

Pollution and water exploitation of the Zarqa River in **Jordan** has come to a point where urgent restoration action is needed. In 2007 REWARD/WESCANA has worked in close consultation with the Jordan Ministry of Environment on a long-term strategy for the restoration of the basin. A new strategy document has formed the basis for further action in 2008 with funding from the Spanish Agency for International Cooperation and from UNDP. Critical issues to be tackled are how to restore environmental flows by making better use of groundwater and surface water and tackling profound problems of river pollution by domestic waste water from Amman City and from solid waste and waste water from industry that is heavily concentrated in this river basin. IUCN ROWA supports the Ministry of Environment to implement this project, in close coordination with the Ministries of Agriculture and Water & Irrigation and Zarqa Governorate.

Azraq Basin National Dialogue for Restoration – Jordan

A second REWARD project in **Jordan** is working on a stakeholder dialogue to come to concerted action with all parties involved that may help to rescue the severely degraded Azraq wetland of the oasis with unique flora and fauna which is recognized as a RAMSAR site. The water regime in the oasis and wetland is severely jeopardized by over-abstraction of groundwater as a result of demand for drinking water in Amman and Zarqa cities as well as by unsustainable and large-scale irrigation in the immediate surroundings of the oasis. The dialogue is hoped to develop different scenarios to tackle the situation. In all cases important policy and political decisions are required to safeguard the oasis. The project is implemented by IUCN ROWA together with the Badia Development and Research Center and the Arab Women Organization and supported by the Royal Society for the Conservation of Nature and the Ministry of Environment.

Marj Sanour Watershed Development in Jenin – Palestine

In **Palestine**, the REWARD project is working on a simple stakeholder-led methodology for watershed development planning, supported by a user-friendly Decision Support System (DSS) that can be applied in the mountainous zones of West Asia and the Mediterranean. The methodology is being tested and applied in Marj Sanour, a small watershed in Jenin Governorate. The project will give important emphasis to sustainable livelihoods, agricultural development of rainfed crops, as well as olive and fruit orchards, in addition to conjunctive use of ground and surface (run-off) water. The project is supported

by the Palestinian Water Authority, Ministry of Agriculture, Ministry of Local Government and the Environmental Quality Authority. It will be implemented with newly identified IUCN members, such as the Palestine Hydrology Group and the Union of Agricultural Work Committees.

Improving local governance for Water District Management in Beni Sueif and Minia Governorates – Egypt

In **Egypt**, the REWARD project is working on empowering Community Development Associations (CDAs) and local government agencies in management and decision-making for the best use of water and agricultural resources in the Water Districts of the Nile Valley and Delta. In pilot Districts in Minia and Beni Sueif Governorates this is done around the development of user-friendly and practical Decision Support Tools at the district level for the irrigation/drainage system. Where links will be sought with a national DSS, the project will much focus on cropping pattern forecasts and calibration of water availability and demand. At the same time, farmer organizations are encouraged to participate in the design of such district DSTs to better adapt environmental cropping requirements to availability of water. The project is strongly supported by the Ministry of Water Resources and Irrigation, as it fits very well in developing models for decentralized management of irrigation and drainage systems at the district level. The project is implemented by The Center for Environment and Development for the Arab Region and Europe (CEDARE), in cooperation with CEOSS and CARE Egypt.

Watershed management and conjunctive water use in Dhamar watershed – Yemen

The project will cover a number of valleys in Dhamar Governorate in **Yemen**, where water resources are at high risk; groundwater in the area is extensively pumped for agricultural purposes. Moreover, the area has been heavily polluted by untreated domestic wastewaters. In addition to solid wastes, landfills and excessive use of fertilizers and pesticides represent potential sources of pollutions. The current level of pollution has numerous negative impacts on the ecosystems it supports, in addition to the human population surrounding it. These impacts include the loss of biodiversity degradation of the national resources and the spread of disease among humans and livestock.

In general, the major problems in this catchment area are represented by overexploitation of ground water, land subsidence, deterioration of water/natural resources, degrading biodiversity, poverty, illiteracy, poor marketing and poor water governance. In addition to that, the pollution of shallow groundwater, wells and land from the poor quality of the treated wastewater from the Dhamar and Mabbar wastewater treatment plant. A participatory integrated approach will be used to plan, restore and manage the Dhamar watershed through increasing the stakeholders' participation in the planning and decision making process at the local and intermediate levels. In this project a strategy for integrating water resources management will be developed and will be used as a model to be replicated in the country and the region. The project is being implemented by the Water and Environment Center of Sanaa University in cooperation with Ministry of Agriculture. The project is supported by the Ministry of Water and Environment.

Regional Water Resource System Networks : learning, sharing and capacity building

The Middle East and North Africa (MENA) Region suffers from severe water scarcities, high over-abstraction of ground water resources and low conjunctivity of ground and surface water. There are few alternative options for water resources available. The most prominent seem to be desalinated sea water and use of treated waste water. High environmental negative impact on the preponderant dryland ecosystems and on human development can be foreseen when not dealing well with environmental flows and conjunctive use of all water resources.

IUCN ROWA will further a dialogue on sustainable ground water management in strong collaboration with other regional partners. With the REWARD Programme it will contribute to this dialogue by facilitating a Regional Water Knowledge Network that is organized through a number of sub-networks around specific water resource systems relevant for this region.

- Mountain watersheds
- Oasis and their ground water basins
- Large river systems (with a focus on irrigation and drainage management and/or water resources in urban environments (with a focus on river restoration)

In most if not all situations sustainable ground water management will be of increasing and critical importance. It is foreseen that the work and dialogues in these networks will provide a basis in a couple of years for a high level policy meeting where possible avenues for more sustainable use of ground water can be translated in long-term policies. Targeted audience: Ministries of water, agriculture and environment and regional organizations (inter-governmental and NGOs). Where such dialogue will take place within the larger perspective of IWRM, it will focus on groundwater and its conjunctive use and management with other water resources (surface water, use of waste water, desalinization of saltish water). The proposed networking learning, sharing and dialogue will foster also the interest in a sustainable Regional Network of Water Knowledge Nodes and will be closely linked to the different demonstration projects undertaken within the REWARD programme in countries of the region.

2. Sustainably managing dryland watersheds in the West Asia/Mediterranean Region¹

Most of West Asia and the regions bordering the Mediterranean Basin are characterized by its aridity and consequently a lack of water. Climate change predictions indicate an increase in unpredictability of rainfall, increase of extreme weather event and overall a decrease in water availability. West Asian and Mediterranean drylands include both major global urban centers and vast rural and remote areas. To ensure long term sustainable development in these regions and to successfully adapt to climate change there is an increasing need to better understand and manage dryland ecosystems. Characterized by their overall aridity or semi-aridity these ecosystems also encompass wetland and dry-forest areas and sustainable management will require an integrated approach. Importantly people have over millennia accumulated knowledge on how to make a living from the dryland ecosystem, how to wisely use the available water and other resources and on how to cope with risk and unpredictable and highly seasonal weather patterns. Building on these knowledge reservoirs and recognizing the inter-linkages of the socio-ecosystem are critical.

While drylands cover worldwide 41% of the Earth's surface, little attention has been paid to foster sustainable drylands development that is grounded in a sound understanding of dryland ecosystems. Instead, drylands have been widely perceived as degraded areas, investment deserts and development has mostly focused on technological solutions. In West Asia and the Mediterranean Basin dryland ecosystems cover probably more than 85 % of their land surface. Many development interventions have failed in the past as they did not take into account major dryland characteristics – such as limited, highly seasonal and often unpredictable water availability. Attempts to 'green' drylands or 'halt advancing deserts' (which in most cases data show are not progressing) often focused on either unsustainable water supplies, resulted in salinization and deterioration of soils or failed as they focused on technological solutions not anchoring them in and strengthening the social systems.

Development in drylands will have to be different from development in other ecosystems in order to be sustainable – it will mean:

- Building on the social capital – the knowledge on coping strategies (e.g. water harvesting techniques, mobile livestock herding and marketing, drought resistant species, livelihood diversification, temporary migration, etc), the institutions, establishing consensus on flexible models that better accommodate customary practice, etc.
- Considering dryland ecosystem characteristics when planning development interventions. This includes limited availability, seasonality and unpredictability of water resources and the risk of extreme weather events, and hence a high focus on water resource management.
- Re-evaluating and sustaining dryland ecosystem services. The true economic value of many dryland ecosystem services is not adequately recognized at different scales. This includes supporting services to agricultural and livestock production; regulating services such as water filtration and climate regulation; provisioning services of grasslands, shrubs and forests, or cultural services such as tourism.

Successful drylands development will require more investment in areas that often have been neglected in the past. It will require knowledge partnerships that bring together traditional knowledge and latest

¹ Compiled by Caterina Wolfangel, Facilitator of the IUCN Dryland Initiative.

research and facilitate learning and sharing processes at different levels. The REWARD Regional Knowledge Network may have an important function here.

Successful and sustainable dryland development could take the form of highly sophisticated mobile livestock marketing – including leather and milk markets. Such development would recognize and reward dryland dwellers for maintaining critical global and regional ecosystem services – such as soil formation, carbon sequestration and climate regulation. It could mean a more risk resilient and sustainable livelihood on a small scale, using water harvesting and soil conservation methods, and drought resistant varieties.

Sustainably managing dryland watersheds

One key ecosystem service drylands provide is water regulation. Watersheds of important rivers and important groundwater systems are found in drylands. This is especially so in West Asia and the Mediterranean Basin. As a consequence the management of the surrounding drylands can influence water tables and flows. Many integrated river basin projects focus mainly on direct water users such as agriculture (irrigation) and try to find consensus on sustainable water consumption. In the less arid, areas around the Mediterranean Basin, dryland ecosystems are still used for rain-fed agriculture and fruit orchards - with the olive tree as maybe the most prominent one - while parts are still covered by natural or man-made forest cover. Sustainably using these drylands for agriculture, horticulture and forestry is a great challenge and is intricately related to the wise management of both surface and ground water resources. In the more arid parts, dryland landscapes are often used if not dominated by livestock herders. While often blamed for land degradation, mobile livestock herding has proven to be the most sustainable land use system in many arid and semi-arid if not sub-humid regions. Certainly, water pans and boreholes as well as limitation to mobility and lack of coordination between different livestock communities have resulted in degradation. However, it is argued that by working with livestock herders on best options for a rotating and flexible adaptive grazing system and addressing some of their challenges, they can make a positive difference to water environmental flows (infiltration, quality, reduced erosion, etc). Moreover, dryland dwellers (farmers and herders) have traditionally used water harvesting systems and a wealth of coping strategies that allowed them to use water sustainably, ensure good water quality and infiltration while ensuring a resilient livelihood.

There is an opportunity for REWARD to expand its work on river basins and watersheds to include sustainable dryland management of the larger landscapes. Activities could range from facilitating negotiations of livestock owners and herders among themselves and with farmer communities to establish consensus and support sustainable grazing schemes; to documenting and strengthening traditional coping mechanisms and sustainable land uses which will also be relevant for successful adaptation to climate change, to exploring payment for dryland ecosystem services such as carbon sequestration for sustainable grazing management. This will also require changing the common perception of drylands as wastelands by re-evaluating their services and advocating for an improved understanding of the climatic, socio-ecosystem complexities.

IUCN's Drylands Initiative

The work of REWARD fits very well in the IUCN's Dryland Initiative. While IUCN has worked in the drylands since its foundation in 1948, IUCN for the first time has launched a global drylands initiative in 2009 following a request of its Members. This is due to the increasing recognition of a need for a tailored approach based on a sound understanding of the ecosystem characteristics for drylands development to be successful and achieve the MDGs especially in times of climate change.

IUCN’s work on drylands provides a unique opportunity to not only work across the various IUCN thematic and regional programmes and initiatives, but to also work in a triple helix together with and through our Members and Commission experts. The IUCN Drylands Initiative pursues a vision where “*Drylands are valued, and sustainably managed, to support equitably the well-being of societies*”. To contribute to this the following mission is proposed:

IUCN’s mission for dryland ecosystem management:
To influence, encourage and assist societies throughout the world to conserve diverse drylands landscapes, promoting good governance, gender equality and respecting local knowledge to ensure that dryland ecosystems, their services and livelihoods are ecologically sustainable and resilient to change.

Annex 2 further details the strategic objectives congruent with above vision and mission. It is evident that the REWARD Programme in West Asia and the Mediterranean Basin can contribute importantly to the IUCN Dryland Initiative by designing and implementing activities that will achieve these objectives.

Addressing dryland issues in the REWARD watersheds

Participants in the REWARD Sharm Al Shaikh workshop discussed in country groups three major questions ranging from current dryland activities to additional activities that could be undertaken in the various project sites (without or with substantial funding), considering the strategic objectives of IUCN’s global Drylands Initiative in terms of Practice, Change and Policy.

Palestine	
Ongoing dryland management activities in the REWARD project site	
Practice	<ul style="list-style-type: none"> • Current approach is only implicitly oriented toward drylands management • Study identified ecosystem carrying capacity and potential improvements • Potential Climate Change impact is included in DSS
Change	<ul style="list-style-type: none"> • Use of traditional knowledge on: water harvesting, cropping patterns (mainly olive, cereals) (but not explicitly documented)
Policy	<ul style="list-style-type: none"> • Stakeholder engagement, improved coordination but not yet oriented toward drylands management • Awareness raising to stakeholders at policy level • Review of regulations and policies related to drylands management
Potential new dryland management activities in the REWARD project site (without extra funding)	
Practice	<ul style="list-style-type: none"> • Develop tools to improve stakeholder ownership of sustainable drylands management • Design pilot projects dealing with advanced water harvesting filtration dams, soil moisture conservation/maximization at hillside agricultural terraces (olive orchards).
Change	<ul style="list-style-type: none"> • Document traditional knowledge • Raise awareness on traditional knowledge among practitioners.
Policy	<ul style="list-style-type: none"> • Develop new regulations and polices oriented towards drylands management at local watershed level and scale it up at national level • Develop policies for adaptation to climate change and define alternative schemes to support the adaptation process within the context of drylands management.
Which of these would require extra funding?	

