The Arab Strategy for Water Security in the Arab Region- Meeting the Future Challenges and Needs of Sustainable Development

(2010 - 2030)

The Action Plan

July 2014

Preface

Based on the reality of the Arab water resources that suffer from several difficulties at more than one level, either from its scarcity in the first place, or due to the fact that most of the Arab lands are located within arid or semi-arid areas; consequently, the wasted rainfalls, high evaporation rates, high vulnerability of the emergent climatic changes, and in the second place, as related to the acceleration of increased demand to fulfill the needs of the aspirant developmental plans of the Arab governments in different sectors, especially in the agricultural sector, which possesses high rates of the total available water resources, which sometimes are more than 90%; and in the third place as related to management, due to the limitedness of its success in tackling lots of the problems related to water, especially the high rate of waste, pollution, drought, desertification, and expansion of the food gap, and in the fourth place, as related to the fact that more than 60% of the Arab water comes from neighboring countries, and part of it is located under the control of the Israeli occupation.

As the Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) represents one of the most important joint Arab Work Centers, and since its establishment until now, it has been accomplishing a lot of the executive, and scientific technical research development and upgrading studies of common Arab character, it has always been working on helping the Arab countries in the efforts that exert to achieve the Arab water security, which guarantees its food security and protects their rights of shared water resources wherever they exist.

In order to support this orientation, the Arab Center (ACSAD), after being commissioned by the Arab Ministerial Water Council of the Arab League to elaborate a strategy for the Arab water security adopted by the Arab Summit, its thirty-second session held in Baghdad - Republic of Iraq in 2012, under the title "**The Arab Strategy for Water Security in the Arab Region-Meeting the Future Challenges and Needs of Sustainable Development (2010 - 2030)".**

In the same year the Arab Ministerial Water Council was commissioned to elaborate the operational plan for implementing the Arab water security strategy. In its turn, the Council appointed the Arab Center (ACSAD) with the task of preparing the action plan, and coordinating with the work-group formed in addition to it from specialized Arab and regional institutions.

Accordingly, the Arab Center organized several meetings of the Commission, which resulted in agreement on the basic structural executive plan of the Arab water security strategy, and distributed the tasks on the members. The first draft of the plan in its final form was completed in September 2013.

The Action Plan represents a practical framework for the accomplishment of the Arab water security strategy. Its goal is to work on serving a common Arab vision for applying the strategy in order to overcome the challenges and difficulties faced by the water resources in the Arab states on the one hand, and on the other hand, to create opportunities to overcome these challenges and difficulties and to provide the ability to achieve comprehensive and sustainable development in these countries. The evaluation of the implementation of these activities stipulated in the executive plan shall be performed on stages, and the results of the evaluation will be used to update the plan every five years.

The Arab Center (ACSAD), through its contribution in elaborating the Arab Strategy for water security in the "**The Arab Strategy for Water Security in the Arab Region-Meeting the Future Challenges and Needs of Sustainable Development (2010 - 2030)",** and through participation in the preparation of its Action Plan, and following up and coordinating the efforts of the work-group charged to accomplish it, stressed on its success in assuming the responsibilities entrusted to it, as a house of Arabic expertise enjoying competency and the ability to touch and describe the reasons of the water problem in the Arab region, and identifying and selecting the effective methods and means to overcome them, in order to develop the Arab societies to promote themselves to advanced cultural positions that would provide to their children a decent livelihood, safe and stable life conditions.

While The Arab Center (ACSAD) hopes that the Action Plan and its proposed activities will gain the appropriate attention and support as related to suitable adoption and commitment in the application, due to the significant positive results of them, which will undoubtedly contribute in providing a rational management of the Arab water resources, and maximize the desired benefit of their development, its presents to the team that prepared the plan its sincere thanks for the appreciated efforts they exerted to accomplish the mission which was assigned to it.

Allah grants success!

Dr. Rafiq Ali Saleh

Director - General

Arab Center for the Studies of Arid Zones and Dry Lands (**ACSAD**)

Partners of the preparation of the Action Plan of *The Arab Strategy for Water Security in the Arab Region (ASWS) to meet the future challenges and needs of sustainable development (2010-2030):*

1. Technical Secretariat of the Arab Ministerial Water Council (**AMWC**)
2. The Arab Center for the Studies of Arid Zones and Dry Lands (**ACSAD**)
3. Arab Water Council (**AWC**)
4. Center for Water Studies and Arab Water Security (**CWSAWS**)
5. United Nations Economic and Social Commission for Western Asia (**ESCWA**)
6. The Center for Environment and Development for the Arab Region and Europe (**CEDARE**)
7. United Nations Food and Agriculture Organization - Regional Office for the Middle East (**FAO/RNE**)
8. United Nations Environment Programme - Regional Office for West Asia (**UNEP/ROWA**)
9. International Center for Biosaline Agriculture (**ICBA**)
10. German Agency for International Cooperation (**GIZ**)
11. Ministry of Water Resources in the Republic of Iraq (**IR, MOWR**)

On the basis of the decree No. 53 issued in the fourth session of the Arab Ministerial Water Council held in Baghdad 20/05/2012 related to follow-up assignments of the Arab Economic and Social Summit held in Sharm Al Sheikh 19 January 2011, The Arab Center for the Studies of Arid Zones and Dry lands (ACSAD) worked closely with the Technical Secretariat of the Arab Ministerial Water Council to develop, review and finalize the Action Plan in cooperation with another partners.

The Arab Center for the Studies of Arid Zones and Dry lands (ACSAD) will follow up the implementation of the Action Plan of the ASWS in cooperation with all partners of the Arab Ministerial Water Council (AMWC) and financing institutions. It will also submit a periodic report about this to the AMWC in coordination with the group of the Action Plan preparation.

Work team of preparation of the ASWS - AP:

1. Technical Secretariat of the Arab Ministerial Water Council (Jamal Jaballah)
2. The Arab Center for the Studies of Arid Zones and Dry Lands (Wael Seif – Youssef Marai)
3. Arab Water Council (Hussein Ihssan Elatfy)
4. Center for Water Studies and Arab Water Security (Chahra Ksia)
5. United Nations Economic and Social Commission for Western Asia (Carol Chouchani Cherfane - Tarek Sadek - Mohamed Ibrahim Al-Hamdi)
6. The Center for Environment and Development for the Arab Region and Europe (Khaled Abou Zeid)
7. United Nations Food and Agriculture Organization - Regional Office for the Middle East (Faycel Chenini)
8. United Nations Environment Programme - Regional Office for West Asia (Fouad Abou Samra)
9. International Center for Biosaline Agriculture (Khalil Ahmed Ammar)
10. German Agency for International Cooperation (Guy Jobbins – Anthony Turton - Abdullah Droubi)
11. Ministry of Water Resources in the Republic of Iraq (Entisar Mohammad Ali - Mohammad Ibrahim Abdull Razzak)

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Introduction

The Arabian Area is characterized by the fact that it is a territory of exceptional importance at the level of the whole world, either from the aspect of its geographical location, which represents the main junction node between the continents of Asia, Europe and Africa, or from the fact that it includes the largest reserves of oil and gas that form the basis of growth of the modern international economics, but at the same time, it suffers from severe scarcity in water, which is rarely to find its peer in other spots on the surface of the earth. The effect of this scarcity has been reflected on the growth of the size of water deficit, against the accelerated increase on demand water in most of the Arab States, which slowed the process of sustainable development, contributed in the recession of the agricultural sector, increased in the food gap, expand the spot of deserted territories, besides to the increase of poverty, and aggravation of immigration from suburbs to the cities.

Whether this scarcity was due to natural reasons, such as the waning of the rainfall rates in general, or due to other reasons, such as rapid demographic growth, acceleration of the tempo of development, the policies adopted in water management, reduction in the level of awareness about the water and environment issues, traditional usages, economic outputs, emergent climatic changes, flux of more than 60% of the Arab water outside the boarders, and part of them is located under the control of the Israeli occupation, its severity increases year after year, to the extent that water became a national wealth that must be defended. In addition to that obtaining the rights due from it in the shared international basins developed to be part of the higher interests of the countries of the region.

Most of the territories of the Arab States are located in dry and semi-dry climatic zones that are characterized by low rainfall rates, with paramount distribution, fluctuation of their quantities and intensity from year to you, high rise of temperature, expansion of the daily and annual thermal range, prevalence of the winds of continental origin more than that of the sea origin, and repetition of the long and short dryness cycles.

These characteristics played an important role in the emergence of fragile environmental systems in the region characterized by weakness of the plant cover, prevalence of soils that are easily drafted by wind and water, scarcity of water resources, high rate of rain loss by evaporation

around the year, which reduces the volume of getting use of water in spite of its scarcity, and affects negatively in the volumes of natural annual feeding of the groundwater aquifers.

The area of the Arab World represents about 10% of the area of the earth, and about 5% of the populations of the world lives in it, but the rate of the water resources available for usage in it does not exceed 1.0% from the total international resources. Big part of it comes from outside the Arab territories. It is worth noting here that the Arab World includes seven countries out of the ten countries that get the smallest annual water proportion per individual in the world. Furthermore, by 2025, all the Arab States will be under the water poverty line. The Arab agricultural lands form about 8-10% from the area of the Arab World, of which 32% only are irrigated. The irrigated lands contribute in more than 50% of the total agricultural production that most of the national economies in the Arab States depends on. However, the agricultural soil suffers from continual deterioration due to salinity, repetition of dryness waves, pollution and the already existed climatic change.

Setting off from realizing the importance of water in the Arab region, as a basic basis to achieve comprehensive development, the Economic and Social Arab Summit held in Kuwait, in the year 2009, issued the resolution no. 8 D.A. (1)- part4- 20.01.2009, including charging the Arab Ministerial Water Council to elaborate as strategy for the Arab Water Security to assist in facing the challenges and the current and future requirements of sustainable development. In its turn, the Ministerial Council charged the Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) to prepare a suggestion for this strategy. Accordingly, the Arab Center prepared this suggestion in its final form by the assistance of a committee of experts under the title: **"The Arab Strategy for Water Security in the Arab Region- Meeting the Future Challenges and Needs of Sustainable Development 2010-2030".** After accomplishing the final formulation of the strategy, the executive office, according to its resolution no. (Q 34- 51 MTM- 18.01.202) constituted a committee that first consisted of the technical secretariat of the Arab Ministerial Water Council, the Arab Center (ACSAD), Center for Water Studies and Arab Water Security, Arab Water Council, Republic of Iraq, The Center for Environment and Development for the Arab Region and Europe, The United Nations Economic and Social Commission for Western Asia, United Nations Environment Programme - Regional Office for West Asia, The German Agency for International Cooperation. Later, each of the Food and Agriculture Organization (FAO) UN- Regional Office of the Middle East, International Center for Biosaline Agriculture

annexed to. Its mission is to elaborate the draft of the executive plan for continuing the accomplishment of the water security strategy in the Arab Region, along with taking into consideration the integrated management projects of the water resources credited by the Ministerial Council, provided that the Arab Center ACSAD will take over the mission of follow up and coordination among the members of this committee.

In this frame, the Arab Center organized several meetings for the committee; as a result of which there has been agreement on the main structure of the executive plan of the Arab Strategy for Water Security in the Arab Region Meeting the challenges and the future requirements of sustainable development (2010-2030) and distributing the tasks on the members. After the Arab Center and the committee finished preparing the first draft of the plan in September, 2013, the Arab Center sent it through the Secretariat General of the Arab League to the Arab States, after revising it and updating its formulation to show its notes. Then, it prepared the final version thereof, after including all the notes and recommendations received from the Arab States and submitted it to the Arab Ministerial Water Council in its sixth session in May 2014, which was held in Doha, where it was agreed to refer it to the Arab Summit.

The Strategy of Arab Water Security represents a guidance document of future vision. It was elaborated to achieve a set of goals that are related to the sustainability and protection of the water resources in the sectors connected with them at the local and national levels within twenty years. This strategy in its credited formula is in harmony with the water strategies circulated regionally according to the circumstance prevalent locally, for the purpose of achieving Arabic Integration based on the principle of relative distinction among the Arab States as related to the matter of natural resources availability, and the financial and human capabilities to face the challenges and the future requirements of sustainable development in the Arab Region.

The Action Plan represents a practical document based on accomplishing the strategy by suggesting several projects that can be implemented according to certain priorities that take into consideration the creation of suitable circumstances for sustainable Arabic, economic and social development in the short and medium terms, in such a way the implemented project are revised and evaluated each five years to correct and improve the accomplished work.

The success of the Action Plan in achieving what the Arab Strategy for Water Security aims at, no doubt requires complete conviction from the Arab States at different levels, and from the Arab Ministerial Water Council in the importance and necessity of Arab joint work to achieve

the water security in the Arab Region, due to the certain interest of these countries , which will surely motivate all the ministries and entities concerned in the water sector in the Arab States to achieve constructive cooperation and coordination to provide the necessary support to implement all the tasks, and activities that are stipulated in the plan.

I. Background and Rationale:

The Arab Strategy for Water Security in the Arab Region (ASWS) to meet the future challenges and needs of sustainable development (2010-2030) forms an Arab approach aiming to achieve a sustainable and comprehensive development. It is a long-term programme and practical mechanism for overcoming future challenges in water resources development and management in the Arab States.

This strategy was prepared on the basis of the decree No. 8 issued by the Economic and Social Arab Summit held in Kuwait 20/01/2009, that asked the Arab Ministerial Water Council (ASWS) to develop a strategy for water security in the Arab States. The AMWC worked closely with the Arab Center for Studies of Arid Zones and Dry Lands - ACSAD and developed the strategy that was approved by the Arab summit held in Bagdad- Iraq in 29/03/2012.

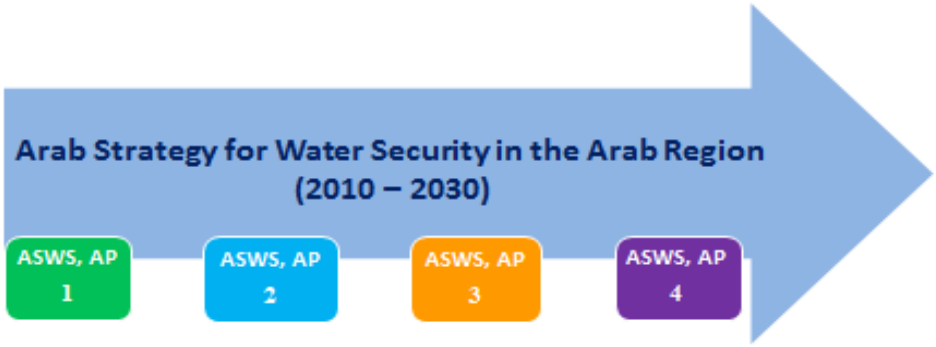
The ASWS establishes a set of key objectives grouped under three headings:

a. The economic and developmental field related to the provision of water services for drinking, agriculture and sanitation, including financing and investment, technology transfer, the application of the principles of integrated management of water resources, and the development of non-conventional water resources.

b. The field of institutional, human and technical capacity development, as well as the promotion of social and individual awareness of regional water issues, including scientific research, promote civil society participation in decision-making with environmental impacts, and other measures.

c. The political field, especially in relation to the protection of Arab rights in cases of water under occupation or waters shared with neighbouring countries, promoting cooperation among Arab states for the management of shared water resources, and the implementation of the commitments of the Arab States under the Millennium Development Goals.

The ASWS is not a rigid structure, rather a guide for a joint Arab action to ensure sustainable use of water resources in the Arab states and pave the way of necessary actions from now until 2030.



The Action Plan of the ASWS:

In January 2012, the AMWC was mandated to prepare an action plan to implement the ASWS as a practical guide for implementing it. This plan is meant to be reviewed every five

years in accordance with strict progress indicators that can be measured and monitored, and in the light of which the strategy will be reviewed.

The Action Plan is a guide that establishes a series of activities required in order to the ASWS to be successful. The Action Plan's purpose is to concretise the strategy vision, and to serve as a road map towards realising that vision.

To assure effectiveness, the Action Plan is formulated to:

- contribute logically to the guiding strategy
- cover comprehensively all the actions required
- provide clarity, making responsibilities and targets unambiguous
- be realistic and achievable in the given timeframe and with available human and financial resources

The Action Plan focusses on implementing sixteen essential activities branched to forty nine secondary activities during the coming five years. The essential and branch activities were directly derived according to the components of the ASWS (the 5th and the 9th sections).

Each activity in the Action Plan is described in term of key specific elements:

- Actions – what will be done?
- Institutional arrangements – who will do them?
- Targets – when outputs will be delivered?
- Resources – what human and financial are needed or available to do them?
- Communication – who needs to be informed about what?
- Obstacles – factors that may jeopardise the activity, and how to mitigate them?

Key principles of the developed Action Plan, they are:

1. Alignment with other Arab strategies

2. Public consultation and participation Partnerships
3. Partnerships

II. Objective

A- Review objective of the ASWS: Depending on the joint Arab cooperation, the main objective of the ASWS is to achieve water security in the Arab region to face the challenges, and future requirements of sustainable development in the Arab States during twenty years starts from the date of approval of the Action Plan of the ASWS.

B- Objective of the Action Plan: The Action Plan was developed to achieve the goals of the ASWS in order to secure social justice, economic sufficient and environmental sustainability in context of effective Arab integration, working to provide a solid enabling environment and administrative and institutional means to contribute in the strategic planning of water resources by applying IWRM principals at the national and regional level.

III. Action Plan – Axes for Action (Policies, Programs, Projects)

A. Developing Updatable Information on the Status of the Available Water Resources in Arab States

Relates to Theme 1 "Review regional studies on the status of water resources in the Arab region and building an integrated Arab water information system" of the Arab Water Security Strategy

The ASWS stresses the critical importance of information for sound planning and development of appropriate policies for managing water resources. Advances in information and communication technologies have facilitated the collection, storage, processing and sharing of data and information, offering new opportunities for regional approaches to water resource management. Linking water information and decision-support systems at the national level to a regional Arab water information system will support all other activities at the regional scale.