Change	<ul style="list-style-type: none"> • Funds needed to implement pilot projects identified • Funds needed to replicate the models with customization toward drylands managements • Funds needed to study the adaptive capacity of people under various climate change scenarios
--------	--

Jordan	
Ongoing dryland management activities in the REWARD project site	
<ul style="list-style-type: none"> • A number of activities are being carried out that are relevant to the strategic objectives 1 & 2 of the IUCN Drylands Strategy (Practice and Change) 	
Potential new dryland management activities in the REWARD project site (without extra funding)	
Practice	<ul style="list-style-type: none"> • Capacity building and knowledge sharing on dryland management • More in-depth analysis on gender tools and sensitivity • Developing tools for planning in sustainable drylands management
Change	<ul style="list-style-type: none"> • Need to stronger focus on dryland ecosystems • Build on the local community knowledge in managing dryland practices
Policy	<ul style="list-style-type: none"> • Developing RIDA to RAPID • Translation of WANI Toolkit Pay and Flow to enhance knowledge and practice for policy makers • Knowledge networking • Capacity building activities targeting policy makers • Considered as part of the solution
Which of these would require extra funding?	
Practice	<ul style="list-style-type: none"> • Technical support to build the practical capacity • Financial support for the development of extra tools • Capacity to share knowledge • Getting more social NGO's and more social tools
Change	<ul style="list-style-type: none"> • Technical support for developing knowledge on how to adapt climate change for staff and stakeholders • CRYSTAL tools developed by IUCN to be tested and adapted to regional context • Capacity to enhance the use of tools by stakeholders
Policy	<ul style="list-style-type: none"> • Developing regional networks • Enhance knowledge • Policy analysis and clear influencing strategies

Egypt	
Ongoing dryland management activities in the REWARD project sites (Nile Valley; dominantly irrigated agriculture)	
<ul style="list-style-type: none"> • Promoting sustainable use of water recourses • Promoting equal access to water recourses • Maximizing the water use efficiency and savings 	
Potential new dryland management activities in the REWARD project site (without extra funding)	
<ul style="list-style-type: none"> • Awareness programme to promote low water consumption / high value crops • Stakeholder participation in planning and implementations of project activities • Monitoring programme for water quantities • Developing database (Water management information system) 	
Which of these would require extra funding?	
<ul style="list-style-type: none"> • Expanding the monitoring system / awareness programme to include other ecosystem elements • Strengthening coordination capacities across sectors to incorporate multiple dimensions including environment/ecosystem, and livelihood, together with water & agriculture 	

- Influencing the policy level (throughout the previous point) to incorporate dryland issues

3. Adapting to climate change in West Asia/Mediterranean watersheds²

Scientific debate has come to the now almost unanimously shared conclusion that climates are changing due to human activity and especially due to greenhouse gasses. Climate change is impacting nature and thus livelihood security, be it in the Sahel, the delta of the Egyptian Nile, Bangladesh, The Netherlands, in Greenland or the dry areas of West Asia and the Mediterranean.

Low and High Emission Scenarios have been developed for the West Asia region and particularly for the countries of the Levant (IISD, 2009). In short, in both cases there would be a temperature increase, more irregular rainfall and a decrease of agricultural output in this part of the world.

Emissions scenarios

Low Emissions Scenario (B1)

- **Global population:** peaks mid-century at 9 billion
 - Jordan population grows from 5.5 to 6.9 million in 2015 (2.2% yearly)
- **Economy:** moves toward a service and information economy, reduced material intensity, improved equity
- **Energy:** clean and resource efficient technologies

What this could mean for the Middle East climate by 2050

- **Temperature:** 2.0 – 2.5°C increase
- **Rainfall:** 20% more rain in summer, 5% less in winter, more extreme rainfall events
- **Sea level rise:** approximately 0.10-0.20m
- **Agricultural output:** decreases
- **Evapo-transpiration:** increases
- **Pests, disease:** expected increases

iisd

Emissions scenarios

High Emissions Scenario (A1F1)

- **Global population:** peaks mid-century at 9 billion
 - Jordan population grows from 5.5 to 6.9 million in 2015 (2.2% yearly)
- **Economy:** very rapid growth, reduction in regional differences in per capita income
- **Energy:** continues to be fossil fuel intensive

What this could mean for the Middle East climate by 2050

- **Temperature:** 3.1-3.7°C increase
- **Rainfall:** 13% more rain in summer, 3% less in winter, more extreme rainfall events
 - i.e. similar rainfall to B1 by 2050. Impacts accelerate with warming
- **Sea level rise:** approximately 0.13-0.30m
- **Food security:** becomes problematic
- **Aquifers:** saltwater intrusion to coastal aquifers

iisd

² Contributions from Rami Salman, Regional Programme Coordinator (RPC) of the IUCN Centre for Mediterranean Cooperation in Malaga/Spain, Mark Smith, Head of the IUCN Global Water Programme in Gland/Switzerland and Peter Laban, RPC REWARD of the IUCN Regional Office for West Asia in Amman/Jordan.

Climate Change Adaptation is becoming increasingly a rallying force to raise attention for the alarming spiral of environmental degradation. As already mentioned in the former section, it becomes increasingly evident that climate change will indeed seriously impact dryland ecosystems, sustainable use of natural resources and livelihoods in the watersheds of the West Asia and Mediterranean Regions.

Important questions have still to be answered though. What are the direct effects of climate change on ecosystems and livelihoods that cannot be attributed to other factors? Or phrased differently: what is the incremental or aggravating effect of climate change on top of other important causes for degradation of these ecosystems and livelihoods (such as increasing population, urbanization, political conflict), especially when dealing with fragile ecosystems as those in the dominantly dry lands of West Asia and the Mediterranean Region. How can such additional impact be measured and what can be done about it in a realistic and factual way, especially for women and vulnerable groups in local communities. How to cope with such climate change, how promote technologies that can help both local people in such ecosystems to adapt to climate change and to increase the resilience of these ecosystems? Where potential for climate change mitigation does not seem to be very high in West Asia and the Mediterranean, important efforts are needed to increase resilience and adaptation capacities in face of climate change. Taking-up climate change adaptation in REWARD's agenda will contribute first to learn and then to take action on how best to harness rural people in coping with climate change. REWARD intends to do so in the ecosystems in West Asia and the Mediterranean Basin by and large characterized by **drylands and scarce water resources**.

IUCN's Climate Change Initiatives

IUCN has declared that it will give top priority the coming years to one of its Thematic Priority Areas, i.e. "*Changing the Climate Forecast*" (TPA2). Different initiatives are taken within IUCN that REWARD would like to join and strengthen. They are the ***IUCN Climate Resilience Initiative*** and ***the IUCN Mediterranean Mosaic Initiative***.

An IUCN Climate Resilience Initiative

On the basis of experience in different projects of the Water and Nature Initiative over the last five years an approach to water and climate change adaptation is proposed. The main goal of the initiative is:

Adaptation to climate change implemented while strengthening sustainable development and poverty reduction in areas of high climate vulnerability by using resilience-based strategies for integrated water, land and coastal management.

The proposed objectives of the initiative are presented in Annex 3. This initiative has water at its centre, and is designed to help cope with long-term uncertainty through scenario building and strategic planning, so as to build socio-ecological resilience in vulnerable « hot spots », among others : drylands, oases, low-lying deltas & coastal mega-cities, small islands as well as mountain watersheds and their rivers.

Implementing the Climate Resilience Initiative in specific areas will revolve around the following key components or approaches to increase resilience of local communities and ecosystems:

1. Develop Diversity & Networks – of economy, livelihoods & networks
2. Promote robust ecosystem services – from natural river basin infrastructure
3. Enhance Self organisation – through participatory governance in adaptive institutions
4. Encourage Learning – from better information & capacity building

These components are logical parts of the broader approach to sustainable water resource management in terms of networks, participatory governance and learning, while testing approaches in demonstration projects shared by WANI with the REWARD programme.

The Mediterranean Mosaic Initiative (MMI)

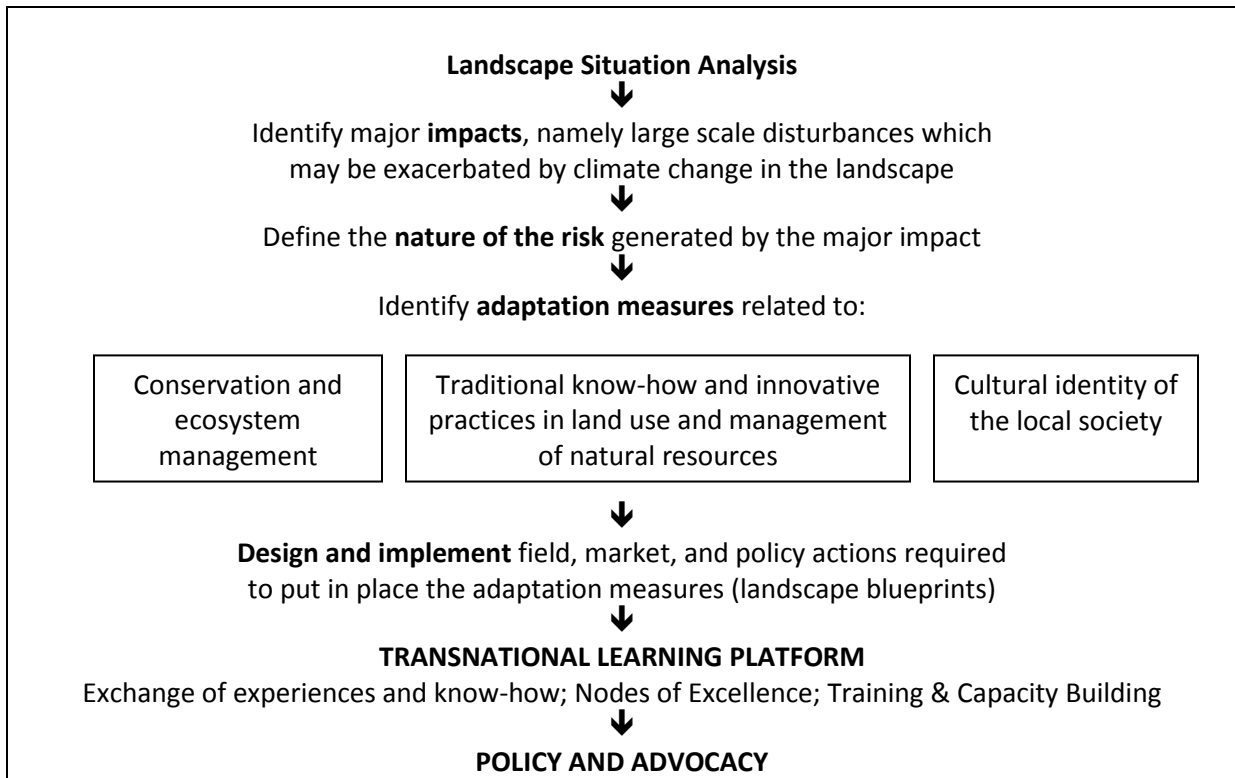
The goal of the Mediterranean Mosaic Initiative is to **build the resilience** of Mediterranean landscapes to global change through the **identification and implementation of adaptation measures** influencing land management, markets and policy frameworks. The MMI has the following objectives:

Objective 1: Enhance/restore the resilience of Mediterranean landscapes, whose natural and cultural heritage are threatened by sharp socio-economic changes leading to land-use modifications, and by the disrupting influence of climate change;

Objective 2: Test innovative approaches that can provide feasible solutions to the decline of biological diversity and the socio-economic crisis of marginal rural landscapes in the Mediterranean;

Objective 3: Create a network of pilot sites where such solutions can be tested, and use experience and lessons learned to influence the broader legislative framework and key policies at the local, national, and global levels.

The approach of the Mediterranean Mosaic Initiative is summarised in the chart below:



Addressing climate change adaptation issues in the REWARD dryland watersheds

The two initiatives outlined above are complementary and align well with the general systemic approaches advocated by REWARD: visioning, assessment and analysis, working out different scenarios (future states of external factors) under which a vision can be realized, strategize (identify appropriate adaptive measures), design and implement, share, reflect and learn through multi-stakeholder processes and networks. And on the basis of this advocate for policy changes where necessary.

The Mosaic Initiative is already being implemented by the IUCN Centre for Mediterranean Cooperation, and could serve as an example of how climate change adaptation could be mainstreamed through the REWARD activities. It was agreed that sharing the experiences among the different experts working on the pilot sites of the REWARD programme and the MMI would be a good way to add value to IUCN's work on climate change, and the implementation of the 2009-2012 programme of work. Ways should be found to incorporate the Mediterranean Mosaic Initiative within the overall REWARD approaches for systemic water resource and dryland management. Vice versa, it will be explored how and where REWARD approaches could strengthen the activities undertaken in the Mediterranean Mosaic Initiative.

The "IUCN Climate Resilience Initiative" – if brought into fruition - was considered in the Sharm Al Shaikh workshop very relevant to REWARD, Mediterranean Mosaic Initiative, the Dryland Initiative and other similar initiatives within IUCN. It will add value to the work of IUCN, enhance lesson learning and experience sharing, promote cross-regional coordination and make sure that climate change is mainstreamed throughout the implementation of the IUCN programme. The initiative will also add value to the work of members and partners. Alignment and synergies of approaches could best be handled in joined development of new projects.

The discussions in the working groups in the REWARD Sham Al-Shaikh Workshop focused on how the REWARD programme could incorporate climate change adaptation and increasing resilience into its activities. Here are some of the main suggestions made:

- Make initial assessments of potential impact of climate change on ecosystems and livelihood security at the pilot project and watershed level
- Document how local communities have adapted to climate constraints and extreme weather events in the past.
- Development and testing of innovative management practices (reduction of water stress, improving water balance, soil conservation, fuel reduction, species diversification, rural tourism...)
- Test and document models for carbon-offsets in dryland ecosystems in watersheds
- Enhance skills of local practitioners through training and transfer of technology and know-how
- Establish and train functional stakeholder platforms (REWARD model) at the pilot level to support national adaptation strategies and their linkages to biodiversity and livelihoods
- Incorporate potential climate change impacts into Decision Support Tools and draft recommendations for influencing policy.

The ideas presented in the Climate Resilience Initiative served also as a basis to reflect on key messages that are important to convey to decision and policy makers and how such key messages could be dealt with in the REWARD Programme (see Table below).

Key Message	Relevance to REWARD Programme
Resilience safeguards the MDGs: « <i>integrate environment & development</i> »	The communities living around the REWARD pilot sites depend on the goods and services of the ecosystem for sustaining their livelihoods. The tools developed through the REWARD programme should incorporate resilience as one of their components and consider the MDGs as an inseparable part of the REWARD objectives.
Environment is infrastructure	<ul style="list-style-type: none"> • Increase awareness for all stakeholders about climate change. • Enter climate change adaptation options into the Decision Support Tools for water resources management that REWARD is developing • Share the DSS results for possible cooperation and amendment of policies in order to add climate change to the development agenda
Empowerment is adaptation	Climate change adaptation measures could be easily incorporated into the day-to-day management of natural resources. Empowering communities to do so is an essential part of increasing their resilience. There is an urgent need to undertake training relevant to climate change adaptation for the managers of the REWARD programme, and extend that later to all the stakeholders taking part in the programme.
Institutions must be fit to face uncertainty	<ul style="list-style-type: none"> • Develop initial assessments within the context of different scenarios • Identify available tools and test them in the field • Identify the need for further tools and benefit from experiences and lessons learned through the work of other institutions and networks • Adapt to the context
Put all the infrastructure options on the table	This was further analysed in the working groups and some options which could be added to the REWARD activities included: <ul style="list-style-type: none"> • Reduction of soil erosion • Building or restoring terraces for soil & water conservation • Tree planting (forest or fruit species) • Protection/retaining walls • Rehabilitation of old traditional cultivation systems • Identification of demonstration sites where innovative resilience options could be identified to support sustainable livelihoods • Test and adapt the CRISTAL tool to the regional context

4. RBA, gender and equity in management of dryland watersheds

Equity and gender issues are still controversial topics when dealing with water resource and dryland management in this and other regions. In spite of the lip-service paid to this subject, the rights and shares of poor people - and especially women among them – in terms of access, benefits and decision-making are in many cases not respected or considered. Non-governmental organisations (NGOs) and government agencies have important roles and responsibilities in creating an environment in which people can both exercise their rights to water and assume accountability for management of water. Anyone who exercises rights to a natural resource, be it water, land or forest, must also assume a degree of accountability for the management of that resource. Rights-based approaches (RBA) explore conditions under which rights can be asserted and local level accountability assumed.

The REWARD Team when working in the former EMPOWERS Programme (EC-funded, implemented by CARE and partners, 2003-2007) has been exploring and testing methodologies to analyse rights and accountability of local people in local water resource management. This was done on the basis of an earlier work done in community forestry programmes in West Africa (Laban 1994). On the basis of action-research an analytical framework is proposed within a broader RBA framework. This analytical framework is presented in a recent IUCN publication on RBA approaches in nature conservation (Laban et al, 2009)³. It builds on the premise that long-term and sustainable effects of natural resource management interventions depend, for an important part, on the sense of ownership and the degree of accountability that local people assume for resource management and use in their community. In many cases, local people will not assume such accountability because they do not feel that the activity and/or its results are really theirs (ownership) or deliver tangible benefits. Rather they are something provided temporarily by an outside institution (an NGO or a government agency) that does not meet their real priorities or longer term interests. Many water infrastructure and service delivery projects in the past have suffered from these shortcomings. In many situations, the degree to which local people are able to assume accountability for resource management is subject to the knowledge, rights, claim-making power they have for and the benefits they can secure from that management. Local level accountability has to be seen as a long-term goal rather than a pre-requisite for a development or investment programme in the water sector.

The analytical framework as presented in the cited IUCN/CIFOR publication provides a set of action-research questions that will help to get more in-depth information on the extent local people and women can exercise their rights to water or another (dryland) natural resource and to what extent they are able (or not) to assume responsibilities for the management of that resource. In many cases it becomes clear that a certain number of pre-conditions (knowledge, rights, benefits, claim-making power) to assume such responsibilities are not fulfilled. Answers to these research questions raised in this framework can contribute to recommend policies to ensure people's rights can be fulfilled (especially those of underprivileged groups) and to ensure that people can assume their share of accountability for the use of water resources. It is evident that most of the issues mentioned here are

³ Peter Laban, Fidaa Haddad and Buthaina Mizyed, 2009. Enhancing rights and local level accountability in water management in the Middle East: conceptual framework and case studies from Palestine and Jordan. In: Rights-based Approaches: exploring issues and opportunities for conservation (IUCN/CIFOR 2009)

gender sensitive and that further action need to differentiate between different social and gender groups in local communities to ensure equity in water resource governance.

With this analytical framework in mind, presented in the Sharm Al Shaikh workshop, participants in the workshop reflected on and discussed the following three questions, in order to see how in the coming time a more explicit focus can be given to gender and equity in the implementation of the REWARD Demonstration Projects.

Questions:

1. What we do already on “gender and equity” in the REWARD projects?
2. What can we add easily on “gender and equity” in the REWARD projects (without extra funding)?
3. What “gender and equity” specific objectives are interesting/useful to add but require additional funding?

Palestine	
1) What we do already on “gender and equity” in the REWARD projects?	<ul style="list-style-type: none"> • In the Inception Phases of the REWARD Projects a preliminary social analysis and gender analysis was made, where different roles of men and women were analyzed; this analysis was incorporated in the project activities. • However, the four preconditions of the RBA/accountability framework were not studied in that detail.
2) What can we add easily on “gender and equity” in the REWARD projects (without extra funding)?	<ul style="list-style-type: none"> • To have in depth analysis of gender and of the 4 pre-conditions of the accountability analysis framework (rights, benefits, clime making power, Knowledge) • To make use of the already existing knowledge and experience within the REWARD core staff as resources but with the need to develop their capacity in accountability analysis. • Conduct gender /accountability analysis based on the basis of the above analysis plan to see what interventions are necessary to meet some or all of the 4 pre-conditions.
3) What “gender and equity” specific objectives are interesting/useful to add but require additional funding?	<ul style="list-style-type: none"> • Need for COMPLEMENTARY funding for more in-depth action research on gender/equity and rights/accountability analysis for good local water governance.

Jordan	
1) What we do already on “gender and equity” in the REWARD projects?	
2) What can we add easily on “gender and equity” in the REWARD projects (without extra funding)?	<p>Gender is taken into consideration in the two REWARD projects that are implemented in Jordan through:</p> <ul style="list-style-type: none"> • Stakeholder analysis. • Water users groups. • Accountability on rights analysis. • Participatory rabid analysis. • Problems analysis.
3) What “gender and equity” specific objectives are interesting/useful to add but require additional funding?	<ul style="list-style-type: none"> • Capacity building (ToT in Climate changes and Drylands)

- EMPOWERS Toolkit:
 - In depth gender studies (Technical & Financial resources)
 - Process documentation (best practices behaviors change)
- Knowledge exchange (extra fund).

Egypt	
1) What we do already on “gender and equity” in the REWARD projects?	<p>Working through key persons in order to gain trust</p> <p>Study and analysis of gender and the obstacles in not involving women where:</p> <ul style="list-style-type: none"> ○ The men ○ Mothers in law ○ The meeting time is not suitable ○ The venue is not suitable.
2) What can we add easily on “gender and equity” in the REWARD projects (without extra funding)?	<ul style="list-style-type: none"> • Awareness campaigns targeting both genders • Starting to involving women in data collections, knowledge, rights, and benefits. • Encourage both genders to be members in committees. • Encourage women to participate in decision making. • Stimulate women to participate in committees so as to have a voice in decision making, • Woman participation in public awareness campaigns to rise the awareness among other village • Campaigns for advocacy in issues that are related to their own interest in water resources to effect policies
3) What “gender and equity” specific objectives are interesting/useful to add but require additional funding?	<ul style="list-style-type: none"> • Increase stakeholders training in RBA and accountability analysis as well as in gender issues. • Include gender concepts and the RBA concept in development within the training programs of water resources management training centers (for example Irrigation Training Centre in Cairo)

5. Systemic approaches in REWARD⁴

About systemic approaches

The term “systemic” can be considered as close to “holistic” or “integrated” as is more commonly used in the water sector. “Systemic” is frequently used in the medical sector (in reference to the whole body and all its different functions) and in the agricultural sector (as in systemic pesticides). The word “systemic” is usually used to imply “relating to or affecting the whole system”. The term “systemic” is indeed used and preferred here especially to capture the need to deal with the whole system, in our context eco-systems. “Systemic” gives also emphasis to the need to think, plan and make decisions in a way that takes all aspects into account.

REWARD calls on such more systemic thinking and approaches. Analysis, planning and decision-making is too often done without the rigor of a more systemic/systematic framework. Systemic thinking can be done “at the back of an envelope”. But there also schools of thought that have elaborated systemic tools into complex, data-hungry decision support systems. Practice in many cases and in many different countries has demonstrated that such complex DSS do not easily work and/or get accepted and adopted by the institutions they are meant for. The problems associated with such complex DSS are in the high and refined level of required data that are often only difficultly available, the need to be able to maintain and update the data inputs and the difficulty to make such complex systems acceptable to the day-today manager and decision-maker.

Recognizing such pitfalls, REWARD still believes that it is possible to support planning and decision-making by more quantitative validation of assumptions and narrative scenarios (as defined in Box 1). Qualitative and narrative oriented scenario building has proven a strong tool in planning and decision-making (as has been demonstrated in EMPOWERS). REWARD hopes to add value to such approaches in substantiating data assessment and analysis by slightly more quantitative and numeric tools that we propose to label as Decision Support Tools. They are especially meant to deepen assessment of data and give further validation of narrative scenarios. After one year of REWARD, two applications seem to become interesting for further exploration. They are a possible DST that attempts to capture the dynamics of hydrological flows in a watershed or other geographically bounded areas. And second the development of ecologically sound economic analysis (taking into account the cost and benefits of ecosystem services) that can compare and validate different scenarios developed in the planning process. This Working Paper will further elaborate on such systemic approaches (including DSTs) and how they can be made operational through application in on-the-ground demonstration projects.

From methodology to practice

The methodologies and approaches discussed in this paper are in the process of being tested and further developed in a series of demonstration projects that are being implemented in different countries. Thus, an important double feed-back mechanism is put in place to ensure that concepts and theory are “grounded” in the reality of day-to-day practice as faced by members of local communities, staff of NGOs and of Local Government Agencies both at the District and Governorate level. At the same time, applications on the ground are validated and substantiated by science-based knowledge being available in formal science or in traditional and indigenous wisdom.

⁴ Extract of a first REWARD Working Paper on Systemic Approaches to IWRM (Laban et al, June 2008)

All projects will have important development objectives in terms of poverty alleviation, community development and empowerment. At the same time different projects will tackle different water resource issues that are representative for the region at large. Five projects have already started. These projects are located in Egypt, Jordan (2), Palestine and Yemen.

Need for stakeholder dialogue

REWARD proposes a systemic approach that builds on vision, validated knowledge and the need to come to consensus among different often conflicting interests. It brings knowledge and insights together in a way where problems and priorities are seen in the context of a broader system. Tools are developed to make different options and scenarios clear so that after consultation, weighing of priorities the best decisions can be made for a particular place and a particular time. In many cases this will involve compromises and decisions that are not favored by everybody. Different people and organizations may have different interests, opinions and often also a different perspective on the same issue. This implies more than often conflicting agendas in meetings and decision processes. Strong process facilitation is required here. For this REWARD will use **Stakeholder Dialogue and Concerted Action (SDCA)** that was developed and put in practice in this region. The tools and methods to apply this approach are detailed in a Planning Guideline to Water Governance developed by the EMPOWERS Programme funded by the EC and implemented by Care International and partners⁵.

Such a SDCA process is meant to facilitate the implementation of the different sequential steps of a Planning Cycle for IWRM as is described in the next section. An underlying assumption is that stakeholder involvement, particularly at the intermediate and local level, throughout the process of problem and solution identification and selection of possible developmental options, will lead to more equitable, efficient and sustainable water resource management. It is also assumed that such stakeholder involvement, especially at the community level, will enhance access and rights of the underprivileged groups in society. The experience of the EMPOWERS Programme has given ample proof that such assumptions are valid.