Main activity A.1. Building a Digital Water Database to follow Water Resources Development and Establishing an Integrated Arab Water Resources Information System

Branch activity A.1.1. Review Regional Studies on the Status of Water Resources in the Arab States

To frame policy dialogue, a series of reports will be produced evaluating water resource challenges at the regional level. Reports will focus on priority areas of the ASWS, such as

needs for improved sanitation, the status of integrated water resources management, and vulnerabilities to climate change, with priorities established by the AMWC. Reports will be developed from literature reviews of reports and publications at national and regional levels and regional consultations, and be subject to peer-review by regional experts and scholars. Reports will establish the state of knowledge, identify key opportunities and challenges for the region, and identify potential policy responses.

Outputs

- Literature reviews of reports and publications at national and regional level will be peer-reviewed by regional experts and scholars.

Targets

- Prepare a detailed report on the state of water resources in the Arab region.
- Reports informing decision-makers of AMWC after a year and a half of the approval of the Action Plan, and providing the necessary funding.

Implementation Principles

- Key opportunities, challenges, and policy responses will be identified through consultation workshops with regional experts and stakeholders.
- Reports will be peer-reviewed by national stakeholders, civil society representatives and scholarly experts.

Implementation Modality

- Teams from appropriate regional and international institutions will be commissioned to prepare each report.

Institutional Arrangements

ACSAD will take lead responsibility for this activity, identifying priorities with the AMWC, commissioning teams to prepare reports and hold consultation workshops. CEDARE will organize peer-review and dissemination of products.

Budget

The projected budget for this activity is US$ 500,000 for 5 years (US$ 100,000 for each year).

Communication Needs

- Agreement on priority areas for reports with AMWC
- Recruitment of teams and commissioning of reports
- Holding consultation workshops for each report
- Management of peer-review process
- Editing, layout and digital and hardcopy printing of reports
- Dissemination of digital and hardcopy reports

Obstacles

- Effective prioritization will be ensured by consultation with AMWC with reference to national strategies

- Consultation workshops with high quality facilitation will support more inclusive and grounded identification of needs and opportunities
- Quality of analysis will be ensured by retaining high-quality teams and the peer-review process.

Progress Markers

✓ Securing the necessary funding
✓ Report discussed in meetings of the AMWC
✓ Report referred to in decisions of AMWC
✓ Report on the water resources in the Arab States prepared after a year and a half of the approval of the Action Plan

Branch activity A.1.2. Generate a Shared Water Resources Database and Establish an Integrated Arab Water Information System

Under the leadership of ACSAD, CEDARE and Center for Water Studies and Arab Water Security will generate, update and share a water database with all Arab countries as a nucleus for an extensive Arab Water Database. Moreover, CEDARE will provide an extensive list of unique indicators, along with the appropriate methods to calculate their values for different countries, which will indeed enrich the anticipated "Arab Water Information System."

Outputs

- An extensive Arab Water Information Systems available and easily accessible as a basis for water security for sustainable development.

Targets

- Facilitate access to water information to support decision-makers on the Arab scale
- Provide reference for information reports and statistics.

Implementation Principles

o Cooperation between all Arab States for compiling necessary information.

Implementation Modality

- Cooperation of institutions on the Arab scale regarding information-sharing through the national focal points.

Institutional Arrangements

ACSAD and CEDARE will follow-up the progress of activities regarding data compilation, refining and information technology and will provide consultation whenever needed.

Budget

The projected budget for this activity is US$ 500,000 for five years.

Communication Needs

- Contacts with national focal points for data compilation.

Obstacles

- Human, technical, institutional, financial and security risks.

Progress Markers

- ✓ Securing the necessary funding
- ✓ Operational information system
- ✓ Easy and immediate access to information through the system
- ✓ Generation of statistical and analytical reports from the Water Information System.

Main activity A.2. Prepare State of Arab Water Report

The crafting of policies that anticipate emerging opportunities and challenges requires judicious analysis of the best available information. This activity will prepare an integrated analysis of water resources in the Arab region for the year 2016. The State of the Arab Water Report will draw on analytical documents prepared under previous activities, and outputs from other Activity Areas of the Action Plan. The report will provide a solid analytical base for the preparation of the second 5-year Arab Strategy for Water Security Action Plan.

Outputs

- The State of Arab Water Report prepared and published after two years of the approval of the Action Plan, including integrated analysis of the best available information on water resources in the Arab region during this period.

Targets

- State of Arab Water Report released after a year and a half of the approval of the Action Plan
- State of Arab Water Report used to inform drafting of second 5-year Action Plan

Implementation Principles

- The State of Arab Water Report will relate to the priorities of nations as expressed in national Water Strategies, and the writing team will liaise with focal points in national ministries. Wider consultation and participation will be sought through peer-review processes with regional and international experts from civil society and research, as well as experts from national ministries.

Implementation Modality

- CEDARE, AWC, ACSAD, Center for Water Studies and Arab Water Security and FAO/RNE prepared The State of Arab Water Report.

Institutional Arrangements

CEDARE, AWC in cooperation and coordination with ACSAD, Center for Water Studies and Arab Water Security and relevant organizations and institutions have to describe the indicators and calculation methods used in the report.

Budget

The projected budget for this activity is US$ 1,500,000 for three years.

Communication Needs

- Framing needs according to priorities of member states
- Collection of analytic data and inputs
- Coordination of technical working group
- Consultation mechanisms with civil society
- Peer-review process
- Editing, publication and dissemination

Obstacles

- Relevance will be ensured through prior consultation with national focal points
- Analytic strength will be supported by outputs from other activities and quality of writing team and peer-review process

Progress Markers

- ✓ The State of Arab Water Report prepared after two years of the approval of the Action Plan
- ✓ Funding secured during one year after the approval of the Action Plan
- ✓ National focal points consulted with during one year after the approval of the Action Plan
- ✓ Circulation for peer-review during one year after the approval of the Action Plan
- ✓ Publication during two years after the approval of the Action Plan

B. Promoting the Use of Integrated Water Resources Management (IWRM) Principals

Relates to the 5th objective of the ASWS "Incorporation of IWRM principles into the Water policies of the Arab States"

Integrated Water Resources Management (IWRM) is defined as a “process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.”

Operationally, IWRM is a comprehensive, participatory planning and implementation tool for managing and developing water resources in a way that balances social and economic needs, and that ensures the protection of ecosystems for future generations. Since the different uses of water necessitate coordinated action, it has become imperative that the IWRM principles be incorporated into the policies of the Arab States.

An IWRM approach is an open, flexible process, bringing together decision-makers across the various sectors that impact water resources, and bringing all stakeholders to the table to set policy and make sound, balanced decisions in response to specific water challenges faced.

Main activity B.1. Enhancing the Use of IWRM Concepts

Branch activity B.1.1. Survey of IWRM Strategies in the Arab Region

The surveys will focus on IWRM as a problem-solving approach to address key water challenges in ways that are economically efficient, socially equitable and environmentally sustainable.

Outputs

- Country assessment of the three key policy principles (Equity, Ecological integrity, Efficiency) implemented.

Targets

- 50% of the countries will have adopted IWRM Strategies and plans as a tool for change for the first five years

Implementation Principles

- IWRM embedded in an overall policy for socio-economic development, physical planning and environmental protection. IWRM is an opportunity to take a coherent approach to improving how they develop, manage and use water resources to further sustainable development goals and meet development challenges. The determination of the "highest value uses" must take into account social and environmental as well as economic considerations.

Implementation Modality

- Focal points, Working Group, Multidisciplinary Team, Steering Committee, Process Management Team etc.

Institutional Arrangements

CEDARE, ACSAD and FAO/RNE have to implement this activity.

Budget

US$ 100,000 needed for five-year activities

Communication Needs

- Communication with the national focal points of Arab States

Obstacles

- Misconception as to what could be considered an IWRM plan

Progress Markers

- ✓ Comprehensive report of IWRM status in Arab States

Branch activity B.1.2. Assistance of Arab States to Prepare National IWRM Plans

Outputs

- The adoption of IWRM approaches and the preparation of IWRM Strategies and Plans promoted.
- Existing IWRM or water plans or incorporate water into current national development strategies identified.

Targets

- 100% of Arab States will have adopted IWRM plans by 2030

Implementation Principles

- Strong Partnerships with national water sectors. Institutionalizing changes (in water governance and administrative systems that are in place to develop and manage water resources and deliver water services, at different levels of society) that will promote more strategic and coordinated decision-making on an on-going basis. Involvement from multiple sectors, broader focus, dynamic rather than static framework, and strong stakeholder participation as main key and principle.

Implementation Modality

- Focal points and Working Group from CEDARE, ACSAD and FAO/RNE.

Institutional Arrangements

CEDARE, ACSAD and FAO/RNE have to implement this activity

Budget

US$ 300,000 needed for five-year activities

Communication Needs

- Communication with the national focal points of Arab countries

Obstacles

- National focal points insisting that existing frameworks/ policies qualify as IWRM plans

Progress Markers

- ✓ Number of national IWRM plans adopted

Branch activity B.1.3. Introduction of Integrated Urban Water Management (IUWM) Concept

Outputs

- Adaptation of IUWM concept

Targets

- Major cities in the Arab States will have adopted IWRM plans by 2030

Implementation Principals

- IUWM embedded in an overall policy for socio-economic development, physical planning and environmental protection

Implementation Principals

- Working Group from CEDARE, ACSAD and FAO/RNE.

Institutional Arrangements

CEDARE, ACSAD and FAO/RNE have to implement this activity

Budget

US$ 100,000 needed for five-year activities

Communication Needs

- Communication with the national focal points of Arab States

Obstacles

- Lack of interest from national decision makers, or insisting that current documents are all inclusive

Progress Markers

- ✓ Number of IUWM plans adopted in major cities

Branch activity B.1.4. Monitoring and Evaluation System for IWRM Plans Developed

Outputs

- Establishment of Monitoring and Evaluation System for IWRM plans

Targets

- 100% of countries will have developed Monitoring and Evaluation systems

Implementation Principles

- Harmonization of national, regional and global Monitoring and Evaluation indicators. Defining indicators, establishing benchmarks, and setting up mechanisms to ensure on-going monitoring and evaluation of key activities in moving towards IWRM. Monitoring and evaluation is to see whether the process of developing IWRM and Water Efficiency Plans is on track, to measure impacts, and to determine if actions are contributing to larger sustainable development goals.

Implementation Modality

- Focal points, Working Group, Multidisciplinary Team, Steering Committee, Process Management Team etc.

Institutional Arrangements

CEDARE, ACSAD and FAO/RNE have to implement this activity

Budget

US$ 500,000 needed for five-year activities

Communication Needs

- ➢ Communication with the national focal points of Arab States

Obstacles

- National focal points claiming that Monitoring and Evaluation is a separate process that has nothing to do with promoting IWRM

Progress Markers

- ✓ The development of harmonized indicators and publishing regular reports on the status of IWRM that utilises these indicators

Main activity B.2. Institutional and Human Capacity Building

Capacity building is one of the key solutions for most, if not all the identified obstacles to improved implementation of IWRM.

Institutional Capacity building caters to the required legal flexibility that could help accommodate essential elements of IWRM; it can also better the decentralization of the water sector in a manner that will enhance wider stakeholder participation in decision making.

Human Capacity building for Arab Water sectors experts and personnel is needed in different areas, but two particular areas stand out as the most critical, the first is the negotiation skills needed for transboundary water cooperation, and the second is the monitoring and evaluation knowledge and skills, as it is the basis for proper management.

Therefore, the institutional and human capacity building activities will be in the form of ongoing courses and workshops that should start directly after the approval of the Action Plan and continue through 2020, and will focus on the following subjects:

1. Institutional mapping for major cities and its integration into IUWM and IWRM plans.
2. Advanced approaches for Monitoring and Evaluation of the water sector (Earth Observations, Numerical modeling, and Geographical Information Systems).
3. Advanced indicators for Monitoring and Evaluation.
4. Transboundary water cooperation and negotiation with emphasis on International legal water documents and their pros and cons.
5. Involvement of indigenous and socially excluded peoples in the decision making process.

Branch activity B.2.1. Support to Strengthen Institutional Capacity

Outputs

Services which support innovation and continuous improvement for the application of IWRM provided.

Targets

- By end of the first 5 years, most countries will have accommodated essential elements of IWRM such as use of non-conventional water and decentralization of the water sector.

Implementation Principles

o Inter-departmental collaboration in system management, also involving non-agricultural government departments.

Implementation Modality

- Mobilize partnership to develop solutions and scale them up nationally.

Institutional Arrangements

AWC, jointly with FAO/RNE, ACSAD and the Arab Network for Environment and Development (RAED) will promote initiation of institutional reforms, as appropriate, to achieve the set targets.

Budget

The projected budget for this activity is US$ 250,000 for five years.

Communication Needs

➢ Communication with the national focal points of Arab States.

Obstacles

- Areas of work and organizational gaps and actions required to mitigate them.
- External risks and lack of commitment that may impede implementation.

Progress Markers

✓ Institutional reforms realized.

Branch activity B.2.2. Support to Strengthen Capacities and Skills of Stakeholders

Outputs

- Existing national mechanisms and instruments for IWRM updated, or new ones developed.

Targets

- 100% of countries will have provided training to stakeholders, starting after the approval of the Action Plan through 2020.

Implementation Principles

- Pilot in countries with critical needs, as the negotiation skills needed for transboundary water cooperation, and the monitoring and evaluation knowledge and skills.

Implementation Modality

- Training sessions, courses and workshops focusing on involving people in decision-making, advanced Monitoring and Elevation indicators and approaches, and transboundary water cooperation and negotiation.

Institutional Arrangements

AWC and FAO/RNE in cooperation with ACSAD will jointly organize training courses and interactive learning sessions.

Budget

The projected budget for this activity is US$ 250,000 for five years.

Communication Needs

- Contacts with Arab water expert and study and research centres to give lectures, train stakeholders and share lessons learned.

Obstacles

- Availability of funds and interest of trainees.

Progress Markers

- ✓ Number of trainees increases every year.

Branch activity B.2.3. Sustainably Strengthen Research, Extension, Collective Learning, Knowledge - Sharing and Communication Services in the Field of IWRM

Outputs

- Functional IWRM linkages in such a way as to improve access for stakeholders, with special focus on women.

Targets

- All Arab States aware about IWRM concepts

Implementation Principles

- Extension learning and knowledge-sharing services including farmer field schools approaches.

Implementation Modality

- Catalyzing communication and knowledge-sharing and social networks.

Institutional Arrangements

Working group from ACSAD, AWC and FAO/RNE will work towards establishing water users' associations and empowerment of the role of women in water management.

Budget

The projected budget for this activity is US$ 250,000 for five years.

Communication Needs

➢ Contacts with extension professionals to organize field work and consultation.

Obstacles

- Interest and commitment of stakeholders to engage in extension and knowledge-sharing schools.

Progress Markers

✓ Number of stakeholders increases every year.

Main activity B.3. Developing Legislation and Laws

A well-recognized IWRM plan should be backed up with a strong legal framework that assures its implementation.

Most of the Arab countries need more sophisticated laws with their associated codes to be introduced so as to address issues of future strategic concern such as non-conventional water resources. Also, Law enforcement is a major problem in many Arab States.

Branch activity B.3.1. Unified Arabic Water Law Proposed

Outputs

- IWRM plan within a legal and institutional framework implemented. Support to countries to strengthen national legislation and laws frameworks providing an enabling environment for the adoption of more sustainable rules. A new Unified Arab Water Law should also be considered, although it seems too ambitious.
- Specific regulations, legislation and policies to enable more effective water resources management through law enforcement.
- Institutional reform with a participatory and consultative approach implemented, involving the formal and informal sectors, to develop understanding and ownership of the change process. A legislative Study **"The Law of Arab Water Resources"** that will constitute a compendium of available legislative documents and give a better knowledge of the Arab law of freshwaters in general and, more specifically, as a source of ready reference and inspiration for Arab policymakers and decision makers, legal practitioners and academics, and for Government legal advisors and negotiators, as they deal with the complex legal ramifications of developing and managing water resources shared across international borders and search for relevant applicable rules.

Targets

- Arab States will have sophisticated laws with their associated codes which will address issues of future strategic concern such as non-conventional water resources

Implementation Principles

- Legislative reforms should be done in a coherent and integrative way and suit the broader social and political policies of the country. Raising wariness, sharing information and meaningful participatory debate are key elements of legislation reform process. Water governance reforms must not be limited to the water sector, but must take into account other sectors that impact and are impacted by water decision-making.

Implementation Modality

- Trainings sessions and consultative workshops on possible amendments modifications to existing national laws and frameworks as well as introducing new laws related to non-conventional water management and discussion of modern law enforcement approaches and techniques, and emphasizing on experience exchange between Arab States.

Institutional Arrangements

CEDARE, AWC and FAO/RNE in cooperation with ACSAD will assess current frameworks and enhance change through dialogue.

Budget

US$ 200,000 needed for five-year activities, in addition to US$ 50,000 for the legislative Study **"The Law of Arab Water Resources"**.

Communication Needs

- Communication with the national focal points and legal experts of the Arab States

Obstacles

- The never-ending gap between technical and legal experts
- National claims that law enforcement is highly in effect

Progress Markers

- ✓ The introduction of new laws
- ✓ The number of citations/ penalties per year compared to previous years.

Main activity B.4. Awareness Rising on Water and Environment Issues

The principles and concepts of integrated water resources management furnish a new approach, not only connected with the technical aspects of water, but also it exceeds them to other multiple aspects, such as the principles of participation, management concepts, new roles, and the responsibilities resulting from them that are lain on the burden of the different concerned categories. This approach forms a challenge for the experts and works in the field of water alike, due to the fact that the education systems, scientific researches

and training in some of the Arab States do not give adequate importance to these aspects in managing the water resources.

In spite of the training courses organized by the concerned institutions in these countries, they remain without providing close connection with the applied level in the different fields of integrated management of the water resources, without the ability to upgrade the level of administrative and technical level in the sector of water.

There is a notable difference between what the Arab States see that they achieved as related to acceptable advancement in condensing the training programs and the reality of the institutional abilities in managing the water sector that maintains humble traditional competency Therefore, there is a necessary need to support the training programs, including training the trainers and the employees of the Administration.

Further to what is mentioned earlier, there is difference that is still clear in the integrated understanding to the fundamentals of the integrated management of the water resources, in such a way that this understanding is to be conformed with the specificities of each of the Arab countries, or to the specificities of the Arab Region as a whole. Therefore, the circulated concepts and principles appear including a special technical language related to the researchers and international entities that work on assisting in absorbing them and applying them. Sometimes it is even difficult for the workers in the sector of water and the related sectors to circulate these concepts.

Here lies the big challenge for the researchers in the universities, research centers and training establishments that assist in managing the water resources in the Arab countries, as it is requested from these bodies to illustrate these concepts and throw the light on their contents, and dimensions, especially as related to integration, coordination and participation as basic concepts in elaborating the water strategies, and preparing its executive programs that have to simulate the specificity of the Arab Region. In this context, it should be also made clear how to get use of the administrative tools in applying the concept of integrated management of the water resources, and also how to use the suitable indexes of work for accomplishing the water strategies and coping with the change resulting from them.

Branch Activity B.4.1. Introducing the Basics of Water and Environment Sciences and the Guidance and Orientation Concepts to the Educational Curriculums

Introducing the Basics of Water and Environment Sciences and the Guidance and Orientation Concepts to the Educational Curriculums, besides to the concepts of general enlightening are considered an urgent necessity, due to the fact that the water resources are a matter of life, economic, social, health, legal, environmental and religious matter. The calls have been increased locally and internationally since the UN Conference which was held in Argentine in 1977, to make the water guidance part of the academic curriculums and subjects that are related to water in all the stages of general education (kindergarten, primary, preparatory, secondary and university). While in the Arab Countries, the dominant feeling until now at most of the social categories is that water is of the natural

resources that is Inexhaustible, and preventing its wasting at the level of the individual cannot change anything in increasing the possibility of getting it, especially that the water services are still offered with low prices in most of the Arab countries. Accordingly, the public awareness of the need to rationalize the use of water is incomplete as related to its importance and endeavoring to maintain it, which would contribute in saving large quantities of it. From here the important role that can be water guidance played through the educational process at various levels comes in clarifying many of the circulated concepts, especially water security concepts, and water demand management, and adopting integrated approach in analyzing and tackling the supply and demand problems on the water, and updating the tools of organizing the water supply tools, and recovering the costs of making available water.

Outputs

- Including the Educational Curriculums the Basics of Water and Environment Sciences and the Concepts of Guidance and Orientation:

Targets

- Developing the educational curriculums and programs, especially those assigned in the fields of water resources and its usages, in such a way to raise the water awareness at the emerging generations.
- Supporting the role of the educational institutions in deepening the environmental awareness and introducing the concepts of maintaining the environment and protecting the natural resources from exhaustion, and pollution, especially water resources.
- Developing the educational qualification levels to provide technical staff of scientific and practical experience in the field of using and managing water resources, and in the field of water guidance.

Implementation Principles

- This activity guarantees harmonization with the related national strategies, and improves the conditions of consultancy and stake-holding, and secures participation in planning, and execution through cooperating and coordinating with the Ministries of Education in the Arab States.

Implementation Modality

- The national entities concerned in the education, water and environment sector in each Arab country shall first make a common review to the academic curriculums and the subjects credited in their schools, institutes and universities in the field of water and environment sciences. Then they should work on suggesting integrated patterns, plans, and subjects that are circulated internationally, after they cope with the local circumstances.
- The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD), along with the Centre of Environment and Development for the Arab Region and Europe seeking the assistance of the expert Arab institutions, regional or international institutions shall take over the responsibility of performing the following:

a. Presenting the patterns of the curriculums, plans, and subjects elaborated in the Arab countries for analysis, and discussion through special workshops and symposiums held for this purpose, to which the specialists are invited.
b. Promoting for patterns of the curriculums, plans and subjects credited after analysis, and discussing at the Arab World level, and offering technical assistance to the related Arab entities that desire to apply these curriculums, plans and subjects.
c. Training and qualifying technical cadres that works at the educational institutions in the field of developmental guidance.

Institutional Arrangements

The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD), along with the Centre of Environment and Development for the Arab Region and Europe (CEDARE) and the Arab Network for Environment and Development (RAED) will be supervising on accomplishing all the works related to the requested activities, and consult about that with the concerned national institutions in the Arab countries. When necessary, they can seek the assistance of specialized regional or international organizations.

Budget

The projected budget necessary for accomplishing this activity is 300,000 US$.

Communications Needs

- Communicating with all the entities responsible for the sector of education, water and environment in each Arab country to prepare a patter for academic curriculums, plans and subjects including all the educational stages, and suitable with the prevailing local circumstances.
- Consultation through meetings, workshops, or symposiums, with local, regional, and international experts to exchange knowledge about preparing patters for the academic curriculums, plans and subjects including all the educational stages, dealing with the water and environment sciences, including water and environment guidance and also consulting about the methods of executing the activities related to them.
- Preparing periodical reports about the progress of the work, and submitting them to the Consultant Scientific and Technical Committee in the Arab Ministerial Water Council.

Obstacles

- Human, legislative, technical, institutional and financial challenges.
- Political Conditions.

Progress Markers

- ✓ Preparing patterns for academic curriculums, plans and subjects, including all the educational stages, and discussing the water science and environment, including the water and environmental guidance.
- ✓ Organizing workshops for analyzing and discussing the patters of the prepared academic curriculums, plans and subjects.

- ✓ Issuing printing matters about the prepared academic curriculums, plans and subjects and the issues related to them.
- ✓ Increasing the size of the human cadres working in the field of water and environmental enlightenment.

Branch Activity B.4.2. Providing Awareness and Guidance Programs for the Water Users

Despite what the water supply projects achieved, for different purposes, such as drinking, irrigation, industry and power generation in most of the Arab countries of the positive results that contributed in accomplishing a significant proportion of the desired development, yet these projects are still suffering from a number of difficulties and challenges, under which there lies the subject of the humble level of an awareness to the importance of rationing water use, and maintaining its resources, and protecting the surrounding environment, particularly in the agricultural sector. The lowness in this awareness degree can be attributed to many reasons such as illiteracy, keen interest to ensure applying old technologies and methods in irrigation and production, and the prevalence of conservative mentality and resisting innovation, and dispersing of agricultural holdings, and failure of the state of knowledge and management, and weak financial capabilities.

The need for providing integrated water and environmental a warning base including all the water sectors is considered indispensable step to contribute, besides to other procedures, in mitigating the waste of available water and maintain it to enlarge the circle of its effect in the process of sustainable development in each of the Arab countries, that most of them suffer from the scarcity or lack of water a warning and guidance programs, in spite of the limitedness of the water resources in it, and the bad need for rationing its usages.

Outputs

- Awareness and Guiding Programs for the Water Users.

Targets

- Upgrading the level of awareness of the water users in the field of using and managing water resources through training, qualification, and absorbing the modern technologies.
- Supporting the participation of the beneficiaries from water in elaborating the water and environmental plans and making the decisions related to water projects and rationing its usages with the projects of environment protection and maintaining it.

Implementation Principles

- o This activity guarantees harmonization with the concerned national strategies, and improves consultancy and stake-holding, and provides partnership in planning and execution.

Implementation Modality

- The national entities concerned in the water and environment sectors in each Arab country elaborate water and environmental awareness programs based on the applied aspect and in proportion with the prevalent local circumstances by consulting, cooperating and coordinating with The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD), along with the Centre of Environment and Development for the Arab Region and Europe(CEDARE), and when necessary seeking the assistance of the experienced Arab, regional, or international institutions.

Institutional Arrangements

The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD), along with the Centre of Environment and Development for the Arab Region and Europe shall be responsible for following up the accomplishment of the works related to the requested activities, and shall consult with each other thereabout with the concerned national institutions in the Arab States, or with the experienced Arab, regional, and international institutions, when necessary.

Budget

The value of the budget necessary for accomplishing this activity is 300,000 US$.

Communication Needs

- Communicating with all the entities responsible for the sector of education, water and environment in each Arab country to prepare special warning programs.
- Consultation through meetings, workshops, or symposiums, with local, regional, and international experts to exchange knowledge about preparing the programs water and environment awareness and also consulting with them about the methods of executing the activities related to them.
- Preparing periodical reports about the progress of the work and submitting them to the consultant, scientific and technical Committee in the Arab Ministerial Water Council.

Obstacles

- Human, legislative, technical, institutional and financial challenges and restrictions.
- Political conditions.

Progress Markers

- ✓ Number of the prepared water and environmental awareness programs.
- ✓ Number of the workshops organized in the frame of water and environmental awareness programs.
- ✓ Number of the Radio and TV programs prepared about water and environment.
- ✓ Increase in the size of the human cadres working in the field of water and environmental awareness.

Branch Activity B.4.3. Elaborating Training, Guiding, and Research Programs for the Cadres of Water Management

The Arab institutional structures working in the sector of water suffer from the scarcity of their cadres who are specialized in the field of water and environmental guidance or lack or scarcity of the training and scientific research programs. Hence, from here there emerges the importance of working seriously and the responsibility towards elaborating training plans and guidance for the technicians working in the institutions responsible for managing water resources, besides to crediting regular practical programs for applied research dealing with the issues of rationing the usages of water and providing its well management.

Outputs

- The existence of training, guiding, and research programs for the management of water.

Targets

- Preparing specialized scientific and technical cadres in the field of water and environmental guidance to upgrade the water and environmental awareness of the water users.
- Supporting and developing the scientific researches, especially the applied ones, in the water sciences for the purpose of rationing its usage and maintaining it.
- Improving the level of water resources management.

Implementation Principles

- This activity guarantees harmonization with the related national strategies and improves the consultation and stake-holding and provides partnership in planning and execution.

Implementation Modality

- The national entities concerned in the water and environment sectors in each Arab country shall elaborate water and environmental awareness programs based on the applied aspect and in proportion with the prevalent local circumstances under the supervision of The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD), and the Centre of Environment and Development for the Arab Region and Europe(CEDARE), and when necessary seeking the assistance of the experienced Arab, regional, or international institutions.

Institutional Arrangements

The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD), along with the Centre of Environment and Development for the Arab Region and Europe (CEDARE) will be responsible for following up the accomplishment of the requested activities, and will consult with each other thereabout with the concerned national institutions in the Arab States. When necessary, they can communicate with specialized regional or international organizations.

Budget

The projected budget necessary for accomplishing this activity is 300,000 US$.

Communication Needs

- Communicating with the entities responsible for the water, environment, and media sector for elaborating water and environmental awareness programs in each Arab country.
- Consultation through meetings, workshops, or symposiums, with local, regional, and international experts to exchange knowledge about preparing patters for the academic curriculums, plans and subjects including all the educational stages, dealing with the water and environment sciences, including water and environment guidance and also consulting about the methods of executing the activities related to them.
- Preparing periodical reports about the progress of the work and submitting them to the Consultant Scientific and Technical Committee in the Arab Ministerial Water Council.

Obstacles

- Human, legislative, technical, institutional and financial challenges and restrictions.
- Political conditions.

Progress Markers

- ✓ Number of the prepared water and environmental awareness programs.
- ✓ Number of the workshops organized in the frame of the environmental awareness programs.
- ✓ Increasing the size of the human cadres working in the field of water and environmental awareness.

Main activity B.5. Public Participation/ Private Sector Participation

Public-private participation has for long been identified as an important solution for bridging water and sanitation related gaps, especially those with huge financial requirements. The main challenge in this category is to enhance the appeal of water-related investments to potential private sector investors by pushing forward win-win scenarios. The suggested activity under this category is to create different platforms for dialogue between the public and private sectors where communications regarding potential mutual benefits can be exchanged. Again, non-conventional water will be one of the main themes for public-private participation as it carries great cooperation chances between both sectors, namely in the fields of using treated wastewater in agriculture and desalination. The Dialogue is expected to start directly after the approval of the Action Plan and end in 2020. The different dialogue platforms will include online forums and physical workshops.

Branch activity B.5.1. Appeal of Water-related Investments to Potential Private Sector Investors

Outputs

- Private sector investment enhanced.

Targets

- All Arab States will have started a call for investments to private sectors after the approval of the Action Plan through 2020.

Implementation Principles

- Stakeholder IWRM awareness.

Implementation Modality

- Stakeholders' assessment.

Institutional Arrangements

AWC, jointly with FAO/RNE, RAED and ACSAD will take responsibility of sending out call for investments to private sector investors.

Budget

The projected budget for this activity is US$ 125,000 for 5 years.

Communication Needs

- Communication with private sector investors.

Obstacles

- Availability and interest of private sector to invest in water and agriculture sectors.

Progress Markers

- ✓ Increase of investments
- ✓ Increase of No. of interested private sector.

Branch activity B.5.2. Different Platforms for Dialogue between the Public and Private Sectors

Outputs

- Interactive dialogue between public and private sectors created and recommendations put into action.

Targets

- All Arab States will have started Dialogue between public and private sectors after the approval of the Action Plan going on till 2020.

Implementation Principales

- Multi-disciplinary participation in interactive dialogue is essential to create harmony.

Implementation Modality

- Online forums and physical workshops will be the implementation platforms.

Institutional Arrangements

ACSAD in cooperation with AWC, FAO/RNE, RAED and willing partners will organize forums and workshops with enabling environment for interactive dialogue.

Budget

The projected budget for this activity is US$ 150,000 for five years.

Communication Needs

➢ Input from public and private sector representatives.

Obstacles

- Interest of public and private sectors to engage in the dialogue.

Progress Markers

✓ Increase of number of participants from public and private sectors.

Main activity B.6. Promoting Water Use Efficiency

Improving efficiency in the use of water and related resources (including financial resources) is another way to maximize the economic and social welfare derived from such scarce resources, and is an integral part of an IWRM approach. Before simply "providing more water" (often implying construction of new and expensive infrastructure) the first step should be to look for opportunities to improve efficiency.

Two different aspects of efficiency can be highlighted: one dealing with technical efficiency in the use of water; the second dealing with allocative efficiency, i.e. the efficiency with which society allocates water and related resources for sustainable social and economic development. The first calls for demand management interventions; the second involves strategic water allocation. From an IWRM perspective, both technical and allocative efficiency require recognizing the social and environmental as well as the economic value of water.

Branch activity B.6.1. Assessment of Water Use Efficiency Indicators

Outputs

- Overall national water use efficiency evaluated and measured
- Aspects of improving technical efficiency - that calls for demand management interventions – identified
- Water Efficiency Strategies and plans elaborated (Regional ratio of improvement of water use efficiency from 5% to 10% by the end of the first 5 years)

Targets

- All Arab States will have adopted water efficiency strategies and plans for the first 5 years
- Arab States will have assessed and measured their national WUE within 5 years
- All Arab States will have improved their technical and allocative efficiencies and will have provided training on WUE within 5 years

Implementation Principles

- The ACSAD, AWC and CEDARE new method for measuring overall national water use efficiency is to be used. Defining indicators, establishing benchmarks, and setting up mechanisms that will ensure the on-going monitoring and evaluation of developing Water Efficiency Plans. This will keep the process on track by measuring impacts and the percentage of improvement.
- Improving water use efficiency for agricultural production by building capacity of researchers and technical staff and farmers through development and demonstration of technologies related to water resource base-use and cropping systems management. Improving water use efficiency for agricultural production by building capacity of researchers and technical staff and farmers through development and demonstration of technologies related to water resource base-use and cropping systems management.

Implementation Modality

- Developing methodology and indicators for measuring overall water use efficiency will be implemented
- Improving efficiency in the use of water and related resources (including financial resources) and maximizing the economic and social welfare derived from such scarce resources and considering WUE as an integral part of an IWRM approach

Institutional Arrangements

The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) in cooperation with FAO/RNE, AWC, International Center for Biosaline Agriculture (ICBA), and CEDARE will coordinate the implementation and monitoring the activities.

Budget

The projected budget for this activity is US$ 250,000 for five years.

Communication Needs

- Contacts with relevant ministries of irrigation and agriculture in Arab States through the official nominated focal points
- Communicating with research institutions to make use of their experience in the field
- Disseminating information based on a communication strategy

Obstacles

- Gaps on technical challenges of the Arab States
- Budget constraints
- High level commitment

Progress Markers

- ✓ Compilation of national data of water use efficiency.
- ✓ Improvement of WUE
- ✓ Increase of number of trainees

Branch activity B.6.2. Hands-on Training of Water Use Efficiency Indicators

Outputs

- Training on water use efficiency indictors provided
- Technological packages of improved water use efficiency and resources conservation are demonstrated
- Technical know-how and skills on water use efficiency of technical staff strengthened
- Farmers, Water User Associations and local communities' capacities built through on-farm demonstration and training for effective participation and future sustainability of activities

Targets

- All Arab States will have provided necessary training on water use efficiency for the first 5 years

Implementation Principles

- o General water efficiency training courses and water balance and decision support systems hands on-training. Most and best successful technological packages for WUE are documented, evaluated and recommended for dissemination and use in development areas
- o Support of specialized institutions and local authorities, water user associations, NGO's and other projects/programmes

Implementation Modality

- Training of agricultural technical and extension staff, water user associations and agricultural labors of all the countries to enhance their capacity on WUE
- Ensure hands-on training on the use of WUE indicators

Institutional Arrangements

The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) in cooperation with FAO/RNE, AWC, ICBA, and CEDARE will coordinate the implementation and monitoring the activities.