Systemic framework for planning and decision-making

Apart from the much needed professional facilitation through a SDCA approach, coming to effective planning and decision-making requires a structured and systematic process. This is certainly true in the water sector in the West Asia and Mediterranean Region faced with sometimes extreme scarcities and often highly conflicting demands of different groups of people with different stakes in the use of water. Making sure that data, information and different options can be well assessed and analyzed needs a more systematic if not systemic way of thinking and organizing.

To this end, the REWARD programme will build on a comprehensive **Planning Cycle for Integrated Water Resource Management (IWRM)** that was developed and tested by the above mentioned EMPOWERS programme (see earlier reference to the Planning Guideline). Here after, such a planning cycle is briefly described. The following section will explore how this planning cycle can be further refined with additional and more in-depth decision support and systemic tools.

⁵ The EMPOWERS Approach to water Governance – Guidelines, Methods and Tools (Patrick Moriarty, Charles bachelor, Firas Abd-Alhadi, Peter Laban, Hazem Fahmy – 2007). The guidelines are translated in Arabic and available at the following website: www.empowers.info.

The here proposed planning cycle starts with the identification of water-related problems and consequently the development of area specific long-term but realistic visions for water resource development. This strategizing process is supported by the collection and analysis of relevant information on water resources, infrastructure, actors, demand and access. Such data and information can be further processed in software systemic tools to facilitate analysis and synthesis and to validate and substantiate visions, scenarios and strategies (see box below). Indeed, on the basis of available and analyzed information, scenarios are outlined under which a stakeholder agreed vision could be realized. Different strategies can be developed under different scenarios to achieve the earlier defined mid-term or long-term vision. The aim of this planning cycle is to support stakeholders at local and intermediate levels in making the essential technical and political decisions to develop and manage their water resources. It cannot, however, be over-emphasized that the cycle is intended as a loose framework or guide – not a step by step set of instructions to be followed to the letter. The cycle is intended to be applied in a flexible, iterative way and can be used at different levels of complexity (village, watershed, governorate).

Project cycle management (PCM) approaches are being used increasingly in the implementation of IWRM programmes. The cycle is based on the project management cycles as set out in the European Commission’s guidelines (EC, 1998) on Integrated Water Resource Management (IWRM). Central to PCM is the idea of managing a process, rather than managing a one-off event (e.g. construction of a water supply system). The here proposed planning cycle for IWRM, in common with most such cycles, is a typical systemic approach and emphasizes the need to put decision making regarding water based actions within a clearly defined set of steps that ensure that the decisions reached are based on a clear and logical flow of thought.

The IWRM Planning Cycle as developed by EMPOWERS (see **Error! Reference source not found.**) is made up of six principal steps, each of which can be further divided into sub-steps or iterations (for further reference see the Guideline mentioned under footnote 3).

The six main steps are:

- **Visioning:** initial stakeholder analysis, problem identification, visioning, and scenario building;
- **Assessing:** targeted data collection and analysis; creation of a shared information base;
- **Strategizing:** Development of strategies to meet the vision under different scenarios;
- **Planning:** Detailed planning based on most likely scenarios and related strategies;
- **Implementing:** execution of plans;
- **Reflecting:** analysis of monitoring and documentation to inform further cycles;

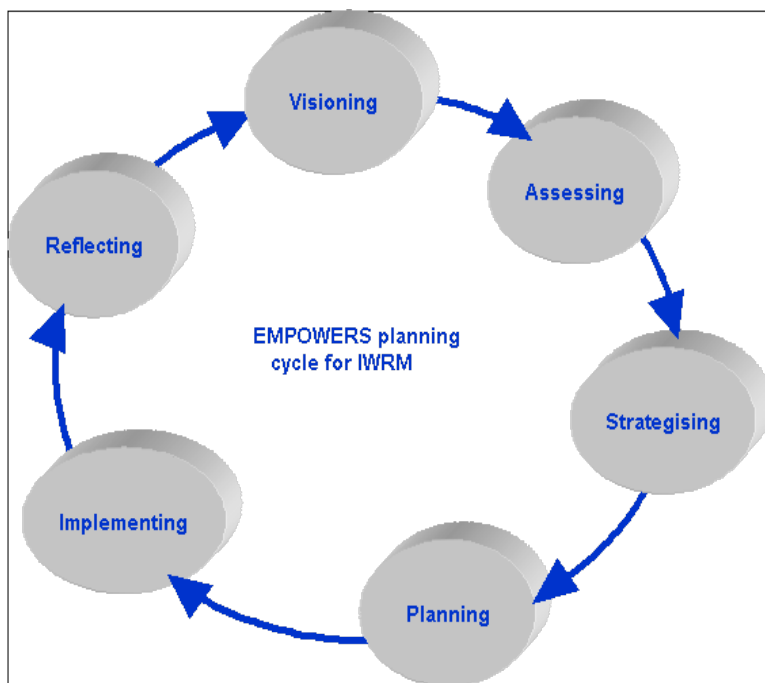


Figure 1. The EMPOWERS Planning Cycle for IWRM

Box 1 Key terms related to scenario building, and their definition in EMPOWERS

A vision is a concise description of a desired future state. Visions provide a picture of *how* we would like the world (or our water resources and services) to be at some future time. Consensus on this vision is required before a strategy is developed.

A scenario is a consistent description of a future situation as determined by those factors that are both most important and most uncertain; they are stories about the way the world might turn out tomorrow. Developing a set of narrative scenarios helps identify possible pathways (strategies) towards a shared vision of the future, based on current trends and knowledge of sources of greatest uncertainty. Narrative scenarios can and should be a mix of qualitative and quantitative information.

A strategy is a medium to long-term planning framework within which concrete activities are developed and funded. Over time an effective strategy should lead to achievement of the above mentioned vision under the assumption of one selected scenario. For each scenario different strategies can be developed. Strategies should be regularly updated in the light of new information. Strategies tend to be highly political and reflect the policies of a governing body or an organisation.

A plan is a coherent set of decisions about the use of resources, translated in activities that taken together have the potential to achieve a vision. A plan includes an explicit statement of the methods to be used, costs, responsibilities, schedule of activities and agreed targets.

Development of the systemic framework within REWARD

IUCN has shown strong interest in capitalizing on the efforts made in EMPOWERS. REWARD as its de facto successor will therefore build on the SDCA approaches and the described Planning Cycle for IWRM. Recognizing that there is still ample space for improvement, REWARD has given itself the challenge to further refine the planning framework presented above. Within this framework it will work at least on the following aspects:

- ***Scale and environmental flows***
- ***Software supported decision support and other systemic tools***
- ***Socio-economic analysis of ecosystem services***
- ***Variability and uncertainty***

In the mean time, since 2007 good progress is made with the development of Decision Support Tools for mountain watershed planning, oasis/ground water management and water flow and crop prediction in large river systems. More detailed information will be provided in an up-coming Working Paper on Decision Support Tools as an important element in the above described systemic planning cycle.

6. Changing the institutional process around ecosystem management⁶

Ecosystem multi-stakeholder platforms as a vehicle for institutional change

Multi-stakeholder processes⁷ are increasingly important in strategies for achieving sustainability and social justice in managing the natural resources of ecosystems. As seen in the former section on systemic approaches, REWARD and others in IUCN make intensive use of such processes to bring people of different organizations, background and perception together in order to attempt to come to joined planning and decision-making on the basis of a shared vision for development. Professional facilitation is key in such stakeholder dialogues. Yet these multi-stakeholder processes often do not realize their potential, and this shortfall limits the ability of government, business, civil society and citizens to work constructively together on a common agenda.

The Change Alliance

Both WANI and REWARD are invited to participate in The Change Alliance initiated by a number of research and development organizations in The Netherlands, the United States and the United Kingdom. The Change Alliance is an emerging global network of organizations joining forces to increase the effectiveness of multi-stakeholder processes. It aims to improve the quality of the process design, dialogue, learning, and facilitation, on which multi-stakeholder collaboration depends. Over a five-year period, the Alliance will mount a number of action inquiry initiatives, through which it aims to deliver improved outcomes and enhanced impact in a diverse set of multi-stakeholder processes. Capacity development for the individuals and organizations that participate will be a significant part of this work. The Alliance will contribute to developing capacity more broadly by creating a global learning platform that will link the action inquiry initiatives to each other and make the learning widely accessible. Through the global learning platform and engagement of leaders in government, business and civil society, the Alliance aims to stimulate greater investment in and support to create the enabling conditions for more effective multi-stakeholder processes.

Looking Deeper

The program proposed by the Change Alliance is based on a view that in multi-stakeholder processes the process itself is just the 'tip of an iceberg'. Achieving concrete results requires addressing underlying challenges and questions, for example, about social, economic and political change, power dynamics, different forms of governance and democracy and, the effectiveness of facilitation and leadership. Such challenges and questions are embedded in the social framework or "institutions" that make up society. If multi-stakeholder processes create good conversations but gloss over these deeper issues, they run the risk of being rejected as naive and doing more harm than good. The Alliance seeks to develop capacities to work with the full range of issues by bringing the most relevant theory and practice to bear in critical reflection on real-world experiences.

In addition, because most multi-stakeholder processes deal with complex issues, the practical application of complexity thinking is central to the proposed work of the Change Alliance. In complex

⁶ Contribution from Karèn Verhoosel of Wageningen International, Wageningen/The Netherlands

⁷ The term multi-stakeholder process is used here to cover a diverse range of learning, dialogue and innovation processes that complement formal governance mechanisms. Such processes bring citizens and stakeholders from government, civil society and business together to tackle difficult issues in ways that build trust and understanding and enable collective action. They are designed to be open, creative, learning orientated and empowering. They offer spaces to go beyond formalised negotiation, adversarial politics and conventional advocacy.

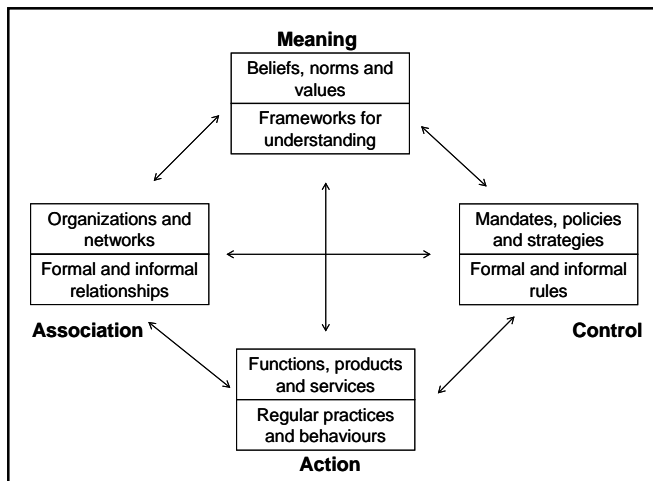
adaptive systems such as the economy, society and ecosystems, cause and effect relationships are often difficult to fully understand. Further, change happens fast and may be quite unpredictable, risks are often high and the consequences of failure may be severe. These conditions demand ways of intervening that go beyond established approaches, which tend to be linear and mechanistic, to steer change in ways that are less top-down and control oriented and more decentralised, responsive and adaptive. The Change Alliance will focus on understanding the implications of this reality for multi-stakeholder processes and for the mechanisms of governance more broadly. It will contribute to translating these ideas in improved practice.

Institutional analysis

Institutional changes require analysis of the “institutions”. Institutions can be understood as the ‘rules of the game’ that make ordered social life possible. Language, currency, marriage, property rights, taxation, education systems and laws are all examples of institutions. By definition, institutions are the more stable and permanent aspects of human systems. Many institutions have evolved without much conscious design, and they interrelate with each other in a complex network. The rules of language make it possible for laws to be established, and these laws are then upheld by courts and policing systems. People obey laws because of a whole system of societal beliefs, values and norms. Our lives are embedded in this highly complex web of social institutions, and we take many of them for granted, often not questioning their origin or the underlying assumptions and beliefs on which they are based.

In working with stakeholder groups around change processes, such as sustainable water management, it has proved necessary to be more explicit about different institutional dimensions. The framework given in Box 1 has proved helpful in prompting a deeper analysis of important institutional factors.

Box 1. A framework for exploring the complexity of institutions



For pragmatic reasons it deliberately takes a broad perspective on what institutions are. This means including organizations and regular patterns of behaviour alongside the notion of institutions as ‘rules’. Formal and informal institutions are equally important, and often reinforce each other. Institutional analysis often focuses too much on formal rules, such as policies and laws. This framework shows the importance of asking questions about a wider set of factors that interact to shape the incentives for actors to behave in particular ways (Woodhill, 2009⁸).

A try-out exercise was made to use the above analysis framework in the context of the different demonstration projects. Results are reported in Annex 4. After presentation of these institutional analyses the teams were asked what their entry point for change is in the project. Do you start changing the beliefs, norms and values of people, do you start changing regular practices and behaviors, do you

⁸ Woodhill, 2009, Institutional Innovation and Stakeholder Engagement. Linking Transition Management in the North with Development in the Global South (article to be published)

aims to influence policies, rules and strategies, or do you start building relationships and networks between different stakeholders to achieve change? The discussions about the entry points for change will be continued in the different demonstration projects.