Budget

The projected budget for this activity is US$ 250,000 for five years.

Communication Needs

- ➢ Contacts with relevant ministries of irrigation and agriculture in Arab countries through the official nominated focal points
- ➢ Communicating with research institutions to make use of their experience in the field

- Disseminating information based on a communication strategy

Obstacles

- Gaps on technical challenges of the countries
- Budget constraints
- High level commitment

Progress Markers

- ✓ Compilation of national data of water use efficiency
- ✓ Improvement of water use efficiency
- ✓ Increase of number of trainees

Main activity B.7. Expansion of the Use of Non-conventional Water

Branch activity B.7.1. Hands-on Training of Water Use Efficiency Indicators

Here, non-conventional water includes:

1. Desalined seawater and saline and semi-saline water
2. Treated waste and drainage water

Outputs

- Development of guidelines for Best Available Technology(BAT) and Best Environmental Practicals(BEP) in non-conventional water during two years after the approval of the Action Plan
- Three training courses on BAT and BEP in non-conventional water are organized during three years after the approval of the Action Plan
- Five pilot project are implemented in reuse of non-conventional water during five years after the approval of the Action Plan
- Five pilot projects on integration of non-conventional waters in national IWRM plans are implemented during five years after the approval of the Action Plan
- Guidelines for application of ecosystem based management for the management of water shed are prepared during three tears after the approval of the Action Plan
- Three training course on application of ecosystem based management for water shed are organized during five years after the approval of the Action Plan
- One regional replication workshop is organized

Targets

- By 2020, 50% of Arab States are applying BAT and BEP in non-conventional water projects and have national systems to integrate water reuse in their national IWRM plans

Implementation Principles

- The implementation will be based on a strong capacity building components, learning by doing and replication process. Coordination with FAO/RNE is primordial as two important activities are being implemented with different regional institutions:

1) Update of the existing FAO publication: User's manual for irrigation with treated wastewater, and
2) Elaboration of guidelines of brackish water use in agricultural production.

- These publications can be produced by the consortium (ACSAD, UNEP, FAO/RNE, ICBA, and AWC).

Implementation Modality

- High-level endorsement and supporting resolutions and protocols on data-sharing and information exchange will be formulated by Arab Governments to solicit national input to the regional knowledge hub.

Institutional Arrangements

ACSAD and UNEP will coordinate the implementation of the activities related to ecosystem based management and preparation of guidelines for use of non-conventional waters. ACSAD will be also responsible for leading the integration of non-conventional water in IWRM national plans. The implementation partners include ACSAD, CEDARE, ESCWA, GIZ, UNEP, UNESCO, FAO/RNE and ICBA.

Budget

The projected budget for this activity is US$ 300,000 for two years. Total budget until 2020 is estimated to US$ 1,650,000.

Communication Needs

- Communicating the guidelines to all stakeholders in the region
- Communicating with EU to make use of their experience in the field
- Reporting progress in development to institutional stakeholders and end-users at the regular sessions of the AMWC Technical Scientific and Advisory Committee
- Disseminating information on the web-based knowledge hub to public and private stakeholders.

Obstacles

- Technical challenges and constraints, including issues affecting internet accessibility
- Budgetary limitations
- Insufficient capacity of stakeholders to effectively benefit from the potential uses of the regional knowledge hub

Progress Markers

- ✓ Guidelines are published
- ✓ Training courses are organized
- ✓ Reports of pilot projects are published
- ✓ Regional replication workshop is organized

Main activity B.8. Protection of Water Resources in Coastal Areas

Branch activity B.8.1. Support the Arab States to Protection of Water Resources in Coastal Areas

Arabic region is witnessing large scale coastal development significantly impacting the quality of coastal ecosystems .The region issued regulations governing the conservation of the coastal waters to sustain its ecosystem services. In addition, countries in the regions have conservation commitments in the framework of three regional legal agreements namely:

1. The Mediterranean Action plan to conserve the Mediterranean Sea (MAP)
2. The convention for the protection of Marine Environment in the Arabic Gulf (ROPME) and,
3. The Regional Organization for the Conservation of the Environment of the Red sea and Gulf of Aden (PERSGA)

Nevertheless, the quality of coastal waters is directly impacted by the coastal development plans in urbanization, industrialization, maritime traffic; tourist development etc….Thus there is a need to improve the monitoring system of the coastal waters to develop trends and policy reforms to sustain the ecosystem services of coastal areas.

Outputs

- Provide assistance to Arab Countries to develop institutional reforms in monitoring of coastal waters
- Organize three workshops on Ecosystem Based Monitoring
- Develop three pilot studies on Ecosystem Based Monitoring
- Build the capacities of the countries in management of coastal and marine environment
- Guidelines for the application of EBM for the monitoring of coastal water
- Three workshops on application of EBM for coastal management

Targets

- By 2020 , 50% of Arab countries shave institutional set up for Ecosystem Based coastal monitoring system
- By 2020,50% of Arab countries have operational monitoring programmes for coastal water based on Ecosystem Based Management
- By 2020 a system of sharing data and information on coastal monitoring is operational

Implementation Principles

- Coordination between UNEP, MAP, ROPME and PERSGA to provide assistance to countries to develop institutional reforms related to monitoring of coastal waters based on ecosystem based management concepts.
- Building capacities will be ensured through the preparation of guidelines in Arabic and consultation workshops with regional experts and stakeholders.
- Reports will be peer-reviewed by national stakeholders, civil society representatives and scholarly experts.

- Consultation with institutional stakeholders regarding data availability, access and sharing will be crucial to both the design and operation of the regional knowledge portal.
- The development, hosting and sustained operation of the regional knowledge portal will rely on partnerships between regional and national institutions.

The release of a web-based knowledge portal will provide opportunities for participation from researchers in data analysis and knowledge creation on coastal management issues facing the Arab region.

Implementation modality

- A team from UNEP and ACSAD will prepare the guidelines and organize the workshops. UNEP will coordinate with the regional organizations to ensure the proper implementation of the target.
- Agreements of MAP, PERSGA and ROPME are highly needed to develop the portal. High-level endorsement and supporting resolutions and protocols on data-sharing and information exchange will be formulated by Arab Governments to solicit national input to the regional knowledge portal.

Institutional arrangements

A working team from UNEP and ACSAD will have overall responsibility for this activity and determine the modalities for the establishment of the web-based knowledge portal. MAP, PERSGA and ROPME will be responsible for leading the generation of data and information.

Budget

The projected budget for assistance to Arab countries is US$600,000 until 2020.

The projected budget for capacity building is US$1,200,000 until 2020.

The projected budget for developing an information system is US$ 750,000 until 2020.

Communication Needs

- Communicating the benefits of data-sharing and information exchange to holders of data and responsible authorities and MAP,ROPME and PERSGA
- Requesting data and information from Arab member states
- Reporting progress in development to institutional stakeholders and end-users at the regular sessions of the AMWC Technical Scientific and Advisory Committee
- Disseminating information on the web-based knowledge portal to public and private stakeholders.

Obstacles

- Unable to obtain access to data
- Lack of sustainability in data-sharing
- Technical challenges and constraints, including issues affecting internet accessibility
- Budgetary limitations
- Sustainability of the regional knowledge portal beyond 2020
- Insufficient capacity of stakeholders to effectively benefit from the potential uses of the regional knowledge portal.

Progress Markers

- ✓ Coastal water monitoring systems assessed and evaluated
- ✓ Available data and information collected
- ✓ Institutions engaged in coastal science and assessment mapped
- ✓ Web-based regional knowledge portal designed, hosted and established
- ✓ Functional database online
- ✓ Number of countries linked to the database
- ✓ Number of countries with access to the database
- ✓ Number of stakeholders using the database

C. Strengthening Scientific, Technological and Industrial base

Main activity C.1. Development of Scientific Research and Transfer and Localization of Technology

One of the most pervasive problems afflicting people in the Arab region is inadequate access to clean water and sanitation. Problems with water are expected to grow worse in the coming decades, with water scarcity and drought. Addressing these problems calls out for a tremendous amount of research to be conducted to identify robust new methods of purifying water at lower cost and with less energy, while at the same time minimizing the use of chemicals and impact on the environment. Thus there is a need to make use of up-to-date sciences and technology finding to improve the treatment and decontamination of water, as well as efforts to increase water supplies through the safe re-use of wastewater and efficient desalination of sea and brackish water.

Branch activity C.1.1. Support the Arab States to have Access to Green Technology

Outputs

- Develop guidelines for greening water and waste water technology
- Organize training courses to build the capacity of countries to make use of guidelines for greening water and waste water technology.

Targets

- Provide assistance to Arab States for greening water technology for Arab region

Implementation Principles

- o Coordination between UNEP/ROWA, ACSAD and regional research institutes to provide assistance to Arab States to make use of greening concepts for water and waste water technology

Implementation Modality

- UNEP will coordinate with ACSAD to ensure the proper implementation of the target

Institutional Arrangements

- UNEP in cooperation with ACSAD will take lead responsibility for this activity, identifying priorities with the cooperation of LAS, ACWUA and another relevant Arab organizations

Budget

The projected budget for this activity is US$200,000 until 2020.

Communication Needs

- Agreements with research institutes
- Holding consultation meetings
- Management of peer-review process
- Editing, layout and digital and hardcopy printing of reports
- Dissemination of digital and hardcopy reports

Obstacles

- Cooperation with regional research organizations
- Lack of funding

Progress Markers

- ✓ Copies of the agreements with LAS and research institutes
- ✓ Two reports of training courses after three years of the approval of the Action Plan
- ✓ Guidelines published in Arabic after three years of the approval of the Action Plan

Branch activity C.1.2. Build the Capacities of the Arab States in BAT and BEP for Brackish and Seawater Desalination

The need for resource-saving, low-impact "green" desalination technologies is evident as the use of desalination accelerates in many parts of the world. The concept of "best available techniques" (BAT) aims at the identification of state of the art technologies, processes, or methods of operation which indicate the practical suitability for preventing or reducing pollution of the atmosphere, water and soil, as well as the quantities of waste, and for reducing the impact on the environment as a whole.

Outputs

- Guidelines on BAT and BEP for brackish and sea water desalination after three years of the approval of the Action Plan
- Workshop organized after three years of the approval of the Action Plan

Targets

- Provide assistance to Arab States for greening water technology for Arab region

Implementation Principles

- Building capacities will be ensured through the preparation of guidelines in Arabic and organizing workshop with regional experts and stakeholders. Reports will be peer-reviewed by national stakeholders, civil society representatives and scholarly experts

Implementation Modality

- Team from UNEP and ACSAD will prepare the guidelines and organize the workshop.

Institutional Arrangement

UNEP and ACSAD will take lead responsibility for this activity, identifying priorities with LAS and ACWUA commissioning teams to prepare guidelines and hold consultation workshop, and will take responsibility for organizing peer-review and dissemination of products

Budget

The projected budget for this activity is US$ 120,000 for three years

Communication Needs

- Agreement of priorities areas for reports with LAS
- Holding workshop
- Management of peer-review process
- Editing, layout and digital and hardcopy printing of reports
- Dissemination of digital and hardcopy reports•

Obstacles

- Lack of funding

Progress Markers

- ✓ Guidelines prepared after three years of the approval of the Action Plan
- ✓ Workshop organized after three years of the approval of the Action Plan

Branch activity C.1.3. Build the Capacities of the Arab States in Management of Water Reuse

Outputs

- Preparation of Guidelines for water reuse technology after three years of the approval of the Action Plan
- Preparation of training package on management of water reuse after three years of the approval of the Action Plan
- Organizing a number of national training courses on management of water reuse2018-2020

Targets

- By 2020 Regional programme to increase the technological awareness on water reuse

Implementation Principles

- Building capacities will be ensured through the preparation of guidelines in Arabic and national training courses with regional experts and stakeholders. Reports will be peer-reviewed by national stakeholders, civil society representatives and scholarly experts.

Implementation Modality

- Team from UNEP/ROWA, LAS, WHO, FAO institutions will prepare the guidelines and organize the training courses.

Institutional Arrangements

UNEP and ACSAD will take lead responsibility for this activity, identifying priorities with LAS, WHO and FAO/RNE, commissioning teams to prepare guidelines and hold consultation training courses, and will take responsibility for organizing peer-review and dissemination of products.

Budget

The projected budget for this activity is US$ 450,000 until 2020.

Communication Needs

- Agreement of priorities areas for reports with LAS, WHO and FAO/RNE
- Holding training courses
- Management of peer-review process
- Editing, layout and digital and hardcopy printing of reports
- Dissemination of digital and hardcopy reports

Obstacles

- Lack of funding

Progress Markers

- ✓ Guidelines released after three years of the approval of the Action Plan
- ✓ Training package prepared after three years of the approval of the Action Plan
- ✓ Training courses reports between 2018-2020

Branch activity C.1.4. Build the Capacities of the Arab States in Innovation in Water Economy

Outputs

- Guidelines for innovation in water efficiency after three years of the approval of the Action Plan
- Workshop organized after three years of the approval of the Action Plan

Targets

- By 2020 to increase the technological awareness on Economic Instruments to increase water efficiency. Improving water efficiency allows countries to reduce water scarcity and maximize the benefits provided by existing water infrastructure. It also

frees up water for other uses and reduces environmental degradation. Efforts to improve water efficiency can therefore contribute directly to the development goals of many countries, especially those that are chronically short of water or the capital to invest in water development.

- In order to boost resource-efficient growth and innovation to break the links between economic growth and environmental degradation, there is a need to

  1. Increase resource efficiency
  2. Encourage public policies and private-sector initiatives that promote increased investment in efficient, clean and safe production methods.
  3. Shift consumer choice towards more resource-efficient and environmentally friendly products and services.

Implementation Principles

- Building capacities will be ensured through the preparation of guidelines in Arabic and organizing workshop with regional experts and stakeholders. Reports will be peer-reviewed by national stakeholders, civil society representatives and scholarly experts

Implementation Modality

- Team from UNEP, LAS, ACSAD, ESCWA and FAO/RNE institutions will prepare the guidelines and organize the workshop.

Institutional Arrangement

UNEP/ROWA and ACSAD will take lead responsibility for this activity, identifying priorities with LAS, ESCWA and FAO/RNE, commissioning teams to prepare guidelines and hold consultation workshop, and will take responsibility for organizing peer-review and dissemination of products

Budget

The projected budget for this activity is US$ 120,000 for three years.

Communication Needs

- Agreement of priorities areas for reports with LAS, ACSAD, ESCWA and FAO/RNE
- Holding workshop
- Management of peer-review process
- Editing, layout and digital and hardcopy printing of reports
- Dissemination of digital and hardcopy reports

Obstacles

- Agreement between WHO and FAO/RNE
- Lack of funding

Progress Markers

- ✓ Guidelines prepared after three years of the approval of the Action Plan
- ✓ Workshop organized after three years of the approval of the Action Plan

Branch activity C.1.5. Enabling Governments to Facilitate the Localization of Water and Waste Water Technology by Financial Institutions and Private Sector

Outputs

- Guidelines on legal and financial mechanisms to facilitate the localization of water and waste water technology after three years of the approval of the Action Plan
- Workshop organized after preparing of the Guidelines
- Creating a platform of financial institutions and private sector to facilitate localization process 2020-2030

Targets

- By 2030 to fully localize water and waste water technology. Localization is the process of adapting a product or service to a particular language, culture, and desired local "look-and-feel." Localization of water and waste water technology is, in medium term, affordable in view of the technological development of Arabic Countries. Localization needs to mobilize financial institutions and private sectors to establish financial mechanisms and tools to enable the private sectors in Arabic Countries to take the lead in water and waste water technology.
- Arab governments develop a legal and incentives systems to support the effort of private sectors in the localization process.

Implementation Principles

- Building capacities will be ensured through the preparation of guidelines in Arabic and organizing workshop with regional experts and stakeholders and the creation of platform of financial institutions and private sector to exchange information on localization process.

Implementation Modality

- Team from UNEP/ROWA, LAS, ACSAD and ESCWA will prepare the guidelines, organize the workshop and create the platform.

Institutional Arrangement

UNEP/ROWA, ACSAD and ACWUA will take lead responsibility for this activity, identifying priorities with LAS and ESCWA, commissioning teams to prepare guidelines and hold consultation workshop to lauch the creation of the platform, and will take responsibility for organizing peer-review and dissemination of products

Budget

The projected budget for this activity is US$ 350,000 until 2020.

Communication Needs

- Agreement of priorities areas for reports with LAS and ESCWA
- Holding workshop and launching platform
- Management of peer-review process
- Editing, layout and digital and hardcopy printing of reports

- Dissemination of digital and hardcopy reports

Obstacles

- Lack of funding
- Poor cooperation of private sector

Progress Markers

- ✓ Guidelines prepared after three years of the approval of the Action Plan
- ✓ Workshop organized after five years of the approval of the Action Plan in 2019
- ✓ Platform launched in 2020.

Branch activity C.1.6. Development of Data and Information Sharing System

Outputs

- Manual for the use of the portal and data and information is prepared during two years after the approval of the Action Plan
- Portal is developed during two years after the approval of the Action Plan
- Access to the portal by competent authority in the countries during three years after the approval of the Action Plan
- Portal full operational by 2020

Targets

- Establish a network of water research group after three years of the approval of the Action Plan

Implementation Principles

- Consultation with institutional stakeholders regarding data availability, access and sharing will be crucial to both the design and operation of the regional knowledge portal.
- Development, hosting and sustained operation of the regional knowledge portal will rely on partnerships between regional and national institutions.
- The release of a web-based knowledge portal will provide opportunities for participation from researchers in data analysis and knowledge creation on water issues facing the Arab region.