Addressing institutional change issues in the REWARD Programme

One of the sectors the Change Alliance would focus on is the water sector. REWARD and WANI believe there is still much to learn and are keen to become part of this Alliance. Engaging in the Alliance will enable WANI and REWARD to gain access to ideas, expertise, backstopping, critical reflection processes on assumptions of change and to develop the capacities of staff/partners, as well as access to a dynamic learning network. This will enable WANI and REWARD to improve the quality and effectiveness of the work while at the same time contributing to critical questions and challenges affecting the wider development sector.

The discussions in the working groups in the REWARD Sham Al-Shaikh Workshop focused on how the REWARD programme could learn from and contribute to the Change Alliance, so as to increase social resilience of people in the implementation of ecosystem related activities. Here are some of the main suggestions made according to three different questions

Question	Suggestions
How could your demonstration project (a potential action inquiry initiative) contribute to the Change Alliance?	<ul style="list-style-type: none"> ○ With existing experience in working successfully as a team, as well as experience in involving local stakeholders ○ With documentation of the process, the lessons learnt, as well as the different tools and methods used ○ Possibility to test new tools and methods in the demonstration projects ○ With experience in following the project management cycle
What would you expect from the Change Alliance? (Action inquiry initiative & Global learning platform)	<ul style="list-style-type: none"> ○ To exchange experiences, knowledge, expertise, methods, tools ○ Provide training and capacity building (on e.g. process documentation, new methodologies/approaches, fundraising skills, facilitation skills) ○ Learning and coaching workshops ○ New tools and methods (e.g. Institutional analysis) ○ To test our methodology at other locations ○ Evaluation and recommendations ○ Changed attitude of donors to allow for learning (flexibility) ○ Critical view
What would be necessary to organize within the demonstration project to participate in the Change Alliance?	<ul style="list-style-type: none"> ○ To develop new tools that can benefit the alliance ○ To translate the learning knowledge to appropriate and/or Arabic language ○ To organize a focal point ○ Human and financial resources
In the coming months it is intended to give follow up to these results of the working groups, by further exploring on how to get started with the different demonstration projects as action inquiry initiatives.	

7. A Vision for a Regional Knowledge Network for Water Resources in Drylands

As mentioned in section 2 of this paper IUCN ROWA is implementing since 2006 the WESCANA Water Project funded by DGCS of the Italian Ministry of Foreign Affairs. It has been this project that has inspired IUCN to expand the project ambition into a long –term programme on Water Resource and Dryland Management (REWARD). The WESCANA project is a corner stone and considered thus far the “**flag-ship project**” within the overall REWARD Programme. REWARD is one of IUCN ROWA’s five main programme areas for the coming ten years. As mentioned the WESCANA project aims to develop systemic approaches to Sustainable Freshwater Management in the region and to influence where necessary the adoption of policies to support such approaches. The project will do so by establishing a regional knowledge network of organizations working in the water sector to enhance mutual learning among interested organizations in the region through exchange visits, capacity building, use of existing knowledge and professional advice o each other. The WESCANA project is also contributing to the demonstration projects on relevant water resource systems in different countries implemented within the REWARD framework. All demonstration projects focus on developing practical systemic models for watershed or river basin planning and development, based on a system Approach.

A long-term vision for the Regional Water Knowledge Network

Based on the experience and insights learned in the past years in the WESCANA project, a sharper focus has been evolved for how this RWKN could be further developed and strengthened. Such a vision is guided by the following principles:

- Developing systemic approaches for IWRM at a watershed/river basin level
- Encouraging South-South cooperation between institutions in the region;
- Capitalizing on know-how in existing institutions in the region
- Organizing around specific water resource systems relevant for the region, with demonstration projects as learning ground
- Embarking on multi-stakeholder platforms at different levels (watershed, national, regional).

Overall Structure of the RWKN

The WESCANA project, being the pivot in the overall REWARD Programme and facilitated by IUCN-ROWA, proposes to bring into practice this vision by creating different concentric circles of knowledge and know-how (see diagram below).

- A. An inner body of Centers of Excellence (**Network Knowledge Centers**), institutions with demonstrated experience in one or more key themes considered important for the Network as a whole, working closely with IUCN ROWA (the inner circle of the RWKN).
- B. The main body of institutions (**Water Network Members**) working on integrated water resource management and involved in different ways in the network - as partners and stakeholders in the **national networks** in demonstration countries or as institutions in other countries working on the same water resource systems - and participating as member in one or more of the **thematic sub-networks** organized around water resource systems (the middle circle of sub-networks).
- C. A body of regional institutions (**Network Support Members**) that by their mandate and interest could give support to the networking and activities of the RWKN (the outer circle).

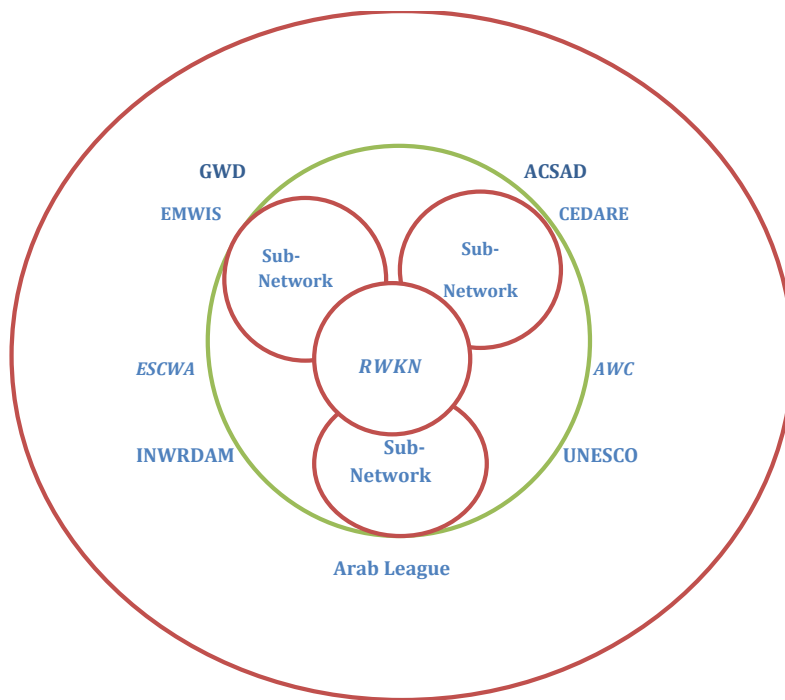


Diagram 1. Overall structure of the Regional Water Knowledge Network

By shared interest and the pragmatic nature of activities facilitated in the network, it is foreseen that a complex web of interaction will materialize between the different types of members described above; between knowledge centers and network members, among network members and between knowledge centers, network members and support members.

Rational and functions

The RWKN will serve three functions that are intrinsically connected and mutually serve each other:

- (1) *promoting a systemic approach to water resource management;*
- (2) *mutual learning and networking to support each other with each others' specific knowledge and excellence;*
- (3) *connecting RWKN members with other global and regional water initiatives and institutions*
- (4) *Documenting what is learned*
- (5) *Joint development of new ideas, activities and projects*

RWKN Sub-Networks

As mentioned above, it is recognized that in the region distinction can be made between different water resource systems determined by different physiographic conditions (see section 3). At the same time such water resource systems interact with other developmental interests, including local government, rural/urban development, agriculture, industry, social welfare and health.

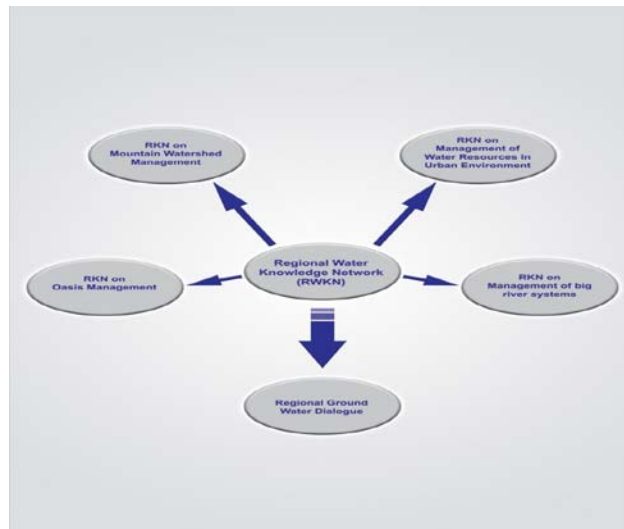
IUCN/REWARD considers that one of the most important elements of effective networking is a shared understanding of the concepts and a set of common objectives. Organizations wishing to participate in the RWKN are expected to show an interest in contributing to such shared understanding, while each dealing with one or more specific issues. The very first step of establishing the RWKN has therefore been

the scoping and identifying of specific issues or areas of interventions, and identifying the relevant parties to involve. This scoping and identification has resulted in 2008 in a strong basis for the RWKN where a number of initial water resource systems (see below) and relevant institutions have been identified in thus far a limited number of countries in the region (Cairo/July 2008 workshop). The coming years this basis will be expanded and further strengthened.

For the moment three sub-networks are getting organized around the following water resource systems:

- *Management of ground/surface water resources in mountain watersheds.*
- *Management of oases and the related ground water resources.*
- *Management and restoration of water resources in large river systems (with either an emphasis on irrigation/drainage management or on management of ground/surface water resources in urban water-scarce environments)*

They could be complemented in the future by others areas, where considered necessary.



Organization of each sub-network

Each sub-network will be organized around the above water-resource systems. Such a sub-network will be centered around the activities implemented in the identified demonstration projects that are mentioned below. Each sub-network will be build up from institutions in different countries of the region, including the countries where a demonstration project is identified. In the latter countries a national network is already developed with 6 to 10 members, all members in the broader RWKN. The Network Knowledge Centers (A) will facilitate the sub-network process and provide technical/conceptual knowledge to the sub-networks.

National networks are now being established in four countries (Jordan, Palestine Yemen and Egypt) around the REWARD/WESCANA demonstration projects mentioned in Chapter 2. All partners in these national networks will be members in the RWKN and some of them will be NKC's. These national networks are structured in different platforms at different levels. These are: at national level a national steering committee; at governorate (or district in Egypt) a technical committee; and in selected pilot communities, multi-user groups. Similar national networks will (Lebanon, Saudi Arabia) and could be established in other countries. The national level stakeholder platforms (or steering committees) ensure that the approaches developed are appropriate to national policy and therefore open to being scaled-up and institutionalized. Annex 7 gives an overview of these networks at national level in each of the four countries.

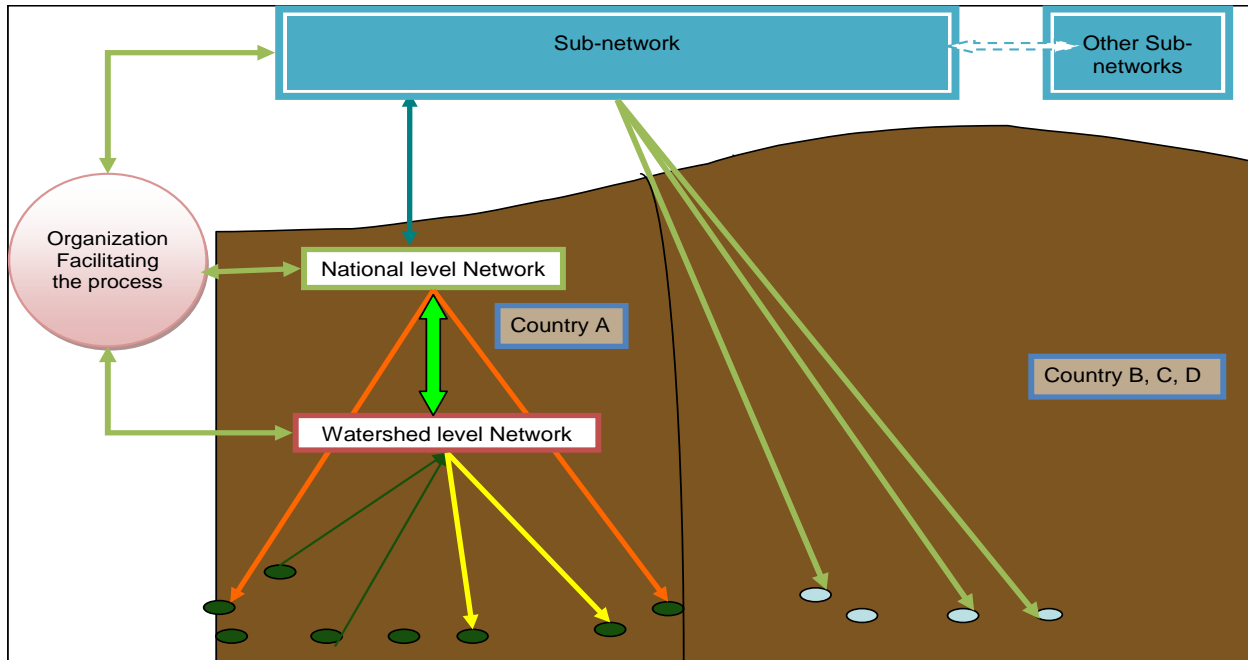


Figure 1: Structure of the WESCANA RWK sub-networks at different levels

Members of the RWKN

As important as identifying the RWKN members is supporting members to develop and taking ownership for sharing and networking with others. Networking and sharing of knowledge among RWKN members will be most effective when context specific and related to own interests and concerns. Effective involvement of members depends on the specific topic of work, organizations available and interested, resources available, etc. The key points are that members have a common shared vision as to what the objectives of the network are and to include organizations from implementation, policy, regulation, learning, etc and from different levels (regional, national, local).