Implementation Modality

- Agreements of ACSAD, ESCWA, FAO/RNE and WHO are needed to develop the portal on water and waste water.

Institutional Arrangements

UNEP, ACSAD and ACWUA will coordinate the working group that will have overall responsibility for this activity. MAP and other partners will be responsible for leading the generation of data and information. The working group will determine the modalities for the establishment of the web-based knowledge portal.

Budget

The projected budget for this activity is US$ 100,000 each year.

Communication Needs

- Communicating the benefits of data-sharing and information exchange to holders of data and responsible authorities and regional institutions
- Requesting data and information from Arab member states
- Reporting progress in development to institutional stakeholders and end-users at the regular sessions of the AMWC Technical Scientific and Advisory Committee
- Disseminating information on the web-based knowledge portal to public and private stakeholders.

Obstacles

- Unable to obtain access to data
- Lack of sustainability in data-sharing
- Technical challenges and constraints, including issues affecting internet accessibility
- Budgetary limitations
- Sustainability of the regional knowledge portal beyond 2020
- Insufficient capacity of stakeholders to effectively benefit from the potential uses of the regional knowledge portal.

Progress Markers

- ✓ Available data and information collected
- ✓ Institutions mapped
- ✓ Web-based regional knowledge portal designed, hosted and established
- ✓ Functional portal online
- ✓ Number of countries linked to the portal
- ✓ Number of countries with access to the portal
- ✓ Number of stakeholders using the portal

D. Increasing Funding for Water Projects

Main activity D.1. Ensuring Funding for Water Projects

Low and middle income countries in the region have difficulties raising investment funds for water infrastructure necessary to meet social and economic needs. Part of the challenge is that investments in water infrastructure show low direct economic returns, generally offsetting external economic costs. The AMWC will support explorations with development banks, donors, and the private sector for new and alternative means and sources of funding for such crucial infrastructure, and commission studies to identify and prioritise the best social return on investment. This activity is expected to plan and practice best ways for ensuring funding for water projects of the Action Plan of the Arab Water Security Strategy. It should provide a mechanism for increasing the amount of funding available for water projects.

Relevant Strategic Objectives:

This component of the Action Plan is related to the sixth key themes of the Arab Water Security Strategy and to the main expected outcomes that emphasize on funding increase necessity for improving the implementation of the Integrated Water Resource Management (IWRM) approach as a main objective of the strategy.

Branch activity D.1.1. Exploring Investment Priorities

With limited financial resources, low and middle income Arab countries need to carefully prioritise water investments. Even rich nations need to be able to prioritise water investments for long-term economic growth and sustainability. On behalf of the AMWC, ACSAD and the AWC will commission studies in four low and middle income countries to determine the social and economic costs arising from water infrastructure, and identify and prioritise sectors and technologies for water investments. Results will be presented and disseminated to national governments, the AMWC, donors, and private sector partners.

Outputs

- Identification of investment priorities in the water sector

Targets

- Studies on social and economic prioritisation conducted in four countries after two years of the approval of the Action Plan
- Assessment of on-going national water projects; scale, funding situation and size of funding is reported

Implementation Principles

- Public consultation and participation: each national study will hold series of focus groups to explore social and gender dimensions of investment priorities
- Partnerships: each national study will be conducted by national researchers and research institutions, aimed at the AMWC's partnership audience.

Implementation Modality

- The methodology for conducting this activity will relay on existing national studies, cooperation and coordination with national institutes and research centres. Involving stakeholders and experience sharing is essential.

Institutional Arrangements

ACSAD to commission studies from national research institutes on behalf of AMWC. The AWC, ESCWA and RAED will contribute in setting the approach, planning and conducting the work.

Budget

The yearly estimated budget is US$150,000 for conducting this activity. The in-kind contribution of ACSAD is estimate at US$50,000 yearly. The total needed budget for three years is US$450, 000

Communication Needs

- With national experts and research centres and regional institutes and organisation.

Obstacles

- Analysis may not generate new knowledge
- Analysis may result in poor quality
- Analysis may not generate useable findings given financial and political constraints
- Lack of national support and backing up

Progress Markers

- ✓ Studies commissioned
- ✓ Studies completed as planned for
- ✓ Studies disseminated to AMWC, national ministries and partners
- ✓ Findings discussed in AMWC sessions
- ✓ Studies referred to in national, AMWC, or donor policy documents

Branch activity D.1.2. Identifying Alternate Funding Mechanisms

As water investments return low direct economic benefits, and generally mitigate external costs, they are unattractive to private sector investment. However, low to middle income Arab countries face difficulties in financing big water investments. Alternative funding mechanisms could define the kind of instruments that could ensure funding source to cover needs that are difficult to fund through traditional ways. This approach can be used as a strategy to generate more funding for implementing the Action Plan.

In developing countries, water resources project management can succeed very well if there is inter-sectoral coordination among the stakeholders, combined with community participation.

Based on a proper assessment of water need at the local level and the suitable technology to be applied in accordance to the local conditions, a social integrated way of funding can be propose to assure life cycle project management and sustainable water use.

Alternative funding mechanisms can assist in fulfilling unmet needs, providing additional options to generate funds, develop demand management techniques, and support multi-year project investment strategies.

Some alternative funding techniques can better allocate costs to those benefiting from the service thus increasing equity in provision of services. Others can increase accountability by clear allocation of funds, or increase flexibility and/or service levels through contractual arrangements or partnerships.

To make a successful approach, alternative funding methods should be proposed and described as an overview of how it works, with examples of methods application, potential and the limitations of the method.

To assure financial resources for implementing Action Plan project, funding/fundraising committee should be formed. Fundraising is an on-going activity; it requires a great deal of planning and attention to detail. A fundraising committee should develop a fundraising plan, identifying the amount of funds that are needed, what these funds will support, how such funds will be raised, who will be targeting for donations, etc. Careful planning and attention to details will stand a much greater chance of success.

The main responsibility of the Fundraising Committee is to acquire adequate financial resources to assure the delivery of the selected activities as determined in the Action Plan and ensure that the necessary human resources are in place to support specific fundraising initiatives.

As the Fundraising Committee begins to develop a fundraising plan, the first task is to review the water strategic action plan, goals and strategies of the AMWC. Once the Fundraising Committee has a clear picture of where the AMWC stands in terms of resources, needs, constraints, and capabilities, plan and budget can be drown. Research could be conducted to assure the perspective and insights needed to formulate a custom-tailored fundraising plan. The committee will provide a road map to the best available solutions for addressing funding issues and best practice description focuses on alternative funding. The plan should show Innovative funding sources or successful user-pay approaches to fund water projects and evidence of a formal process that gains public and special interest group input or support for funding requests.

A constant sharing of information and feedback between the Committee and the AWMC should be assured.

Once the funding plan is developed, a mobilized team should start implementing the plan, following up and evaluating the progress made for proposing an improved plan.

Resource requirements for 5 years should be defined for the approved projects of the Action Plan. Funding commitments by donors have to be made for these years, either cash or in-kind contributions (i.e. Technical Assistants).

Outputs

- seek to additional sources of funding outside the approved budgets

Targets

- Fundraising committee established with external partners on alternative approaches to financing water investments immediately after the approval of the Action Plan
- Draft Pan-Arab Water Investment Strategy developed during one year after the approval of the Action Plan and main funding streams are identified

Implementation Principles

- Support is provided to the working group of the fundraising committee at the national and regional level
- Continuous coordination between the AMWC, fundraising committee and national and international funding organisation
- The opportunity to tap into a wide range of sources of funding
- Funding to be allocated according to agreed priority list

Implementation Modality

- Developing a plan, tools and mechanisms for fundraising
- Setting alternative solutions and funding options
- Regional workshops
- International donor conference
- Guidance and advice on establishing effective local fundraising (local funding process)
- In accordance with the resource mobilization action, activities of the action plan can be carried out in collaboration with regional institutions and should centre on broadening the donor base
- Providing innovations and best practices approaches to be a decision-making and investment planning tool with options for developing innovative funding sources to meet Action Plan needs.
- Establish a special financial fund to finance the Action Plan projects

Institutional Arrangements

ACSAD and AWC will coordinate and establish network with the TS of the AMWC and funding bodies.

Budget

US$200.000 each year for conducting this activity

US$100.000 for the international donor conference

In-kind contribution is estimate at US$100, 000 each year

Communication Needs

- With all kind of funding bodies
- National and regional institution and research centres
- International and regional organisations

Obstacles

- Inability to identify alternative funding methods attractive to decision makers and stakeholders
- Facing constrains that could cause implementation difficulties
- Lack of regional and national support
- Commitment of the AMWC and countries

Progress Markers

- ✓ Working group established
- ✓ Funding and alternative funding plans are developed
- ✓ Alternative funding methods and techniques are identified
- ✓ Communication and project priority list is set
- ✓ Flow of fund is taking place for next 2 years
- ✓ Recommendations on the kind of funding models and mechanisms should be used for the Action Plan different projects.
- ✓ Recognition between cash and in-kind funding contributions and according suggestions
- ✓ Establish the special financial fund to finance the Action Plan projects

Main activity D.2. Supporting Arab States to Achieve MDG Goals and any Following Activities

The activities envisaged in this section are expected to lead to enhanced regional and national monitoring capacities in the area of data collection, management and monitoring on the adopted MDG+ indicators on water supply and sanitation.

The enhanced capacity will serve as a basis for informed decision-making on the needs, priorities and targets to realize the human right to water and sanitation in the Arab region. Additionally, it will also serve to inform national, regional and international policy dialogue and planning discussions on the adoption of regionally sensitive approaches for framing development targets in a post-MDG environment.

Relevant Strategic Objectives:

This component of the action plan is directly related to the second objective of the Arab Water Security Strategy, which emphasizes the provision of potable water and wastewater services in accordance with the MDGs.

Activities:

The proposed activities of the action plan on the MDG+ initiative is divided into four components and are elaborated below.

Branch activity D.2.1. Enhancing National and Regional Capacity in the Collection, Management and Control of the Drinking Water, and Sanitation Services Data

Outputs

The main output expected from this group of activities is a unified knowledge base for monitoring water and sanitation services in accordance with the MDG+ indicators and any following activities in the Arab countries. Informed national monitoring teams are expected to use the acquired knowledge to contribute to the regional database of comparable data on the level and quality of water and sanitation services in the different Arab States.

Targets

- At least 80% of the 22 Arab States are engaged in the MDG+ initiative and regularly report on progress to the MDG+ unit at ACWUA. Moreover, country reports follow the unified format agreed during the first training workshop.

Implementation Principles

- Each country has to assign a focal point to follow up and coordinate the work of the national monitoring team.
- The National monitoring teams need to be formally established at the country level to include the various stakeholders responsible for water and sanitation services.
- At the regional level, the MDG+ unit at ACWUA needs to be fully functional.
- Backstopping and support to the MDG+ unit, the national focal points and the national monitoring teams is expected from ESCWA.

Implementation Modalities

- Developing a methodology for data collection, management and analysis, which includes training materials for the elaboration of the indicators, methodology and data management at the national and regional levels.
- Holding a number of training and technical assistance workshops to build the capacity of the national monitoring teams and reach common understanding of the basic JMP indicators and the MDG+ indicators in accordance with the MDG+ questionnaire template approved by the Arab Ministerial Water Council (AMWC).
- Providing technical assistance and backstopping for the national monitoring teams on the collection and compilation of the MDG+ indicators, and implementing on-the-job training for selected countries through intra-regional exchanges on the MDG+ indicator collection process.

Institutional Arrangements

- ESCWA, AWC, CEDARE, RAED and ACWUA will coordinate the work of the national monitoring teams regarding water and sanitation services.
- ESCWA is to provide technical support for the MDG+ Unit.

Budget

Currently, the SIDA funded MDG+ project has an allocation of US$ 440,000 to support implement the planned activities in this project component until the end of 2015. In order to continue the MDG+ monitoring mechanism beyond 2015, additional funds of US$ 268,000 is needed to continue implementation of the relevant activities of this component of the project to cover the entire time period of the action plan.

Communication Needs

- Communicate with national focal points and monitoring teams for coordination, and with MDG+ unit at ACWUA on the regional scale.

Obstacles

- Given that the success of the MDG+ initiative and the continuation of its activities beyond the time frame of the SIDA funded project is highly dependent on the participation of the countries. Commitment of the countries to support the process and provide the necessary political and financial backing to their national monitoring teams is viewed as key to the sustainability of the MDG+ initiative and any following activities.

Progress markers

- ✓ Compilation and submission of the national data to the MDG+ unit on a regular basis is viewed as a signal of progress and an indicator of commitment by the countries.

Branch activity D.2.2. Establishment of a Regional Data Management Platform on Drinking Water and Sanitation

Outputs

- The main output expected from this group of activities is a data management system that will be installed at the MDG+ unit in ACWUA.

Targets

- The data management system is operational at ACWUA during one year of the approval of the Action Plan.

Implementation Principles

- ACWUA is to establish the MDG+ within its organizational structure. The unit needs to be fully equipped with the needed hardware and software, and be staffed with qualified personnel. Technical support for the unit is expected from ESCWA.

Implementation Modality

This platform will be used as a reliable tool to manage the data collected and support regular reporting on progress achieved on access, as well as the level, quality and type of access, to water supply and sanitation services in the Arab countries. Activities related to this component include:

- Design of a comprehensive data management system for the monitoring of the MDG+ indicators.
- Procure all the hardware and software requirements for the proper operationalization of the monitoring system.
- Dissemination of information on the project through establishing a website, which may be structured to provide user access to an on-line database for submitting and disseminating information collected on the indicators.

Institutional Arrangements

- ESCWA, CEDARE, AWC, RAED and ACWUA will support establishment of MDG+ unit
- ESCWA is to provide technical support for the MDG+ Unit.

Budget

The startup cost for establishing the data management system has been fully covered by the SIDA funded project. A total of US$ 55,000 has been allocated for the implementation of this component of the project. Regular upgrade of the data management system's hardware and software and the maintenance of project website for the additional 2-3 years beyond the current MDG+ project closing date will require an estimated additional funds of US$ 30,000.

Communication Needs

- Communicate with national focal points and monitoring teams for coordination, and with MDG+ unit at ACWUA on the regional scale.

Obstacles

- Like other components of the MDG+ initiative, sustainability of the activities beyond the project closing date is a valid issue that needs to be addressed during the remainder of the project period in order to reach alternatives to ensure continuation of the activities. Availability of additional funds to support the continuation of the activities is also an issue that needs to be discussed within the framework of funding the entire action plan of the strategy.

Progress Markers

✓ The number of Arab States that are actively engaged with the MDG+ initiative (compiling and sending their national data to the MDG+ unit on time and in accordance with the technical requirements of the system), is an indicator of the effectiveness of the data management system.

Branch activity D.2.3.Institutionalizing a Regional Level Monitoring Program

Outputs

- The main output of the above actions is the official establishment of the monitoring teams at the national level and the MDG+ unit at ACWUA. Creating the enabling environment that allows them to carry out their tasks in accordance with the requirements of the MDG+ initiative and any following activities is critical to the successful realization of the initiative's objectives.

Targets

- The national monitoring teams and the MDG+ unit are functional and produce biennial progress reports in accordance with the requirements of the MDG+ initiative and any following activities. This output is expected to continue beyond the closing date of the SIDA funded MDG+ project.

Implementation Principles

- Meetings of National Monitoring Teams on the national level for knowledge transfer and data consolidation.
- Provide technical and administrative support for the MDG+ unit.

Implementation Modality

- Review of existing data acquisition systems, which will be conducted through review of the current monitoring process for reporting on the water and sanitation related MDGs in Arab countries. The review is to be undertaken by the National Monitoring Teams based on existing data collection methods, methodologies, databases and household surveys used to collect and compile information on the existing MDG indicators at the national level.
- Complete the MDG+ questionnaire template at the country level, which will be conducted through regular meetings of the National Monitoring Teams and national level knowledge transfer and data coordination and consolidation. The MDG+ Unit would provide technical backstopping to support National Monitoring Teams, and may

contribute to their meetings at strategic points during the preparation of the national monitoring reports.

- Conducting pilot field surveys in selected countries to complement quantitative data collected on the MDG+ indicators from the National Monitoring Teams based on the MDG+ questionnaire template. These pilot field surveys are expected to contribute to the progress reports that are expected to be issued on biennial basis.
- Establish an MDG+ Unit to be responsible for coordinating with counterparts, providing technical assistance to national monitoring teams, leading data collection and knowledge management, and preparing and printing the regular reports on the MDG+ indicators. The MDG+ Unit will be based at ACUWA and will be staffed by a Technical Advisor, and receive technical backstopping from ESCWA on substantive matters. Part-time technical and administrative staff will also support the unit and report to the Technical Advisor.

Institutional Arrangements

ESCWA, ACSAD, AWC, CEDARE, ACWUA and RAED will contribute to water and sanitation policy-making through a monitoring mechanism to be implemented at the regional and national levels, and formalized through the submission of biennial progress reports to the AWMC.

Budget

Within the framework of the SIDA funded project a total budget of almost US$ 540,000 is allocated for the implementation of this component of the project. To continue the activities beyond the project closure date, as to match the timeframe of the action plan, additional funds of US$ 752,000 are required.

Communication Needs

➢ Communicate with national focal points and monitoring teams for coordination, and with MDG+ unit at ACWUA on the regional scale.

Obstacles

- The main obstacle associated with this component is related to the commitment of leadership of the water sector at the country level to support the national monitoring teams. This obstacle may be addressed through continued endorsement of the initiative by the AMWC.
- The availability of funds to continue the activities beyond the current project timeframe.

Progress Markers

✓ Sustained meetings of the national monitoring teams can be seen as an indicator of continued commitment at the country level.

Branch activity D.2.4. Strengthening Regional Dialogue on Drinking Water and Sanitation Services

Outputs

- The main output expected from this component is a streamlined MDG+ initiative that accounts for the current development at the global level, particularly in relation to the Sustainable Development Goals.

Targets

- To align the MDG+ initiative in accordance with the outcome of the current global discussions on the water goal in the post 2015 development agenda.

Implementation Principles

- Stakeholders' participation
- Expert consultation
- High-level meetings
- Post-MDG framework on water supply and sanitation

Implementation Modality

This will be achieved through a series of meetings that engage a variety of stakeholders in debate regarding the formulation and findings of the MDG+ indicators within the Arab regional context. The outcome of these meetings should also contribute to the global policy debate on the preparation and adoption of development objectives in a post-MDG environment after 2015. The main meetings included in the MDG+ project are as follows:

- A regional seminar to discuss lessons learned and exchange experiences on MDG+ indicators and preliminary findings with selected members of the National Monitoring Teams and regional stakeholders involved in the collection and compilation of information related to the MDG+ indicators.
- An expert group meeting – to discuss the MDG+ indicators, findings and lessons learned. The meeting will allow for inter-sectoral and multi-disciplinary discussion about the ways in which the MDG+ indicators and findings can contribute to discussions about a post-MDG framework in 2015.
- A high-level meeting on the MDG+ indicators in a post-MDG environment that aims to exchange and review lesson learned, to exchange policy recommendations and proposals for a post-MDG framework on water supply and sanitation based on the outcomes of the previous expert group meeting, and to solidify institutional mechanisms and processes for ensuring the sustainability of regional mechanism for the implementation of the MDG+ Initiative beyond project completion.

Institutional Arrangements

ESCWA, ACSAD, AWC, CEDARE, RAED and ACWUA will join efforts to organize the expert group meetings and regional seminars to create suitable environment for Dialogue.

Budget

The current MDG+ project has an allocation of US$ 260,000 to conduct the meetings mentioned above. It is envisaged that two additional meeting would need to be organized

beyond the end of the project (end 2015). The two proposed meeting is estimated at US$ 150,000.

Communication Needs

- Communication with experts and stakeholders for participating in the mentioned meetings

Obstacles

- Implementation of this component assumes successful implementation of the other preceding components (D.2.1 – D.2.2 – D.2.3 above). Therefore, the obstacles associated with those components are also valid for this component.
- Availability of the needed funds to conduct the above meetings is another risk that needs to be addressed within the overall funding of the action plan.

Progress Markers

- ✓ The number of meetings that are organized in the Arab region aiming to discuss the position of the Arab countries on the role of water within the post 2015 global development agenda is a relevant indicator for this component.
- ✓ The number of Arab countries participating and contributing to these meeting is also an indicator for this component.

E. Enhanced Capacity for Climate Chang Assessment and Adaptation

This expected accomplishment relates to Objective 4 and Theme 3 of the Arab Water Security Strategy aimed at: "Tackling climate change impacts on water resources in the Arab region, and adopting adaptation measures."

Climate change poses a significant challenge to efforts to achieve water security and sustainable development in the Arab region. The availability of and access to climate change projections and vulnerability assessments covering the Arab region are crucial to inform decision-making on climate change adaptation. No-regret measures pursued within the context of climate change adaptation can further contribute to the process of improving the integrated management of water resources and water security in the region. The building technical capacities and the fostering exchange within and between institutions can take place in parallel to the preparation of climate change impact projections and implementation of no-regret measures. The activities under this chapter therefore focus on improving the availability of information on climate change impacts and vulnerabilities and the capacity to assess that information, as well as strengthening policies and institutions for climate change adaptation in the Arab region.

Main activity E.1. Assessment of Climate Change Impacts on Water Resources

Climate change is an emergent threat that compounds the effects of growing population levels and economic pressures on water scarcity. The Arab region needs better information regarding the potential impacts of climate change on water resources in order to better target and implement climate change adaptation measures. Effective adaptation also benefits from improved understanding of biophysical, social, economic and institutional vulnerabilities exacerbated by climate change.

To address these needs, this activity will focus on strengthening capacity for the assessment of climate change impacts and vulnerabilities.

Branch activity E.1.1. Improving the Availability and Accessibility to Climate Change Information through the Establishment of a Regional Knowledge Hub

The establishment of a regional knowledge hub that is linked to national, regional and international information sources and climate change assessments outputs will increase access to information needed to inform climate change adaptation policies and measures. The regional knowledge hub will facilitate on-line access to the findings of the regional climate change impact and vulnerability assessments through a geographical information system (GIS) platform. Improved sharing of, and access to, regional and national information sources would stimulate new research on climate change trends and challenges facing the Arab region.

Outputs

- Establishment of a Regional Knowledge Hub

Targets

- Establishment of a regional knowledge hub during one year after the approval of the Action Plan
- 75% of Arab States contributing information to the regional knowledge hub after one year after the approval of the Action Plan
- 75% of Arab States with access to the regional knowledge hub after one year after the approval of the Action Plan
- 100% of Arab States contributing to and accessing regional knowledge hub after three years of the approval of the Action Plan

Implementation Principles

- Connection to other relevant Arab Strategies, Consultation and Public Participation and Partnership are insured in this activity.

Implementation Modality

- High-level endorsement and supporting resolutions and protocols on data-sharing and information exchange will be formulated by Arab Governments to solicit national input and linkages to the regional knowledge hub.

Institutional Arrangements

ESCWA will coordinate the team of partners that will have overall responsibility for this activity. ACSAD will be responsible for leading the assessment of climate and water resources monitoring systems and the collection of available climate and water data. UNEP will be responsible for the mapping of national and regional institutions engaged in climate change assessments and the preparation of national climate change communications. A working group will help to define the terms of references for a regional knowledge hub. The working group will be comprised of member State representatives in the Arab League, as well as institutional representatives from ACSAD, CEDARE, ESCWA, GIZ, LAS, UNISDR and UNU.

Budget

The projected budget for this activity is estimated at US$ 200,000 during one year of the approval of the Action Plan

Communication Needs

- Raising awareness of responsible authorities of the benefits of data-sharing and information exchange
- Obtaining data from national agencies and international sources
- Raising awareness of regional stakeholders about available knowledge resources
- Reporting on progress to the AMWC Technical Scientific and Advisory Committee and to regional experts.

Obstacles

- Unable to obtain access to necessary data
- Technical challenges and constraints
- Financial sustainability

Progress Markers

- ✓ Agreement on regional knowledge hub terms of reference
- ✓ Identification of regional knowledge hub host institution
- ✓ Launching of regional knowledge hub online platform
- ✓ Numbers of monthly users of regional knowledge hub

Branch activity E.1.2. Climate Change Impacts Assessments through an Ensemble of Regional Climate Change Impact Projections for Arab Region

General Circulation Models (GCMs) applied at the global level do not provide a sufficient level of detail to project climate change impacts at the regional level and are not adjusted to consider regional specificities. National-level climate change projections conducted by Arab countries can also not be consolidated to reflect Arab regional circumstances as they are based on different assumptions, scenarios and methodologies. Regional climate modelling applied across the Arab Domain provides a common basis for discussion of climate change impacts and adaptation at the Arab regional level. The application of an ensemble of two or more Regional Climate Models (RCMs) and hydrological models applied across the Arab Domain results in a set of projections that can be compared with one

another to generate a range of outputs that can reduce uncertainties and increase confidence in the findings generated by the modelling exercises.

Outputs

- Unified projection of climate change in the Arab region till 2100.

Targets

- An ensemble of regional climate change projections will be available by 2015.

Implementation principles

- Connection to other relevant Arab Strategies, Consultation and Public Participation and Partnership are insured in this activity.

Implementation Modality

- Activities led by regional institutions such as ACSAD with input from national and international scientific institutions, and regional and national scientific and expert group meetings.

Institutional Arrangements

ESCWA will have overall responsibility for coordinating this activity in close consultation with ACSAD and the Swedish Meteorological and Hydrological Institute (SMHI). ACSAD will support the preparation and analysis of the outputs of the regional climate models. SMHI will generate several regional climate modelling outputs. ESCWA will coordinate the assessment of climate impacts on water resources through inter-agency and inter-governmental contributions and consultations. The implementing partners will include ACSAD, ESCWA, SMHI, UNEP/ROWA, ICBA, UNESCO, UNISDR, WMO as well as regional, national and international climate centres.

Budget

The estimated budget for this activity is US$ 1.5 million during one year of the approval of the Action Plan.

Communication Needs

- Consultation with national partners regarding knowledge needs for regional climate modelling and hydrological modelling applications
- Consultation with regional and international experts over methods, approaches and outputs
- Dissemination of technical materials and policy briefs
- Reporting progress on delivery to the AMWC Technical Scientific and Advisory Committee and to regional experts.

Obstacles

- Unable to obtain access to necessary national data to support and verify the modelling outputs
- Insufficient number of partners interested and able to generate modelling outputs to inform the ensemble based on a common set of modelling protocols

Progress Markers

- ✓ National, regional, global and specialized institutions agree to contribute to the ensemble of regional climate projections generated for the Arab Domain based on a common set of protocols
- ✓ Climate change for key parameters projected to 2100
- ✓ Number of references to reports and outputs in Arab strategies and plans

Branch activity E.1.3. Identification of Expected Climate Change Impacts on Water Resources in the Arab Region from Additional Hydrological Modelling Outputs

Climate change impacts on water resources are expected to be felt differently in different locations throughout the Arab region. Integrating the results of regional climate models from Branch activity E.1.2 with hydrological models will provide assessments of climate impacts on water resources in specific river basins for a variety of hydrological parameters that are not sufficiently detailed in climate change projections.

This will require the identification and assemblage of appropriate data, indicators, hydrological models and pilot sites. Hydrological models will be calibrated and tested for specific river basins and driven by information generated by the regional climate modelling outputs. Efforts to consider effects on groundwater resources will also be pursued. This will in turn generate hydrological projections based on the same scenarios and assumptions used during the regional climate modelling exercise. Case studies will then be elaborated for selected pilot basins. Reports assessing the impact of climate change scenarios on hydrology and water resources will be prepared to disseminate the findings.

Outputs

- Reports on impact of the climate change on hydrology and water resources prepared

Targets

- Identification of data and models for specific basins during one year of the approval of the Action Plan.
- Models calibrated for different test basins during one year of the approval of the Action Plan.
- Hydrological and climate models linked and outputs generated during two years of the approval of the Action Plan.
- Case studies prepared for specific pilot basins during three years of the approval of the Action Plan.
- Hydrological impacts assessed during three year of the approval of the Action Plan.
- Assessment reports published after four years of the approval of the Action Plan.

Implementation principles

- Connection to other relevant Arab Strategies, Consultation and Public Participation and Partnership are insured in this activity.

Implementation Modality

- Activities led by regional institutions such as ACSAD with input from national and international scientific institutions, and regional and national scientific and expert group meetings and extensive peer-review verification.

Institutional Arrangements

ESCWA will have overall responsibility for coordinating this activity, with scientific inputs from ACSAD and SMHI. The Arab countries, ACSAD, ESCWA, GIZ, ICBA, WMO and RAED will contribute to the identification of data needs, indicators, test basins, pilot case study sites and support the preparation of the hydrological assessments.

Budget

The estimated budget for this activity is US$ 600,000 during four years of the approval of the Action Plan.

Communication Needs

- Consultation with LAS and national partners on selection of test basins and case study pilot sites
- Obtaining hydrological data from national agencies
- Consultation with regional and international experts over methods and approaches
- Dissemination of technical materials and policy briefs
- Reporting progress on delivery to the AMWC Technical Scientific and Advisory Committee and to regional experts.

Obstacles

- Unable to obtain access to necessary data
- Technical challenges and constraints
- Outputs of regional climate models from E.1.2 delayed
- Uncertainties in outputs reduce utility of results

Progress Markers

- ✓ Outputs of regional climate models integrated with hydrological models completed
- ✓ Assessments and case studies of climate impacts on water resources published
- ✓ Number of references to reports and outputs in Arab strategies and plans

Branch activity E.1.4. Assessment of Vulnerability Associated with Climate Change Effects on Water Resources

Water is a cross-cutting issue affecting all aspects of social and economic development in the Arab region. The impacts of climate change on water resources are therefore likely to have both direct and indirect effects on different economic sectors and different societal groups. Understanding these vulnerabilities is a crucial step towards strategic adaptation planning and reducing climate risk. Increasing evidence also suggests that institutions as

well as physical and socio-economic, dimensions influence vulnerability and that these need to be explored in the context of the Arab region. Spatial identification of vulnerability hotspots is also important for prioritising policies and actions.

Outputs

- Spatial identification of vulnerability hotspots.

Targets

- Development of integrated mapping and spatial informatics tools completed during two years of the approval of the Action Plan.
- Climate vulnerability assessments conducted for at least five key sectors during three years of the approval of the Action Plan.
- Identification of vulnerability hotspots completed during two years of the approval of the Action Plan.

Implementation principles

- Connection to other relevant Arab Strategies, Consultation and Public Participation and Partnership are insured in this activity.

Implementation Modality

- Activities led by ACSAD with input from national and international scientific institutions and expert group meetings. National and regional platforms and databases will be employed in the development of vulnerability assessments.

Institutional Arrangements

Activities will be coordinated by ESCWA with substantive contributions by a working group chaired by UNEP/ROWA and involving expert representatives from Arab States as well as institutional representatives from ACSAD, ESCWA, GIZ, ICBA, LAS, UNESCO, WHO as well as specialised regional and national institutions and research centres.

Budget

The estimated budget is US$ 750,000 for three years.

Communication Needs

- Linking experts with specialised institutions
- Obtaining data from national agencies
- Dissemination of technical and policy briefs
- Reporting progress on delivery to the AMWC Technical Scientific and Advisory Committee and to regional experts.

Obstacles

- Unable to obtain access to necessary data
- Technical challenges and constraints
- Insufficient engagement from national institutions
- Uncertainties in outputs reduce utility of results
- Insufficient capacity of end-users to effectively utilise outputs

Progress Markers

- ✓ Development of spatial informatics tool completed
- ✓ Publication of vulnerability assessment reports, technical materials and policy notes
- ✓ Referencing of published documents in Arab strategies and plans

Branch activity E.1.5. Support Integration of Water Resource Dimensions in National Climate Change Reports and Strategies of Arab States

The preparation of national communications submitted to the United Nations Framework Convention on Climate Change (UNFCCC) presents key opportunities to deliberate adaptation and policy responses, and to identify opportunities and needs for international support. Several Arab countries have either begun or finalised national climate change adaptation strategies and are generating policies for addressing adaptation priorities. Regional institutions and knowledge networks can help strengthen the integration of water resource dimensions in national communications and adaptation strategies.

Activities under this output will provide expertise from regional institutions to support the integration of water resource dimensions in national communications and adaptation strategies of Arab countries. The regional knowledge network supported under E.1.1 will also be engaged in this process and opportunities for exchange between national communication preparation teams will also be pursued.

Outputs

- Provide expertise to support the integration of water resource dimensions in national communications and adaptation strategies of Arab States.

Targets

- Regional knowledge network engaged in discussions on UNFCCC Communications during two years of the approval of the Action Plan.
- 100% of countries developed/updates water dimensions in national adaptation measures/strategies by 2020
- 100% of Arab States submitted their national communications by 2020

Implementation principles

- Connection to other relevant Arab Strategies, Consultation and Public Participation and Partnership are insured in this activity.

Implementation Modality

- A fund supporting the provision of technical cooperation between regional and national institutions and commissioning services from technical experts will be established to respond to requests from national agencies.

Institutional Arrangements

UNEP/ROWA will have lead responsibility, with support from ACSAD, GIZ, UNESCO, ESCWA, and other regional institutions. National authorities and government institutions will be responsible for identifying areas for engagement.

Budget

The estimated budget is US$ 1,000,000 by 2020.

Communication Needs

- Raise awareness of national agencies regarding opportunities for technical support
- Link regional technical experts with national agencies
- Dissemination of technical and policy briefs
- Reporting progress on delivery to the AMWC Technical Scientific and Advisory Committee

Obstacles

- Insufficient engagement from national institutions
- Financial sustainability

Progress Markers

- ✓ Number of regional experts engaged in support services
- ✓ Number of National Communications submitted to UNFCCC and National Adaptation Strategies revised
- ✓ Number of requests for repeat and follow-up services

Main activity E.2. Assessment of Climate Change Adaptation Measures and Integrating Climate Change Adaptation into Policies of Development of Water Sector

Adaptation to climate change in the Arab region is becomes a must, rather than an option to the countries of the region by adopting the notion of every drop account and needs to be mainstreamed into Arab countries development policies and strategies. Additional climate change pressures (real or perceived) can serve as an opportunity to promote much needed technological, socio-economic and institutional innovation and adaptation in the water sector. Climate change however is about pro-active, longer term and integrated planning and – if necessary - transformative development that address root causes of vulnerability, and strengthens human security and sustainability.

Branch activity E.2.1. Development of New Varieties of Crops Supporting Salinity and Drought

Agriculture production is considered for Arab countries as a hot and strategic subject. As is well known, about 75% of the cultivated areas in the Arab region are rainfed and about 60% of the population depends for its livelihood on these areas.

Climate change, through its negative impacts on agriculture and water resources (about 90% of the water is consumed in the agriculture sector) could damage strategic economic sectors and constitute a major threat to food and water security in the Arab region. In agriculture projected climatic changes will affect crop yields, livestock management and the location of production. The increasing likelihood and severity of extreme weather

events (flood, high variability in precipitation, heat waves, etc.) will considerably increase the risk of crop failure.

The nexus of water, energy and food should be considered if we need for the region to access to the green economy and have sustainable development policy. In this case there is a need to look for renewable energy as a source of supply.