Also, engagement of members in the networking will only be effective when members can envision concrete results that respond to their own interests and institutional agenda. To make such engagement happen it is necessary to organize proper process facilitation supported by the Knowledge Centers so as to provide services to network members on specific topics (incl. technology and know-how transfer). Key elements of effective networking include: identifying and understanding different perspectives and perceptions; constant checking that there is still common understanding and interests; sharing results and experiences; and sharing the learning and findings with other institutions and influencing policy.

This makes the scoping and identification of the context or theme of the network and the identification and selection of members of the network a complex process. It should be based on a thorough process of situation and stakeholder analysis and a clear vision and objectives for this network, as well as a clear view of the role that members will take in further uptake and scaling up. In order to get a better picture of the pitfalls, constraints and potentials in setting-up such regional networks a constraint analysis was made in four different subgroups in the WESCANA Work meeting that was part of the REWARD Workshop in Sham Al Shaikh (May 2009). A synthesis of this constraint analysis is provided in Annex 5.

Thus far the 50 organizations have shown interest to become a member of the RWKN and participate in different activities of the WESCANA/REWARD programme, for the moment mainly in the national networks around the demonstration projects.

Where a target of 10 Network Knowledge Centers (A) is foreseen, the following five institutions are identified as such:

- Palestine Hydrology Group (PHG) – Water information systems/data base, drink water supply and sanitation and systemic IWRM approaches
- Badia Research and Development Center (BDRC)/Jordan – Ecosystem research, water modeling,
- Water and Environment Center (WEC) of Sana'a University/Yemen – Watershed Management (Msc course in Water Resource Management)
- Centre for Environment and Development in the Arab Region and Europe (CEDARE)/Egypt – Integrated Water Resource Management, Decision Support Systems.
- Union of Agricultural Work Committees (UAWC) in Palestine – Water for irrigation.

Thus far 35 other institutions are involved and have become a Water Network Members (B). Apart from the institutions that are member of the National Networks in Egypt, Jordan, Palestine and Yemen (mentioned in Annex 7), institutions are also identified in other countries as Oman, Saudi Arabia and Lebanon. Number of countries and members will be expanded in the coming year, targeting a total number of 50 to 60.

Also the project has identified thus far the following 10 regional institutions that could become part of the RWKN as Network Support Members: EMWIS/France, GWP-MED/Greece, Arab Water Council AWC/Egypt, ACSAD/Syria, INWRDAM/Jordan, ESCWA/Lebanon, UNESCO/Cairo, Arab League/ Cairo, WANI/IUCN/Switzerland, ELC/IUCN/Germany.

In the Sharm Al Shaikh workshop (May 2009) scope and mandates for the different sub-networks were discussed, providing implicitly also ToR for the Network Knowledge Centres that will be invited to coordinate the sub-networks with facilitating support from the WESCANA Project and REWARD Programme. Annex 6 provides a synthesis of such scope, mandate and ToRs that will serve as a basis for the organizational arrangements necessary to make the sub-networks functional, including contractual arrangements between the WESCANA Project/IUCN-ROWA and the selected Knowledge Centres.

Regional and international interactions of the RWKN

The regional activities of the IUCN ROWA Regional Water Resources and Dry-lands Programme (REWARD) are importantly driven by the RWKN, supported importantly by the WESCANA project. *De facto the WESCANA project forms the beating regional heart of the REWARD Programme.* The enormous potential of the RWKN will both enrich the other activities of REWARD (and notably those implemented in the Demonstration Projects) and benefit of these other REWARD activities and projects.

Apart from the Demonstration projects mentioned above, REWARD has been supporting in 2008 and 2009 InWent in regional capacity building workshops on *"Public Awareness in the water sector"* and providing inputs to InWent yearly Water Governance Fora. It will engage in 2010 with GWP-MED and UNDP/WGP-AS in capacity building and other activities in the region around integrated water resource management and water governance, while REWARD will become an important action platform in a worldwide *"Change Alliance"* on multi stakeholder processes for institutional change, facilitated by

Wageningen University in The Netherlands (see section 7 of this report). By the nature of the RWKN its members are given the possibility to engage in these other networking, learning and capacity building activities.

The WESCANA Project forms part of and directly contributes to the IUCN Water and Nature Initiative (WANI), a world-wide effort to develop, test and implement systemic approaches to water management. This will allow the WESCANA RWKN members to benefit directly from the experience and expertise available in this Initiative worldwide. At the same time RWKN members through REWARD are invited to engage in IUCNs' Drylands and Climate Change Initiatives and undertake linking activities with projects facilitated by IUCN Malaga Office for the Mediterranean Basin.

Finally, to strengthen the RWKN and to give it more focus, REWARD has initiated in 2008 a Regional Dialogue on Sustainable Ground Water Management. CEDARE and Arab Water Council as well as GWP-MED and UNESCO have agreed to support this initiative that is scheduled for a period of 4 to 5 years through a series of annual events that will culminate in a high level policy workshop on the subject. The RWKN will have an important function to enhance this Dialogue, which will find its facts on the ground in the different demonstration projects and RWKN sub-networks.

Next steps for the RWDKN

To further build and strengthen the Regional Water Knowledge Network the coming year will focus especially on:

- a) further develop and strengthen the RWDKN to be a regional network of sub-networks around different thematic areas (water resource & dryland systems) as mentioned above;
- b) select additional Knowledge Centers (A) to provide services to the networks on specific topics (know how, capacity building planning, technology transfer, etc);
- c) select new RWDKN Members (B) in other countries of the region, to become members of one or more sub-networks;
- d) facilitate the interaction between the RWDKN members and the international institutions and initiatives.

This period will indeed be crucial to further build-out the Regional Water Knowledge Network, especially with regard to Knowledge Centers and Water Network Members (A and B). This will be done with advice from the Network Support Members (C). A word of caution is however needed. In the light of experience thus far in the region, it is not expected that the number of Knowledge Centers (A) will significantly increase.

Annex 1. WANI-2 Goal, Strategic Objectives and Outcomes

Annex 2. Vision, Mission and Strategic Objectives of the IUCN Dryland Initiative.

Annex 3. An IUCN Climate Resilience Initiative

Annex 4. The Change Alliance

Annex 5. Constraint analysis for setting-up regional networks

Annex 6. Mandate, scope and ToR for sub-networks

Annex 7. National Networks within the RWKN

Annex 8. Participants list Sharm Al Shaikh Workshop

Annex 9. Programme Sharm Al Shaikh workshop

Annex 1. WANI-2 Goal, Strategic Objectives and Outcomes

Goal

Benefits of freshwater and related ecosystems to humankind contribute to economic development and poverty alleviation, while the intrinsic values of these systems are respected and preserved.

Strategic Objective 1. Security of people and livelihoods enhanced through the demonstration of restoration and sustainable management of water resources and ecosystem services.

Outcome 1.1 Demonstration projects implemented and capacities developed for establishing integrated catchment and coastal management, environmental flows, restoring river basins and managing groundwater sustainably.

Outcome 1.2 Integrated approaches demonstrated through field projects focused on sustainable resource management that deliver livelihood improvements, including rural water supply and sanitation, and economic development.

Outcome 1.3 Developed capacities deployed to address climate change adaptation at different levels from national institutions to local communities at risk.

Strategic Objective 2. Water management decisions improved through promoting public participation and supporting good water governance.

Outcome 2.1 Dialogues on major water issues promoted and supported to create broad platform and consensus on ways forward and management priorities.

Outcome 2.2 National and sub-national institutional, policy and legal reforms supported so as to enhance mainstreaming of ecosystem services in water management.

Outcome 2.3 Transboundary water management institutions and dialogues supported and promoted to improve environmental conditions, resolve or avoid conflicts, and support economic development.

Strategic Objective 3. Sound public and private investments in water management and ecosystem services justified and promoted through robust economic and financial analysis and appropriate incentives.

Outcome 3.1 Sustainable national growth strategies and investment priorities informed by strategic economic analysis of water resources and ecosystem services.

Outcome 3.2 Economic development planning improved and wise investments promoted through using the outputs and capacities derived from economic valuation of water related ecosystem services.

Outcome 3.3 Capacities developed and supported to improve payment for watershed services initiatives that promote investments in ecosystem services and the equitable distribution of derived benefits.

Strategic Objective 4. Leadership and learning on sustainable water management and poverty alleviation promoted through targeted capacity development, outreach and network facilitation.

Outcome 4.1 A community of 'WANI-practice' empowered through the availability and use of effective communication products and outreach materials.

Outcome 4.2 A co-ordinated network of leaders and change managers act as catalyst to drive and consolidate change towards sustainable water management practices.

Outcome 4.3 WANI practices and experiences incorporated in social learning of targeted individuals and organisations using existing and emerging capacity development institutions and mechanisms.

Outcome 4.4 WANI-2 effectively co-ordinated and managed to ensure a continued trust and interest amongst and buy-in from colleagues, peers, members and partners.

Annex 2. Vision, Mission and Strategic Objectives of the IUCN Dryland Initiative.

Within the IUCN Drylands Strategy the following indicative vision, mission and strategic objectives have been developed:

IUCN's vision for drylands:

Drylands are valued, and sustainably managed, to support equitably the well-being of societies.

IUCN's mission for drylands:

To influence, encourage and assist societies throughout the world to conserve diverse drylands landscapes, promoting good governance, gender equality and respecting local knowledge to ensure that dryland ecosystems, their services and livelihoods are ecologically sustainable and resilient to change.

Strategic Objective 1 (Practice): Dryland biodiversity and ecosystem services are valued, restored and sustainably managed to improve human well-being.

Specific objectives

- 1.1 Knowledge on dryland ecosystem goods and services, their sustainable management and their importance to livelihoods, is generated and improved, and shared effectively among practitioners.
- 1.2 Capacity is enhanced among practitioners to apply tools and options for sustainable management of dryland ecosystems, including gender mainstreaming.
- 1.3 Gender and equity are better recognized and collaborative strategies are developed to empower disadvantaged groups and ensure that they specifically benefit from sustainable dryland management as well as to incorporate their knowledge through their effective participation.
- 1.4 Advocate for improved recognition of local people's rights and responsibilities for land, common property regimes, customary institutions and ecosystem goods and services and their integration into sustainable dryland management.
- 1.5 Market chains of dryland goods and services are well known and opportunities for financial incentives as trade-offs to support local livelihoods and shifts from unsustainable practices to sustainable uses/management are identified.

Strategic Objective 2 (Change): Vulnerability of drylands is reduced, and resilience of dryland ecosystems to change is strengthened.

Specific objectives (Change):

- 2.1 Improved understanding of the dynamics and resilience of dryland socio-ecosystems and internal and external drivers of change, and their impact on ecosystems and ecosystem services.
- 2.2 Capacity enhanced, solutions assessed and actions catalyzed to manage and adapt to change.
- 2.3 Adaptive capacity to shocks (political, environmental, socio-economic and cultural) in institutions and communities is enhanced.
- 2.4 Incentives advocated for equitable investment in sustainable land use and livelihood security.

Strategic Objective 3 (Policy): Policy and investment frameworks support equitable and sustainable drylands management for the benefit of biodiversity and people.

Specific Objectives (policy):

- 3.1 Natural resource management and development policies adopt an ecosystem approach to drylands management that recognizes the dependency of dryland communities on ecosystems and their services, with specific attention to capacity building and empowerment of both women and men of local communities to engage in and influence policy processes.
- 3.2 Accountable and responsive governance mechanisms are developed and agreed among all concerned stakeholders for decentralized dryland management.
- 3.3 The UN Convention to Combat Desertification (UNCCD) 10-Year Strategic Plan and framework
- 3.4 to enhance the implementation of the Convention (2008-2018) is implemented by the parties to the Convention and their partners, with the support of IUCN and guided by a new drylands paradigm.
- 3.5 Relevant multilateral and regional policies and frameworks for dialogue support equitable and sustainable drylands management, and facilitate conflict resolution and transboundary management of drylands for the well-being of dryland dwellers.
- 3.6 Private Sector policies, investment decisions, and related actions, recognize the range of values of drylands ecosystems and support equitable and sustainable dryland management for the well-being of dryland dwellers.

Annex 3. An IUCN Climate Resilience Initiative

On the basis of experience in different projects of the Water and Nature Initiative over the last five years an approach to water and climate change adaptation is proposed. The main goal of the IUCN Climate Resilience Initiative is:

Adaptation to climate change implemented while strengthening sustainable development and poverty reduction in areas of high climate vulnerability by using resilience-based strategies for integrated water, land and coastal management.

The preliminary objectives of the initiative are the following:

Objective 1: to promote climate-resilient development by demonstrating reduced vulnerability to climate change through best practice in water, land and coastal management;

Objective 2: to increase self organization of water and land management at local and basin levels by supporting governance reforms that enable participation in decision making;

Objective 3: to catalyze implementation of resilience-based reduction of climate risks by building leadership, access to information and learning networks among community practitioners, managers and policy makers;

Objective 4: to promote more resilient and diverse livelihoods and economic growth by supporting planning of infrastructure portfolios for climate risk reduction that incorporate investment in the natural infrastructure of ecosystems and river basins;

Objective 5: to build coherence among climate, development and economic policies by promoting integration of resilience-based policy frameworks for adaptation into poverty reduction strategies and national development plans.

This initiative has water at its centre, and is designed to help cope with long-term uncertainty and build social-ecological resilience in vulnerable « hot spots » such as, among others, drylands, oases, low-lying deltas & coastal mega-cities, small islands as well as mountain watersheds and their rivers.