To address these needs, this activity will focus on testing and developing new approaches for strengthening capacity of the Arab countries to face the impacts of climate change. Activities will support the development of new varieties of crops supporting salinity and drought, development of the use of non-conventional water resources and water treatment with focus on renewable energy, introduction of renewable energy in agriculture production, integrated water and land planning.

Since water availability will be reduced due to climate change impacts and growing demand for water supply, fresh water availability for agriculture production will be progressively reduced. The countries of the region will be asked to use more and more saline water. The same applies for drought which is expected to increase in frequency under climate changes. Both issues could contribute to increase soil salinity and affecting agricultural productivity. Attempts have been made to develop new crops that are more tolerant to salinity and drought /or to identify crops that can be adapted to more severe conditions.

Technologies to develop new crops range from classical breeding programs to biotechnology methods and gene transfers. During the last few years many salt/drought tolerant crops and vegetables have been developed for cultivation under such conditions. There also exists potential to develop crops adapted to the highest salinity levels (sea water salinity) as well where few production systems can be sustainable. Improved crop varieties and other salt and drought tolerant plants have to be introduced into production systems, whether through natural selection or modern technologies.

Outputs

- Develop crops adapted to the highest salinity levels

Targets

- By 2025 less than 75% of available fresh water in the region is used in agriculture
- A data base of identified and tested varieties for the region will be established during two years of the approval of the Action Plan.
- By 2020 about 10 Arab countries are using the new varieties tolerant to salinity and drought
- All the Arab countries has access to the regional data base and exchange information and experience by 2020

Implementation Principals

- Connection to the Arab national strategies
- Complete partnership between concerned regional and national institutions
- Accessibility of data to the public

- Building partnership with private sector

Implementation Modality

- Teams from concerned regional and national institutions will be involved in planning and implementing activities.

Institutional Arrangement

International Center for Bio saline Agriculture (ICBA) will coordinate the team of partners for implementing the planned activities and reporting to the Arab Water Ministerial Council (AWMC). ICBA will be responsible of building and managing the data base. The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) will be in charge of testing selected varieties ,mainly for cereals production .A steering committee, heading by ICBA, of partners(including selected experts and from private sector) will be in charge of defining and planning activities and follow up.

Budget

The projected budget is estimated at 1,000,000 US$ for 5 years.

Communication Needs

- Reporting about progress achieved to the technical committee of the Arab Water Ministerial Council
- Raising awareness in the Arab countries about the importance of the use of the new varieties
- Raising awareness for encouraging concerned national research centers and private for more collaboration.
- Building partnership with international concerned research centers and organizations (FAO, ICARDA, etc)

Obstacles

- limited cooperation with Arab national concerned institutions
- Sustainability of funds
- Technical and administrative constraints for conducting research experiences in some Arab countries.

Progress Markers

- A certain number of Arab countries and regional/international organization agree to collaborate
- A new varieties are selected and tested
- Progress reports to the Technical committee of the AWMC

Branch activity E.2.2. Develop Alternative and Practical Solutions for Using Non-conventional Water Resources with Focus on the Use of Renewable Energy in Water Desalination and Water Treatment as a Promising Solution to Close the Arab Region Water Gap

Expected climate change impacts on water resources, continued demographic and economic growth will require expanding water supply through alternative water production methods such as water desalination and reuse of treated wastewater. The widespread dissemination of the use of non-conventional water resources (NCWR) will be dependent on the development of local capacity for making the technology affordable and environmentally friendly. Especially for reducing the cost of energy consumption (which accounts for 30-50% of the overall costs of water desalination).

Many of the problems related to desalination expansion could be reduced by replacing fossil fuels with renewable energy sources. The region's tremendous potential for renewable energy (especially solar and wind) is progressively finding its way into national energy strategies. Morocco is expanding its wind and solar power generation capacity and plans to obtain 42% of its electricity from renewable sources by 2020.Saudi Arabia is planning to use solar energy to generate 10% of its electricity needs by 2020 -a total of 5 Giga watts and the United Arab Emirates launched a solar park that will be worth 1,000 megawatts by 2030.The huge potential for renewable energy in the Arab region could also be harnessed to generate export revenue from green electricity, industrial diversification and new skills creation.

By making the strategic choice to expand the use of renewable energy and non-conventional water resources, Arab countries are opening new possibilities for responding to the region's severe water scarcity and climate change impacts while taking into account cost-effectiveness, environment sustainability and energy security.

Outputs

- Expand water supply through alternative water production methods such as water desalination and reuse of treated wastewater.

Targets

- Developing practical solutions for using NCWR including desalinated water and treated waste using renewable energy for alternative water production.
- Building a regional knowledge hup regarding all aspects of NCWR, with focusing on renewable energy linked to regional and international concerned research centers and organizations.
- All the Arab States are contributing and accessing regional knowledge hup.
- Building the capacity of concerned institutions for the expending of the use of NCWR.

Implementation Principals

- Connection to the national strategies
- Full partnership with private sector
- Cooperation with national , regional and international appropriate institutions
- Conducting consultation workshops with identified potential partners.

Implementation Modality

- A team from appropriate national, regional and international institutions will be commissioned for planning and follow up

Institutional Arrangements

A national institute from one Arab country having experience in this field (also possible UNEP/ROWA) will have lead responsibilities for coordinating the implementation of this activity, assisting by ICBA and ACSAD. The establishment and management of knowledge hub will be the responsibility of the national nominated institute. A project steering committee from participating institutions will be in charge for follow up the implementation.

Budget

The projected budget is estimated at 500,000 US$ for three years.

Communication Needs

- Raising awareness about the relevance of the use of renewable energy
- Raising awareness about the relevance of the use of treated water
- Reporting on progress achieved to the technical committee of the AWMC
- Building partnership with private sector

Obstacles

- Technical challenges
- Full commitment of concerned national institutions
- Financial sustainability

Progress markers

- ✓ Progress reports to the technical committee of the AWMC
- ✓ Many countries adopt the use of renewable energy in desalination and wastewater treatment

Branch activity E.2.3. Introduction of the Water, Energy and Food Security Nexus. A Promising Solution for a Green Economy in the Arab region

Improved water, energy and food security can be achieved through a nexus approach – an approach that integrates management and governance across sectors and scales. A nexus approach can also support the transition to a Green Economy, which aims, among other things, at resource use efficiency and greater policy coherence and goes beyond sectoral solutions. Given the increasing interconnectedness across sectors and in space and time, a reduction of negative economic, social and environmental externalities can increase overall resource use efficiency, provide additional benefits and secure the human rights to water and food.

Climate adaptation measures, such as intensified irrigation or additional water desalination, are often energy intensive. Thus climate policies can impact on water, energy and food security, and adaptation action can in fact be maladaptive if not well aligned in a nexus approach and implemented by appropriately interlinked institutions.

Outputs

- Improvement of water, energy and food security through a nexus approach–an approach that integrates management and governance across sectors and scales.
- Support the transition to a Green Economy.

Targets

- Improvement of energy efficiency in the water sector by 30 %, after five years of the approval of the Action Plan
- Development of the energy-contracting model in the water sector
- Introduction of renewable energy farming at the national level
- Development of a new market for the private sector on energy management
- Reduction of a greenhouse gas emission.

Implementation Principals

- Connection to Arab Strategies in response to climate adaptation
- Public consultation and participation of different stakeholders including private sector
- Inter sectoral partnership

Implementation Modality

- Activities led by regional institutions with input and contribution from national, regional and international institutions. Workshops and scientific meetings will be organized for exchanging knowledge and expertise.

Institutional Arrangements

UNEP/ROWA will have overall responsibility for coordinating this activity with scientific inputs from GIZ, ESCWA, ICBA and FAO.

Budget

The estimated budget for this activity is US$ 300,000 extended for three years

Communication Needs

- Raising awareness of responsible authorities, public, private sector, media of benefits of the nexus to the country, region and the world.
- Holding workshops , conference for dissemination of knowledge
- Reporting to the technical committee of the AWMC.
- Editing reports and leaflets.

Obstacles

- Limited cooperation of concerned national institutions
- Accessibility to the information
- Financial stability

Progress Markers

- ✓ Progress reports to the technical committee of the AWMC
- ✓ Recommendations adopted by the countries
- ✓ Number of workshops and meetings
- ✓ Publications and reports

Branch activity E.2.4. Develop Innovative and Attractive Measures for Increasing the Reuse of Treated Water in Agriculture

Agriculture is considered to be the top consumer of water resources, with a share of about 90% of available water resources in Arab States. In most Arab States, the chronic imbalance between available water supply and demand is expected to increase in the future, unless major positive steps are taken to rationalize and manage water demand, augment water supply, and impose realistic controls on water use. Extended reuse of reclaimed wastewater is thus perceived to hold great potential to considerably reduce water scarcity especially when designed to be a part of an integrated water resources management approach.

The successful and efficient reuse of treated wastewater, particularly in agriculture will depend on a multitude of strategies, which include:

1. Increasing the reliability of reclaimed water as an alternative source to groundwater in irrigation
2. Improving public awareness and attitudes towards reclaimed water
3. Setting national public health and environmental standards for reuse

4. Implementing effective utilization plans in terms of increasing crop value and groundwater conservation.

The selection of technologies should be environmentally sustainable, appropriate to the local conditions, acceptable to the users, and affordable to those who have to pay for them.

Outputs

- Hold great potential to considerably reduce water scarcity

Targets

- Provide the scientific, financial and legislative basis to encourage Arab states to expand the reuse of treated wastewater and agricultural drainage.
- Raise awareness of the local population with regards to the reuse of treated wastewater and agricultural drainage.
- Develop a platform of dissemination of lessons learned from existing facilities in the Arab region and outside.
- Coupling renewable energy with water treatment will provide win-win systems for securing sustainable water resources while decreasing treatment cost and ensuring energy security.
- Building a partnership with private sector

Implementation Principles

- Connection to the national Arab water strategies
- Building partnership and consultation mechanism with concerned stakeholders for defining key opportunities and priorities at national and regional levels.
- Organizing workshops and meetings for knowledge dissemination
- Full cooperation with national and international concerned institutions

Implementation Modality

- Activities led by regional institution with input contribution from national, regional and international institutions through experts group meetings, workshops, etc.

Institutional Arrangements

ACSAD, FAO/RNE and ICBA will have the overall responsibility for coordination this activity with scientific contribution from all the concerned institutions in the Arab region and outside could provide their scientific contribution.

Budget

The estimated budget for this activity is US$ 600000 extended for four years.

Communication Needs

- Consultation with AMWC Technical Scientific and Advisory Committee
- Consultation with regional and international experts over methods and approaches
- Dissemination of technical materials and policy briefs

- Reporting progress on delivery to AMWC Technical Scientific and Advisory Committee
- Reporting progress on delivery to the national institutions and to regional experts.

Obstacles

- Technical challenges and constraints
- Financial stability
- Unable to build cooperation with concerned partners

Progress Markers

- ✓ Progress reports to the technical committee of the AWMC
- ✓ Recommendations up taken by the countries
- ✓ Number of workshops and scientific meetings
- ✓ Publications and reports

Branch activity E.2.5. Promoting Integration of Land and Water Management

Mismanagement of land and water has aggravated pressures on arable lands, threatened their environmental sustainability.

The interconnectedness of water and land and the relevance of these resources for sustainable development have been well-documented; yet, both resources are still largely managed as isolated policy issues in the Arab region and only limited research focuses on the numerous links between them. Integrated policy, planning and management of water and land resources, however, can provide improved benefits and create innovative opportunities for regional economic development by contributing to ecosystem stability, sustainable livelihoods and food security. A full integration management policy to enhance ecosystem productivity, thereby improving livelihoods, human well-being and economies is strongly requested.

Outputs

- Provide improved benefits and create innovative opportunities for regional economic development by contributing to ecosystem stability, sustainable livelihoods and food security.

Targets

- Development of viable integrated land and water management practices
- Provide the scientific, financial and legislative basis to encourage Arab states to adapt the integrated water and land planning management into their development plans.
- Coupling renewable energy with household planning process in urban and rural areas
- Defining the steps and institutional frame for promoting integration of land and water management approach in urban and rural areas

Implementation Principles

- Connections to national water strategies
- Consultation and public participation
- Partnership between national and regional institutions
- Holdings workshops and meetings for dissemination

Implementation Modality

- Activities led by ACSAD with full partnership and contribution from FAO/RNR, ICBA and national institutions through meetings and workshops.

Institutional Arrangements

ACSAD will have the overall responsibility for coordinating this activity with scientific contribution from FAO/RNA, UNEP/ROWA and ICBA. All the national concerned institutions, regional and international organization are welcomed to contribute to this activity through their own experiences. A launching workshop will be organized in the beginning to define tasks, roles and contributions.

Budget

The projected budget for this activity is estimated at US$ 600000 for four years.

Communication Needs

- Raising awareness of responsible authorities , private sector, local communities of the benefits of integration of land and water management approach and necessity of information exchange
- Disseminating results, case studies and lessons learned through workshops and conferences.
- Consultation with regional and international experts over methods and approaches
- Reporting on progress to the AMWC Technical Scientific and Advisory Committee

Obstacles

- Limited cooperation with concerned institutions
- Technical challenges and constraints
- Financial sustainability

Progress Markers

- ✓ Progress reports to the technical committee of AWMC
- ✓ Full participation of all concerned institutions
- ✓ Numbers of workshops and conferences and countries participation
- ✓ publications and reports

Branch activity E.2.6. Identification of Expected Climate Change Impacts on Irrigation in the Arab Region from the Simulation of the Irrigation Water Use and Crop Management Practices

The Arab region is characterized by a strong hydro climatic and inter-annual variability and 90% of the water in the Arab region is used for agriculture. Most of the water used for irrigation comes from nonrenewable or semi renewable aquifers. The declining groundwater levels in the Arab region increase the need for analysis tools that can be used to evaluate water used for irrigation at regional scale.

Our goal is to provide an integrated comprehensive land surface modeling framework by combining remote sensing, agriculture management and advanced land surface tools in order to generate physically consistent estimates of water used for irrigation at a national scale for all Arab countries and assess the direct impact of the climate change on such resources.

The irrigation code of the land surface model can be driven with the information generated by the regional climate modeling from Output E.1.2. Such coupling will provide direct assessments of climate impacts on the amount of water requested for irrigation.

This will in turn generate irrigation water use projections based on the same scenarios and assumptions used during the regional climate modelling exercise. Reports assessing the impact of climate change scenarios on irrigation water use will be prepared to disseminate the findings.

Outputs

- Reports assessing the impact of climate change scenarios on irrigation water use will be prepared to disseminate the findings.

Targets

- Identification of data and models for a specific country during one year of the approval of the Action Plan
- Models calibrated by generating one year atmospheric reanalysis for a specific country during one year of the approval of the Action Plan
- Intensity irrigation maps and land use maps generated for all Arab countries during three year of the approval of the Action Plan
- Irrigation and climate models linked and outputs generated during three year of the approval of the Action Plan
- Assessment reports published during three year of the approval of the Action Plan

Implementation Principles

- Connection to other relevant Arab Strategies, Consultation and Public Participation and Partnership are insured in this activity.

Implementation Modality

- Activities led by regional institutions with input from national and international scientific institutions, and regional and national scientific and expert group meetings and extensive peer-review verification.

Institutional Arrangements

ACSAD will have overall responsibility for coordinating this activity, with scientific inputs from FAO/RNE and SMHI. ACSAD, FAO/RNE and SMHI will contribute to the identification of data needs, indicators, pilot case study sites and support the preparation of the hydrological assessments.

Budget

- The estimated budget for this activity is US$ 600,000 during three year of the approval of the Action Plan.

Communication Needs

- Obtaining agriculture and precipitation data from national agencies
- Consultation with regional and international experts over methods and approaches
- Dissemination of technical materials and policy briefs
- Reporting progress on delivery to the AMWC Technical Scientific and Advisory Committee and to regional experts.

Obstacles

- Unable to obtain access to necessary data
- Technical challenges and constraints
- Outputs of regional climate models from E.1.2 delayed
- Uncertainties in outputs reduce utility of results

Progress Markers

- ✓ Irrigation and land use maps for the Arab region completed
- ✓ Outputs of regional climate models integrated with land surface and irrigation models completed
- ✓ Number of references to reports and outputs in Arab strategies and plans

Branch activity E.2.7. Climate Proofing for Development and Risk Reduction

While there are growing national activities in the Arab region in planned adaptation by state organizations and international donors and as well as climate research and government institutions, adaptation to climate change in the water sector has not yet become an integral part of national water sector strategies. Even in cases where climate change adaptation has been addressed in national legislation, implementation of measures and enforcement of regulations is often lacking.

The Intergovernmental Panel on Climate Change (IPCC 2007) concluded that the consideration of climate change impacts at the planning stage is key to boosting adaptive capacity. Climate proofing is one of the tools for incorporating climate change into planning procedures at national, sectoral, local, and project level that is increasingly applied in countries around the world. Climate Proofing for Development is a methodological approach aimed at incorporating issues of climate change into development planning. It enables development measures to be analyzed with regard to the current and future challenges and opportunities presented by climate change.

Outputs

- Incorporating issues of climate change into development planning
- Evaluate development measures with regard to the current and future challenges and opportunities presented by climate change.

Targets

- Assist Arab countries in developing robust water investments that are resilient to climate variability and change, for ensuring their long-term sustainability
- Integrate climate change adaptation effectively into project planning/project development to reduce additional workload and costs,
- Preparing guidelines and manual for climate proofing water investments

Implementation Principles

- Connection to national water strategies
- Involvement of all concerned stakeholders in the process (public and private sector, Media, NGO, s and civil society).
- Organization of workshops and meetings for training and dissemination

Implementation Modality

- Activities will be led by regional institution in partnership with national institutions, private sector and scientific inputs from regional and international expertise. A regional and national workshops will be organized for dissemination and training.