The “IUCN Climate Resilience Initiative” – if brought into fruition - is very relevant to REWARD, the Mediterranean Mosaic Initiative, the Dryland Management Initiative and other similar initiatives within IUCN. It will add value to the work of IUCN, enhance lesson learning and experience sharing, promote cross-regional coordination and make sure that climate change is mainstreamed throughout the implementation of the IUCN programme. The initiative will also add value to the work of members and partners.

The Climate Resilience Initiative will be further elaborated for specific areas to include the following components to increase resilience of local communities and ecosystems:

1. Diversity & networks – of economy, livelihoods & networks
2. Robust ecosystem services – from natural river basin infrastructure
3. Self organisation – through participatory and local governance in adaptive institutions
4. Learning – from better information & capacity building

Annex 4. The Change Alliance

The Change Alliance is an emerging global network of organisations joining forces to increase the effectiveness of such processes. It aims to improve the quality of the process design, dialogue, learning, and facilitation, on which multi-stakeholder collaboration depends.

Over a five-year period, the Alliance will mount a number of **action inquiry initiatives**, through which it aims to deliver improved outcomes and enhanced impact in a diverse set of multi-stakeholder processes. Capacity development for the individuals and organisations that participate will be a significant part of this work. The Alliance will contribute to developing capacity more broadly by creating a global learning platform that will link the action inquiry initiatives to each other and make the learning widely accessible. Through the **global learning platform** and engagement of leaders in government, business and civil society, the Alliance aims to stimulate greater investment in and support to create the enabling conditions for more effective multi-stakeholder processes.

Practical Support

Members of the Change Alliance are committed to looking critically at their own successes and failures with multi-stakeholder processes. They also seek to gain access to a wider network of expertise and support by linking with other organizations to explore the challenges they face. The program of the Alliance aims to deliver practical support on both these fronts to those who participate and to others involved in multi-stakeholder processes. This support will be through two main mechanisms: action inquiry initiatives and the global learning platform.

The **Action Inquiry Initiatives** are new or established multi-stakeholder processes in which the Alliance partner organizations are involved. For example: improving food production and marketing systems in Ethiopia; overcoming youth violence in Central America; a multi-stakeholder approach to local service delivery around Lake Victoria in Eastern Africa; territorial development in south America; improving water Governance in the Mekong; or – why not – planning and decision-making for watershed development in West Asia. Through access to expertise and knowledge, financial support and a practitioner network, the Alliance can strengthen and improve such initiatives and enable them to be developed, implemented and reflected upon with a depth and quality otherwise not possible. The contribution from the Alliance may include:

- Linking those involved in the initiative with others who have relevant experience and expertise
- Providing access to a pool of experienced process experts and facilitators who could offer practical guidance and support on process design and facilitation and any emerging problems
- Assisting with capacity development and training support
- Assisting with setting up and supporting an ongoing process of reflection and learning within the initiative
- Access to web-based knowledge resources
- Access to a process management “help-desk”
- Linking the initiatives into a wider learning processes with the Alliance partners

The **Global Learning Platform** will provide both physical and virtual spaces that enable learning, innovation and sharing across Alliance partners and initiatives. It will also ensure that the work of the Alliance has reach and impact beyond the Alliance itself. The platform will enable practitioners, who would otherwise remain isolated, to come together with academic experts and experienced process leaders to: work on practical challenges; capture and share lessons; enhance capacities and establish a joint programme of research, learning and quality improvement. The Learning Platform will focus on adding value to the work of the individual members of the Alliance and share its lessons learned with a wide audience. It will provide research, learning, knowledge management and capacity development functions that only become feasible and cost effective when supporting a wide network of partners. Activities of the learning platform include:

- Learning and coaching workshops for members of the action inquiry initiatives
- Establishing and implementing collaborative research activities on challenges and constraints to effective multi-stakeholder engagement
- Providing web-based and interactive resource portals
- Hosting regional and global learning and innovation workshops
- Collaborative capacity development and training programmes with regional educational institutions
- Documenting, communication and promoting the work of the Alliance
- Working with political, government, civil society and business leaders on how to create the enabling conditions for effective multi-stakeholder processes and on how to apply complexity thinking to policymaking in international cooperation.

Outputs

Possible outputs of the work of the Alliance could be:

- Documentation of the unfolding of the change initiative that captures assumptions and thinking about context, strategy and results and records the changes that occur as the initiative unfolds.
- Written reports, video or websites that capture the learning and knowledge developed along the way.

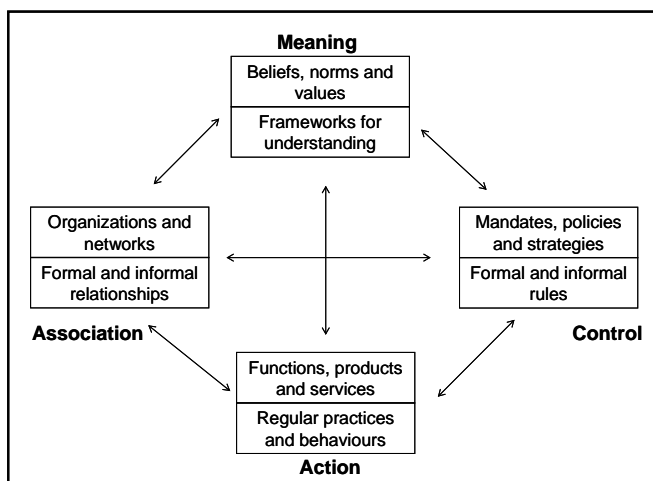
Outcomes

The outcomes of the work of the Alliance will contribute to:

- *Improved quality of practice and results* in action inquiry initiatives
- *Rethought theories of change* (incl. intervention logic) and management mechanisms to better align with inherent complexity and dynamics of development assistance
- *Enhanced understanding, capacities and leadership* for multi-stakeholder engagement, partnership development, dialogue and participatory governance to realise their potential
- *Knowledge creation* from systematically articulating and capturing the choices made and the results of those choices.

INSTITUTIONAL ANALYSIS

Figure 1. A framework for exploring the complexity of institutions



For pragmatic reasons it deliberately takes a broad perspective on what institutions are. This means including organizations and regular patterns of behaviour alongside the notion of institutions as 'rules'.

Formal and informal institutions are equally important, and often reinforce each other. Institutional analysis often focuses too much on formal rules, such as policies and laws. This framework shows the importance of asking questions about a wider set of factors that interact to shape the incentives for actors to behave in particular ways (Woodhill, 2009⁹).

WORKING GROUP RESULTS

The participants were asked to brainstorm on the existing institutions that influence the key issue(s) of the REWARD demonstration projects and use the institutional framework as presented above.

Below examples are given:

- Meaning (Beliefs norms and values - Framework for understanding)
 - The local community believes that there water enough is.
 - The government does not believe that the local community has enough capacity.
- Control (Mandates, polices and strategies - Formal and informal rules)
 - National water law
 - Traditional surface water laws
 - Heritage indigenous knowledge (customary laws)
 - New participatory water management approaches (replicable models)
- Association (Organizations and Networks - Formal and informal relationships)
 - Ministry of Agriculture
 - Local and national NGO's and CBO's
 - Municipality
 - Established partnerships
- Action (Functions, products and services - Regular practices and behaviors)
 - No public rainwater harvesting
 - Waste water disposed in area
 - Adopt new irrigation technology
 - Resistance to laws

⁹ Woodhill, 2009, Institutional Innovation and Stakeholder Engagement. Linking Transition Management in the North with Development in the Global South (article to be published)

Annex 5. Constraint analysis in setting-up regional networks¹⁰

The third day of the Strategic alignment workshop of REWARD in Sharm Al Shaikh (May 2009) consisted of a WESCANA Work meeting with organizations that are invited to become Knowledge Centres in the Regional Water Knowledge Network as well as other participants to the first two days of the REWARD Workshop: representatives of other parts of IUCN/WANI, IUCN/Pakistan, IUCN/Mediterranean Office, IUCN Drylands Initiative, as well as of GWP/MED and Wageningen University.

After a presentation of a vision and proposed “modi operandi” of the regional network a discussion took place on the general proposals for the RWKN. No major objections were noted, apart from the confusing use of Knowledge Nodes and Network Nodes. It was decided to restrict the use of terminology to the following: Knowledge Centers (centers of excellence) and Network Members (for the other members of the network).

The rest of the day was divided in two sessions:

- (i) a general analysis of constraints when setting-up regional networks and
- (ii) a reflection on and recommendations for scope, focus and mandate for the sub-networks to be started. A synthesis of the results of this session is provided in Annex 6.

For session (i) the participants were asked to work in groups and brainstorm on how – in general - a sustainable network could be developed, with particular consideration paid to limited funding potential. The four different working groups discussed the constraints and sustainability preconditions for such a network. The following summarizes and synthesizes the results of the four subgroups.

CONSTRAINTS

1) Finance

Finance was seen as a key constraint for developing a sustainable network. There could be a risk that the network becomes dependent on external funds or donor interests and priorities, which will impede sustainability. For this reason participants identified the importance of looking into the potential of internal funding. This could come from knowledge centres and/or through the support of members (for example membership fees).

2) Mandate – ToR – Objectives/Goals

Another constraint that was discussed during the group work was – often - the lack of focused priorities or clear goals and objectives. It is important that there is an added value for the members of the network. The network should produce tangible and interesting outcomes both by its members and for the members. For this reason it is important to formulate clear Terms of Reference. It is also important to make clear what will be the network’s mandate.

3) Institutional set-up

To create a sustainable network, a good institutional structure is needed. Will the network be formal or informal, open or closed (membership-wise), flexible or rigid? These issues have to be decided upon when developing the network. There should also be institutional coordination at all levels (organisational/national/regional) to facilitate the optimal operation of the network and to ensure its consequent institutionalisation.

¹⁰ Synthesis made by Karen Verhoosel (Wageningen University, The Netherlands), Anthi Brouma (GWP/MED, Athens) and Katharine Cross (WANI/IUCN HQ, Gland)

4) Roles and Responsibilities

Clarity on the roles and responsibilities was considered quite important. Absence of a common understanding about the network could become a serious constraint. Each member organisation should establish a focal point to facilitate networking between members. To maintain the motivation of the members it is also important that the network organizes shared activities.

5) Capacity

It was considered important to build the capacity of the members of the network on process documentation, facilitation, institutional change processes and how to use management information systems (MIS). The lack of innovation, know-how and a real understanding of the problem were also considered as possible constraints for a sustainable network. Limited human resources capacity within the knowledge centres and support partners, as well as a weakness in leadership were also mentioned as potential constraints. In addition, it is important that the network is institutionalized among partner organisations so that it is not simply a collection of individuals but there is capacity and knowledge throughout the organisation to participate in the network.

6) Motivation –Commitment

The lack of motivation, active participation and commitment (related to the problem of staff continuity) were discussed during the group work as possible constraints for a sustainable network. Network members may not send the person with the appropriate technical skills and knowledge to a meeting. Consequently, this person may not be in the best position to make decisions and commitments which can impact the sustainability of the network. It was considered important to think of criteria for membership to encourage active participation and commitment.

7) Communication

The lack of or weak communication was also discussed in two groups as a constraint for developing a network. It is important to build on monitoring and reflecting processes and to communicate the lessons learnt to the members.

8) Politics

Two groups discussed politics as a constraint. One group focused more on internal politics, like conflicts of interests or differences in perception between the different members. The other group discussed the difference in political priorities that could influence the development of a network. Another area to consider is donors' interests and priorities. Partnerships can occur because of requests from a donor rather than finding the best partner organisations to meet the networks objectives.

SUSTAINABILITY

1) ToR – Mandate - Focus

To develop a sustainable network it is necessary to have a clear focus and mandate. This requires that the network formulates its theory of change (vision), develops a focused strategy (set clear and SMART objectives and goals (SMART = Specific, Measurable, Attainable, Relevant and Time Bound method), develops a focused action plan and puts into place a reflection and monitoring system. To formulate a clear Terms of Reference is also critical.

2) Funding

Another important issue to assure a sustainable network is to define a clear strategy for funding. External as well as internal funding needs to be sought in order to develop effective focal points,

effective communication through regular meetings, face-to-face interaction, etc. External funding could be used as seed funding to establish the network (from REWARD for example). When looking for internal funding, the network could think of a cost-sharing strategy and membership fees. Although self-funding has limited potential, it could be used to cover own costs for involvement and attending meetings. To keep the costs of the network low, people could think of alternative communication/dissemination tools (e-mails, website, teleconferences, skype-conferences) or try to combine network meetings with wider meetings and/or water events.

3) Communication

Communication is also considered important for developing a sustainable network. In that respect, an effective communication system needs to be developed as well as a clear communication strategy (internal and external), including a mechanism for information exchange. Funding is not necessarily the main issue to facilitate communication, it is also important that time is budgeted for effective communication among network members.

4) Capacity Building

As mentioned in the constraints' section, the groups considered the capacity building of the members particularly important for creating a sustainable network. There should be investment in the capacity of the focal points within the different organizations. At the same time, institutionalization of the network will ensure that the capacity and knowledge derived from the network reaches further than the focal points and into partner organisations.

5) Roles – Responsibilities

To let the network function optimally it is important to have a facilitation body that makes sure members have a common understanding and interest. For this, clear criteria for membership need to be set based on the added value and level of commitment /dedication of the different members. It is also important to establish effective focal points for each member. With regard to the focal points, the network should formulate Terms of Reference that clearly specify roles and responsibilities. The institutional and individual commitment of the members should be also looked into. It is important to explore the existence of other networks with the same mandate in order to avoid overlapping and duplication of efforts.