Institutional Arrangements

The Arab Water Council (AWC) will take lead responsibility in coordinating this activity. Additional inputs and scientific and technical support from regional and international institutions are welcomed.

Budget

The estimated budget is US$ 450,000 for three years

Communication Needs

- Raising awareness of responsible authorities, private sector, local communities of the benefits of climate proofing process.
- Dissemination of technical and policy briefs on climate proofing approach as adaptation and good practices
- Reporting progress on delivery to the AMWC Technical Scientific and Advisory Committee

Obstacles

- Insufficient engagement from national stakeholders
- Sustainability of funds

Progress Markers

- ✓ Number of national institutions involved and number of participants
- ✓ Number of guidelines and manual on best practices on climate proofing published
- ✓ Number of training workshops organized.

Branch activity E.2.8. Building Capacity of Arab States to Access to Climate Finance for Adaptation in the Water Sector

At the international climate conference in 2010 in Cancun in Mexico, developed countries restated their commitment to mobilize $100 billion annually for climate change mitigation and adaptation activities in developing countries from 2020 onwards, after providing $30 billion of fast-start resources in the period 2010 – 2012.

Climate finance has already become a relevant topic for national governments in developing countries today, as it offers opportunities for accessing funding for the planning and implementation of adaptation and mitigation measures. Given the vulnerability of the water sector in the Arab region and the fact that the sector already faces challenges in funding the required measures to cope with existing water scarcity, climate finance for adaptation measures in the water sector is specifically relevant to Arab countries.

The adaptation measures required in the region to address the expected impacts of climate change would require significant additional investments. Some countries in the region are already accessing some international climate finance for adaptation measures in the water

sector through multilateral and bilateral channels. However, challenges remain with respect to accessing international climate finance and using funds effectively and efficiently.

Moreover, to manage and implement funds effectively there is a need for a robust projects and programmes to be funded, which should be aligned to national and sectoral development goals and strategies, and for gaining a good understanding of how international climate finance can complement funding from national budgets and other financial resources.

Outputs

- Support Arab States to obtain international finance to adapt climate change in water sector

Targets

- Strengthening the capacity of Arab States for accessing international climate adaptation funds.
- Building institutional framework and good financial governance
- Prepare training tools and manuals for accessing climate change adaptation finance

Implementation Principles

- Connection to national water strategies
- Partnership with public and private sector
- Provide knowledge and support to all Arab countries
- Organization of workshops and meetings for training and dissemination

Implementation Modality

- Activities will be led by a regional institution with scientific contribution from GIZ and in full cooperation with national institutions. A training manual / guidelines will be prepared to be used in training and dissemination. Regional and national training workshops will be organized.

Institutional Arrangements

Arab water Council will take the lead for coordinating activities with technical and financial support from GIZ. National institutions will be in charge of disseminating the outputs.

Budget

The estimated budget is US$ 300٫000 for three years

Communication Needs

- Raising awareness of national agencies, private sector, local communities of the benefits and opportunities climate funds.
- Dissemination of technical and policy briefs on climate finance approach as adaptation and good practices.

- Reporting progress on delivery to the AMWC, Technical Scientific and Advisory Committee

Obstacles

- Insufficient engagement from national institutions and different stakeholders
- Fund sustainability

Progress Markers

- ✓ Publication of guidelines on climate finance
- ✓ Number of training workshops
- ✓ Number of institutions participating
- ✓ Number of request from countries for technical support

Branch activity E.2.9. Reforming Policy, Legislation and Institutional Frame

The most essential and challenging task for policymakers is to create an enabling environment for adaptation to climate change on all levels. As climate change imposes a new challenge, the political, legal and institutional frameworks need to be assessed and adjusted to allow for climate change adaptation. At the same time, it has to be ensured that existing policies are implemented and legal frameworks are enforced.

Climate change adaptation should be integrated in the development of planning, programmes and budgeting across a broad range of economic sectors, through mainstreaming and the establishment of effective and stable adaptation policy frameworks.

In most of the Arab countries current responses to climate and other pressures and acute crises (e.g. droughts) are often limited to emergency and coping measures that are only short-term and reactive. This approach should be urgently replaced by a new which look to the adaptation process as integrated management one. Accordingly, policies, strategies and action plans in other water-related sectors should be carefully screened for opportunities to mainstream climate change adaptation into water management. Governments should ensure that all existing policies are in line with the requirements for adaptation to climate change and that existing sectoral polices do not conflict with and hamper adaptation in other sectors. The involvement of a broad range of sectors is needed to create and share a common understanding. While the National Communications to the UNFCCC of some Arab countries are generally cross-cutting - across disciplines and sectors – they are rather general and unspecific when it comes to concrete measures and target groups.

The National Water Plans in contrast are more specific about required measures and actors, but they lack the coordination with other sectors. Here it is worth noting that public participation in the Arab region started to be a generally accepted approach in water management.

Outputs

- Political, legal and institutional environment for adaptation to climate change.

Targets

- Create an enabling environment (political, legal and institutional framework) for adaptation to climate change on all levels.
- Assessing and improving legislation for adaptation
- Strengthening capacity, education and communication for achieving sustainable development.
- Building regional expertise for climate change adaptation policy

Implementation Principles

- Connection to national water strategies
- Partnership with public and private sector
- Provide knowledge , expertise and support to all Arab countries
- Organization of workshops and meetings for training and dissemination

Implementation Modality

- Building a consultation and partnership mechanism between national, regional and international institutions for providing expertise and advising countries is needed. Knowledge hub can be established for providing lessons learned and transfer international expertise to the Arab States.

Institutional Arrangements

A regional organization or consortium of regional organizations, AWC, ACSAD, ESCWA, UNEP/ROWA, and CEDARE can be established for sharing activities and tasks based on the expertise of each one.

Budget

The estimated budget is US$ 450000 for three years

Communication Needs

- Raise awareness of national agencies regarding opportunities for technical support
- Dissemination experiences and lessons learned
- Reporting progress on delivery to the AMWC Technical Scientific and Advisory Committee

Obstacles

- Insufficient engagement from national institutions
- Insufficient political will
- Financial sustainability

Progress Markers

- Number of regional organizations and national institutions engaged in support services
- Number of Arab countries requesting services and expertise
- Number of workshops and training activities

F. Establishing Establishing Tools for the Protection of Arab Water Rights in Shared International Water Resources

Main activity F.1. Protection of Water Rights for Arab States

Branch activity F.1.1. Promotion of Water Cooperation between Arab States: Establishing an Enabling Environment at the National Level

Expected accomplishment:

The activities envisioned in activities F.1.1 and F.1.2 are expected to contribute to ensuring the protection of water rights in shared water resources within the Arab region by strengthening cooperation between Arab countries in the management of their shared waters. The basis for this is institutionalizing the 'shared water' component at both the national and regional level to pave the way for effective cooperation modalities among Arab countries. This process would be made through the instigation of sound institutional directives, an appropriate legal framework and effective human resource development.

Relevant Strategic Objectives:

This part of the action plan directly relates to two objectives of the Arab Water Security Strategy which highlights the issue of strengthened cooperation among Arab States to manage shared water resources (objective 10), and calls for an enhanced cooperation and exchange of experience and information between Arab states (objective 16).

Outputs

- Institutionalizing shared water at the country level through policy integration and suitable institutional arrangements will form the basis for effective joint management of shared water resources at the basin level. In this context, capacity building is essential and will result in creating sufficient technical and managerial capability to operate and manage national institutions and to further succeed in regional negotiations and projects

Targets

- All newly developed national water strategies include a component related to shared water resources.
- National institutional structures specialized in the management of shared water resources with clearly defined roles and functions are created in at least 80% of Arab countries during three years of the approval of the Action Plan.
- Decision makers at relevant institutions of all Arab States undergo at least one yearly training or workshops on topics related to shared water resources or water diplomacy.

Implementation Principles

- Inclusion of shared water resources within national policies and strategies of the Arab States wishing to do so.

- Establishment of appropriate national institutional settings and structures for shared water resources in the Arab States wishing to do so.
- Enhancing national capacities at the institutional and human level on issues related to shared water resources.

Implementation Modality

- It is proposed to establish a national structure such as a committee including officials and professionals from key ministries in addition to representatives from the civil society, the private sector and academia. This committee would serve as an effective platform for national consultation to reach a common position among all concerned stakeholders and identify national priorities and concerns in the area of shared water resources management. Links with decision-makers at the sub-national and municipal levels should also be fostered to support consultative processes and facilitate implementation of associated agreement and projects, which are largely dependent on local-level ownership to be effective.
- Capacity building would be provided in the form of trainings and workshops on topics such as international water laws and principles, water conflicts and cooperation mechanisms, diplomacy and negotiation procedures.
- The donor community is a major contributor expected to assist in the implementation of all these activities.

Institutional Arrangements

Water institutions at the national level need to review their strategies, policies and plans regarding shared water resources.

The Center for Water studies & Arab Water Security, ESCWA and other organizations can provide technical support to the countries through the Technical Advisory Committee of the Arab Ministerial Water Council.

Budget

The estimated budget is US$ 500,000 for three years.

Communication Needs

- Communicate with states' representatives in the Technical Advisory Committee of the AMWC for coordinating the implementation of the above activities.

Obstacles

- The inability of states to establish effective operational institutional arrangements with clear roles
- The failure to allocate appropriate budgets for these institutions when they are established is the major risk and causes concerns by donors to continue their support on the long term
- The provision of trainings and workshops to ensure enhanced institutional capacities is highly dependent on the availability of funds

Progress Markers

- ✓ The creation of new national strategies in line with institutional reforms to reflect the shared water component.
- ✓ The degree of active participation of stakeholders in trainings and workshops offered is indicators of progress for this component

Branch activity F.1.2. Promotion of Water Cooperation between Arab States: Establishing an Enabling Environment at the Regional Level

Outputs

- Strengthen Arab cooperation in the field of management of shared water resources and encourage regional stability.
- Create incentives for more joint investigations on the resource, especially for shared aquifers where data is mostly lacking.

Targets

- Available national data on shared water resources are exchanged with the other riparian countries for at least of 50% of all identified shared water resources during 5 years after the approval of the Action Plan, leading to joint basin/aquifer data bases.
- The data on shared water bodies in the region is updated through joint institutional structures for basins where available hydrological/hydrogeological information is outdated.

Implementation Principles

- o Cooperation through joint management structures can be a gradual process, where within a shared aquifer or river basin, the initial step can constitute the establishment of joint technical committees before being eventually expanded to wider institutional structures like river basin organizations.
- o As a first step it is ideally proposed to establish two committees at the basin level: a technical committee to deal with the technical, legal and institutional issues related to the management of the shared resource and would propose recommendations to another higher level political decision-making committee composed of ministers of water resources from riparian countries for consideration and approval of those recommendations.
- o Information on the status of shared water resources could be updated through joint water assessment studies and inventories including the collection of hydrological/hydrogeological, water quality and socio-economic data. Here can take advantage of published studies about it by a number of specialized international and regional bodies. Outdated information could be updated with the assistance of academic and research institutions and this process would be facilitated through the supervision of joint authorities or committees created for this purpose.

Implementation Modality

- Development of cooperative mechanisms on shared resources between Arab States such as bilateral/multilateral agreements, joint technical committees or basin organizations to allow for the adoption of decisions and their proper implementation.
- Knowledge improvement on shared basins through in-depth water resources assessment studies in order to ensure informed and adequate decision-making.

Institutional Arrangements

The Center for Water Studies and Arab Water Security and ESCWA would support the process of adoption and ratification of the convention through intergovernmental meetings and promotion throughout the region.

With the lead of the Technical Advisory Committee of the AMWC, the Center, ESCWA, donor agencies and possibly other Arab regional organizations can contribute in the implementation of the activities of this component of the action plan.

Budget

The estimated budget is US$ 300,000.

Communication Needs

➢ Communicate with states' representatives in the Technical Advisory Committee of the AMWC for coordinating the implementation of the above activity.

Obstacles

- Availability of funds and facilities to conduct joint aquifer/basin level investigations could reduce additional risks that may hamper the full implementation of this component

Progress Markers

✓ Improvement of regional cooperation, in particular with regard to shared aquifers.

Branch activity F.1.3. Protection of Water Rights for Arab States: Water Resources Shared with Non- Arab States

Expected accomplishment

The activities envisioned in this section are expected to contribute to ensuring the protection of water rights in surface and ground water shared with non-Arab countries. Efforts are needed to support concerned Arab countries, whether through the provision of any available information on water use in upstream countries or through political pressure on upstream countries, to conclude final agreements for a fair and equitable allocation of shared water resources. Factors that can support reaching such agreements are enhanced institutional and human capacities and the establishment of information systems/data bases.

Activity F.1.3 of the action plan is based on item 8 the specific objectives of the strategy, key theme (5.8.1) and item 4 of the expected outcomes of the strategy. This part relates also to objectives 7and 8 dealing with the protection of water rights

Outputs

- The main output of the above actions is the official establishment of a regional database on shared water resources on a river basin or an aquifer level contained in the main activity A.1. and enhanced institutional and human capacity in managing shared water resources.

Targets

- Establishment of data bases on shared water resources in the framework of the main activity A.1. and enhancement institutional and human capacity in managing shared water resources
- Capacity building on management of the data bases, negotiation and water diplomacy and drafting international conventions
- Encourage the media to take part in defending the water rights in an appropriate way. Civil society organizations and academic institutions have a major role nationally and internationally in defending water rights
- Facilitating the support of the international community

Implementation Principles

- Cooperation through administrative structures agreed upon. It is initially proposed to establish joint technical committees that can be later turned into broader institutional frameworks responsible for all technical, legislative and institutional issues related to shared water resources management.

Implementation Modality

- Establishment of data bases on shared water resources in the framework of the main activity A.1.
- Conducting workshops and training courses for enhancing the institutional and human capacities in the area of international law, negotiation skills and water diplomacy
- Establishment of a national body of expertise in negotiation
- Establishment of study and research programs on international water law and water diplomacy in national universities and colleges

Institutional Arrangements

The Center for Water Studies and Arab Water Security, ACSAD, ESCWA and other international and regional organizations can contribute to the implementation of these activities under the leadership of the Arab Ministerial Water Council and in partnership with the Arab concerned States.

Budget

The estimated budget is US$ 500,000.

Communication Needs

- Communicate with states' representatives in the Technical Advisory Committee of the AMWC for coordinating the implementation of the above activity.

Obstacles

- Human, legislative, technical, institutional and financial challenges and constraints
- The political situation

Progress Markers

- ✓ Establishment of the databases on shared water resources with neighboring countries
- ✓ Organizing the required workshops and training courses
- ✓ Establishing the national body of expertise in negotiation
- ✓ Establishing the study and research programs on international water law and water diplomacy in national universities and colleges

Branch activity F.1.4. Protection of Water Rights for Arab States: Water Rights in Arab Occupied Territories

In the occupied Arab territories, Israel is depleting the water resources without regard to the water rights of the inhabitants of these territories.

Outputs

- Coordinated Arab efforts to activate and manage talks and negotiations with Israel on the water in the territories occupied by it
- Acquisition of the needed data and expertise to enhance the management of water resources
- Increasing international support for obtaining water rights in the occupied territories

Targets:

- Protection of Arab water rights in the occupied territories

Implementation Principles

- Enhancing Arab negotiation skills and water diplomacy through training courses and workshops
- Public diplomacy and support of civil society by organizing meetings for civil society and media to defend water rights
- Preparing documents, reports, books, films related to Arab water Rights
- Organizing international conferences to explain and defend water rights with the participation of high level international personalities and organizations
- Intensive participation of officials, civil society, academia and media in international forums and conferences to defend water rights
- Mobilize opportunities to obtain the support of the international community for the rights of occupied

Implementation Modality

The Center for Water Studies and Arab Water Security and the Arab Center for the Studies of Arid Zones and Dray Lands (ACSAD) can contribute to the implementation of this activity.

Institutional Arrangements

The Center for Water Studies and Arab Water Security, the Arab Center for the Studies of Arid Zones and Dray Lands (ACSAD), ESCWA and the Arab Net for Environment and Development (RAED) can contribute to the implementation of this activity under the leadership of the Arab Ministerial Water Council and in partnership with the Arab concerned States. Activities of political and diplomatic nature could be addressed by the concerned Arab States and the League of Arab States institutions.

Budget

The estimated budget is US$ 500,000.

Communication Needs

- Communicate with states' representatives in the Technical Advisory Committee of the AMWC for coordinating the implementation of the above activity.

Obstacles

- The political will either from the non-Arab States or from the Israeli occupying authority
- Availability of funds from Arab and international organizations is essential to the successful implementation of the identified activities
- The support of the international community is also essential to reach stability in the region and to encourage cooperation and the establishment of permanent agreements on fair and equitable allocation of water resource

Progress Markers

- ✓ Enhancing Arab negotiation skills and water diplomacy through training courses and workshops.
- ✓ Public diplomacy and support of civil society by organizing meetings for civil society and media to defend water rights
- ✓ Preparing documents, reports, books, films related to Arab water Rights.
- ✓ Organizing international conferences to explain and defend water rights with the participation of high level international personalities and organizations.
- ✓ Intensive participation of officials, civil society, academia and media in international forums and conferences to defend water rights.
- ✓ The number of the opportunities to obtain the support of the international community for the rights of occupied territories to their water resources

IV. Matrix

Work matrix of the Action Plan includes a description of all above activities in term of key specific elements:

- Actions – what will be done?
- Institutional arrangements – who will do them?
- Targets – when outputs will be delivered?
- Resources – what human and financial are needed or available to do them?
- Communication – who needs to be informed about what?
- Obstacles – factors that may jeopardise the activity, and how to mitigate them?