CONCLUSION

The most important preconditions for developing a sustainable network that came out of the discussions in the work groups were;

- Assure enough funding (internal as well as external);
- Set a clear mandate, focus, goals, objectives;
- Formulate a clear terms of reference for all the members about their roles and responsibilities;
- Assure a good institutional set-up, with effective focal points in the organizations;
- Build capacity of the different member organizations and their focal points;
- Ensure members are motivated and committed and see the added value of the network for them and for the system;
- Put in place an effective communication system.

Annex 6. Terms of Reference for Regional Water Knowledge Sub-Networks

Terms of Reference Regional Water Knowledge Sub-Networks REWARD Programme

Introduction:

The WESCANA/REWARD Regional Water Knowledge Network is a network of networks, existing at different levels (global, regional, national and watershed) and created with the aim of bringing together a range of institutions interested in the creation of new knowledge in an area of common interest. The members involved should have complementary capabilities which, when combined, will allow new knowledge created to be brought to scale. Some of the key capabilities required are in: implementation, regulation, policy and legislation, research and learning, and documentation and dissemination.

The RWKN is initially being established in the MENA region by the DGCS funded WESCANA Project that forms the core of the REWARD Programme of IUCN ROWA in order to foster capacity building, shared learning, networking and exchange of experience between the major actors in the water sector of the region. The Regional Water Knowledge Network (RWKN), further supported by the IUCN Water and Nature Initiative (WANI), will enrich and strengthen the experience gained in specific demonstration projects in selected countries. These demonstration projects will act as testing ground for above systemic approaches and as a pragmatic learning platform for partners and members to serve the long-term objective of making more sustainable use of scarce water resources. Through the WESCANA project, DGCS has thus far (2009) been the main financial partner in the RWKN.

The RWKN are structured in three sub-networks around the following water resource systems:

- Management of water resources in mountain watersheds.
- Management of oases and the related ground water resources.
- Restoration and management of water resources in large river systems (with an emphasis on irrigation/drainage management and/or urban water-scarce environments)

Mandate and Focus

The Regional Water Knowledge Network (RWKN) is an organized interaction between institutions who have a common interest and who are looking to increase the effectiveness of their work. The aim of the RWKN is to foster capacity building, shared learning, networking and exchange of experience between the major actors in the water sector of the region to promote systemic approaches to integrated water and dryland resource management. It will do this through the following approach:

- Developing and promoting systemic approaches to water resource and dryland at a watershed/river basin level.
- Mutual learning and networking to support each other with each others' specific knowledge and excellence;
- Encouraging South-South cooperation between institutions in the region and connecting RKWN nodes with other global and regional water initiatives and institutions.

- Documenting what is learned and capitalizing on know-how in existing institutions in the region.
- Organizing around specific water resource systems relevant for the region with demonstration projects as learning ground.
- Joint development of new ideas, activities and projects
- Embarking on multi-stakeholder processes at different levels (watershed, national, regional).

To be of value, these sub-networks must improve the effectiveness of all the members participating in it and will contribute to:

- Encouraging mentoring relationships between the more established member organizations and the less experienced ones.
- Avoiding duplication of efforts by sharing knowledge.
- Ensuring efforts that complement each other.
- Enhancing opportunities for collaboration in projects.
- Allowing understanding of common issues.
- Increasing possibilities for mutual learning experiences.
- Improving access to knowledge.
- Benefiting from common fund raising and use of resources.
- Increasing the effectiveness of lobbying and advocacy.
- Mobilizing additional staff and financial resources, and making better use of existing resources.

Scope of work:

- Developing capacity building in the region on systemic planning and decision-making approaches in the water sector;
- Investing in on-the-ground demonstration projects to develop and test improved tools and systemic approaches to planning in a hands-on learning process. In addition, it will build capacity, ownership and commitment at community and local government level, and bring the viewpoints of all those involved towards a shared vision and a common understanding of IWRM. This will exemplify the rational and effectiveness of such systemic approaches.
- Increasing the influence of different actors on the systemic approaches for the use and management of scarce water resources. This will ensure that planning and decision-making for IWRM will be better informed by local realities, leading to policy frameworks that support decision-making at lower levels.
- Enhancing information flow and effective communication between members in the RWKN. Information flows, in all directions, are critical to ensuring that ownership of (and responsibility for working with) the findings of pilot activities are assumed by all.
- Creating an environment in which it is possible to be honest and open about lessons learned – particularly failures.
- Documenting the learning process and sharing information and knowledge at different levels. Documents and supportive documentation outputs describe the manner in which RWKN/REWARD has approached the issues at stake in the demonstration projects, including lessons learned, bottlenecks, pitfalls, and how these have been resolved.

Governance Structure:

There are different categories for the membership in these sub-networks as the following:

- **Network Knowledge Centres:** institutions with demonstrated experience in one or more key themes considered important for the Network as a whole. The Knowledge Centre will facilitate the sub-network process and provide it with technical/conceptual knowledge.
- **Network Members:** working on integrated water resource and dryland management and involved in different ways in the network - as partners and stakeholders in the national networks in demonstration countries or as institutions in other countries working on the same water resource systems - and participating as member in one or more of the thematic sub-networks organized around water resource systems.
- **Network Support Members:** Regional institutions that by their mandate and interest could give support to the networking and capacity building activities of the RWKN and its members.

The formation of core groups of committed and active institutional members will be used to promote effectiveness in the early stages of these sub-networks, for sustainable scaling-up at a later stage.

Facilitation Body

The REWARD Programme of IUCN ROWA will serve as a secretariat for managing and facilitating support to the RWKN Sub-Networks, so as to enable a shared learning process in which barriers to horizontal and vertical information sharing can be broken down.

Eight institutions selected to be Knowledge Centres together with 35 other institutions form the actual (mid 2009) network group. From this overall network group, members are invited and encouraged to take part in national networks (at this moment four national networks are established in Egypt, Jordan, Palestine and Yemen as detailed in Annex 7) and one or more regional sub-networks as mentioned at the start of this Annex. These eight selected Knowledge Centres are:

- Palestine Hydrology Group (PHG) – Water information systems/data base, drink water supply and sanitation and systemic IWRM approaches
- Badia Research and Development Centre (BDRC)/Jordan – Ecosystem research, water modelling and community development.
- Water and Environment Centre (WEC) of Sana'a University/Yemen – Watershed Management (Msc course in Water Resource Management)
- Centre for Environment and Development for the Arab Region and Europe (CEDARE)/Egypt – Integrated Water Resource Management, Decision Support Tools.
- Union of Agricultural Work Committees (UAWC) in Palestine – Water for irrigation/agricultural technology.
- Coptic Evangelic Organisation for Social Services (CEOSS) in Egypt – community and rural development, awareness raising, poverty alleviation.
- Arab Women Organization (AWO) in Jordan – gender analysis and relationships, community development
- IUCN ROWA/REWARD – Systemic approaches to IWRM, participatory planning, facilitation of multi-stakeholder platforms, ecosystem services and environmental flows

Membership

The membership will be open for all interested institutions (GOs, NGOs, INGOs, universities and research centers, donors and private sector). The selection of new members will be done by a committee of 3-4 members representing REWARD/IUCN ROWA, the Knowledge Centres for the sub-network, and one of the Network Support Members.

Selection criteria:

- Reputation/credibility of the potential member.
- Professional or strategic contributions a member can make to a sub-network. Ex. Information and knowledge, funding, policy access
- Capacity (staff time/knowledge and funding) to participate in the network.
- Track record in the thematic area of the sub-network.
- Proposed duration of involvement in the thematic area of the sub-network.

Communications:

The Knowledge Centres and REWARD/IUCN ROWA will facilitate the interaction between the different members involved in and between sub-networks. Examples for the communication tools and rules might be the following:

- Every member should have an equal chance to give his/her opinion.
- Emails should be answered within 48 hours.
- Encourage crisp and informative communication.
- Tele-conferencing equipment is suggested to be installed at IUCN-ROWA and made available for network communication.
- Tele-communication is important to reduce cost but face-to-face communication remains important.
- Foster a culture of giving and receiving.

Annex 7. National Networks established within the wider WESCANA/REWARD Regional Water Knowledge Network (RWKN)

Jordan	Palestine
<ul style="list-style-type: none"> - Ministry of Environment (M) - Ministry of Water and Irrigation - Ministry of Agriculture - Ministry of Interior in Zarqa Governorate - Royal Society for Conservation of Nature (RSCN) (M) - Ministry of Planning - GTZ - Arab Women Organization (M) - Badia Development & Research Centre (M) - (A) IUCN ROWA 	<ul style="list-style-type: none"> - Palestinian Water Authority (PWA) (cM) - Environment Quality Authority (cM) - Ministry of Agriculture - Ministry of Local Government - Palestine Hydrology Group (PHG) (cM) - IUCN Palestine - Ministry of Interior in Jenin Gov. - Union of Agricultural Work Committees (UAWC) (cM) - Bir Zeit University
Egypt	Yemen
<ul style="list-style-type: none"> - Ministry of Water Resources and Irrigation - Ministry of Agriculture - CARE International in Egypt - Ministry of Interior in Bani Seif and Minia Governorates - Coptic Evangelic Organization for Social Services (CEOSS) - Cairo University - National Water Research Centre (Gov.) - Centre for Environment and Development for the Arab Region and Europe (CEDARE) (M) 	<ul style="list-style-type: none"> - Ministry of Water and Environment (cM) - Ministry of Agriculture - GTZ - Social Fund for Development (SFD) - Water and Environment Centre of Sana'a University (WEC) (cM) - Ministry of Interior in Dhamar Governorate. - Ministry of Planning - Gender and Development Research Center
<ul style="list-style-type: none"> - In bold face the partners/Knowledge Centers facilitating the national networks between the different stakeholders. - (M) Member of IUCN (cM = candidate IUCN Member) 	

**Annex 8. Participants list REWARD/WESCANA Workshop
Sharm Al Shaikh, May 15-18th 2009**

No	Country	First name, name	Institution
1	Egypt	Fakhouri Nader	CEOSS
2	Egypt	Amr Abd AlMajeed	CEDARE
3	Egypt	Jalal Moawad	CARE -Egypt
4	Yemen	Merna Nasser	Water & Environment Centre (WEC)
5	Yemen	Najib Al Ghulaibi	WEC
6	Yemen	Nadya Al Sulimani	WEC
7	Yemen	Naif Abu Lohom	WEC
8	Palestine	Aymen Rabi	Palestinian Hydrology group (PHG)
9	Palestine	Taha Al Rifai	Union of Agricultural Work Committee (UAWC)
10	Palestine	Iman Taher	UAWC
11	Palestine	Sayel Weshahi	PHG
12	Palestine	Sameera Refai	IUCN - ROWA - REWARD Palestine
13	Palestine	Buthaina Mezayed	IUCN - ROWA - REWARD Palestine
14	Lebanon	Bassima Khatib	Society for the Protection of Nature in Lebanon (SPNL)
15	Lebanon	Clément Nadim Zakhia	MADA Communities and Environment
16	Switzerland	Mark Smith	IUCN - WANI
17	Switzerland	Katharine Cross	IUCN - WANI
18	Nairobi	Caterina Wolfangel	IUCN Drylands
19	Thailand	Ganesh Pangare	IUCN – Asia
20	Syria	Sameh Saqer	The Arab Centre for the Studies of Arid Zones and Drylands (ACSAD)
21	Greece	Anthi Brouma	GWP – Med
22	Spain	Rami Salman	IUCN – Med
23	Netherlands	Kar'en Verhoosel	Wageningen University
24	Jordan	Rima Ras	Badia Development and Research Centre (BDRC)
25	Jordan	Odeh Mashan	BDRC
26	Jordan	Amer Al Me'adat	Arab Women Organization (AWO)
27	Jordan	Peter Laban	IUCN - ROWA - REWARD RPC
28	Jordan	Fadi Shraideh	IUCN - ROWA - WESCANA PM / REWARD Deputy Coordinator
29	Jordan	Mufleh Abbadi	IUCN - ROWA - REWARD/Zarqa
30	Jordan	Fidaa Haddad	IUCN - ROWA - REWARD/Azraq
31	Jordan	Ola Mallah	IUCN - ROWA - WESCANA staff
32	Jordan	Saleh Azzam	IUCN - ROWA - WESCANA staff
33	Jordan	Luma Al Kurdi	IUCN - ROWA - WESCANA Admin Officer

Annex 9. Programme Sharm Al Shaikh Workshop



REWARD Strategic meeting 15 - 18 May, 2009 Sharm El Sheikh – Egypt

Workshop Results

1. Strategy Paper for IUCN ROWA Program on Water Resources, Drylands, Climate Change and Livelihood Security (REWARD) – Brochure and detailed strategy paper.
2. Proposals for IUCN participation in Change Alliance
3. ToRs for WESCANA Water Resource System sub- networks (the heart of REWARD)
4. Exploring concrete collaboration opportunities with other IUCN Programs.

Agenda

DAY 1 Friday, May 15, 2009		
16:00 – 16:20	REGISTRATION	
16:20 – 16:30	Welcome remarks	Peter Laban
16:30 – 17:00	Introduction of Participants and Workshop program	Fadi Shraideh
17:00 – 18:00	Introduction on focus and scope of the REWARD program and discussion	Peter Laban

REWARD Strategic meeting