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“Sustainable Water Management through  
Common Responsibility enhancement in  
Mediterranean River Basins”

Assessment and Feasibility Analysis of the Action  
Plan for Water Management in the River Basin  
Area 8 of Cyprus



**May 2012**



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## 1. INTRODUCTION

Feasibility Analysis is made for HR8 of the River Basin of Cyprus which provides for the assessment on the engagement of resources, prioritise the activities described in the Action Plan, deals with risks and ensures the sustainability of the Action Plan. Evaluation – Feasibility Analysis is an essential component of the Action Plan and holds a critical role in the Plan's success.

## 2. EVALUATION CRITERIA

The evaluation criteria applicable to the implementation process that were used to identify the importance and the viability of each project are:

- **Estimated Budget:** estimated costs of the project. It must be remembered that this is only a summary estimate. The implementation costs ranges can be determined by each partner. Nevertheless it would be appropriate to maintain a common classification.
- **Funding Sources:** possible institutions or administrations where the economic resources needed to put the project in motion can be obtained.
- **Implementation timetable (*Provided from the feasibility analysis*):** time in which the project will be implemented and finalised. The implementation costs ranges can be determined by each partner. Nevertheless it would be appropriate to maintain a common classification.
- **Maturity:** status of the proposed actions (If it is ready to be applied or not, available studies, financed etc.)
- **Feasibility Degree:** real possibility of carrying out the action:
  - Low: actions which are not easily viable due to technical difficulties and/or high economic requirements.
  - Medium: actions which are moderately viable, with requirements which can be managed technically and economically.
  - High: highly viable actions which are not technically complex and are economically affordable.
- **Indicators:** measurable parameters which show the status of the project and degree of reaching the proposed goals at any given time.

### 2.1. TECHNICAL AND ECONOMIC VIABILITY

The Viability degree is defined as the real possibility to implement all the actions described in the Action Plan The viability could be expressed with the feasibility degree of the actions as well as their estimated budget.

All the projects described in the action plan should be evaluated and categorized in three feasibility ranges described below:

- Low: actions with low feasibility, due to technical difficulties or high budget requirements.
- Medium: actions with moderate feasibility, with affordable demands from a technical and economic viewpoint.
- High: actions with high feasibility, which don't involve technical complexity and are affordable from an economic viewpoint.

The economic resources and funding must be taken into account to implement the actions, since a **budget** has been estimated for every Project **partner**. Nevertheless it would be appropriate to maintain a common classification.

- Low: Less than  $\leq 10,000$  €
- Medium: Between 10,000 and  $\leq 50,000$  €
- High: Between 50,000 and  $\leq 100,000$  €
- Very High: Above  $> 100,000$  €

The feasibility degree is shown along with the estimated budget and the identification of Public Funding Orders available (if necessary) for the projects included in the Action Plan.

VIABILITY OF THE STRATEGY 1: DEMAND MANAGEMENT			
ACTION PROGRAMME 1.1. Demand Management in Urban Sector			
ACTION	FEASIBILITY DEGREE:	ESTIMATED BUDGET:	FUNDING SOURCES AVAILABLE:
1.1.1. Promote water saving appliances for government and home premises	MEDIUM	LOW	NATIONAL FUNDS
1.1.2. Installation of central flow meters to all Communities' domestic water supply network	HIGH	LOW	NATIONAL FUNDS
1.1.3. Reduce losses in water supply distribution system, especially in small communities	MEDIUM	HIGH	NATIONAL FUNDS
1.1.4. Increase water price to reflect full cost recovery	HIGH	LOW	NATIONAL FUNDS
1.1.5. Provide incentives for grey water use in sanitary appliances	MEDIUM	LOW	NATIONAL FUNDS
1.1.6. Provide incentives for borehole water use in Larnaca and Aradippou areas for gardening	MEDIUM	LOW	NATIONAL FUNDS
1.1.7. Optimise supply vs demand between dams and desalinated water	MEDIUM	LOW	NATIONAL FUNDS

VIABILITY OF THE STRATEGY 1: DEMAND MANAGEMENT			
ACTION PROGRAMME 1.2. Demand Management in Agricultural Sector			
ACTION	FEASIBILITY DEGREE:	ESTIMATED BUDGET:	FUNDING SOURCES AVAILABLE:
1.2.1. Control of abstractions with control and authorization of the many illegal boreholes	Medium	Low	National funds
1.2.2. Installation of flowmeters to private boreholes	Medium	Low	Private funds
1.2.3. Application of the new Law79(l)/2010 regarding the licensing of boreholes to reverse the trends of groundwater depletion in HR8	Medium	Low	National funds
1.2.4. Reduction in crop water requirements through the use of less water intensive crops	Medium	Medium	Private Funds
1.2.5. Expand the use of advanced irrigation systems to HR8	Medium	Medium	Private Funds
1.2.6. Promote effective use of water through the application of Best Irrigation Practices under drought conditions	Medium	Low	National funds
1.2.7. Give incentives to use the treated wastewater	Medium	High	National funds
1.2.8. Increase of cost recovery in agricultural sector	Medium	Low	National funds
1.2.9 Establishment of a central mechanism for the collection and use of revenues from the recovering of environmental and resource cost	Medium	Low	National funds
1.2.10 Enhancement of water balance with treated waste water for irrigation	Medium	Low	National funds

VIABILITY OF THE STRATEGY 1: DEMAND MANAGEMENT			
ACTION PROGRAMME 1.3. Demand Management in Industrial Sector			
ACTION	FEASIBILITY DEGREE:	ESTIMATED BUDGET:	FUNDING SOURCES AVAILABLE:
1.3.1. Provide incentives for reusing the industrial wastewater	Low	Low	National funds
1.3.2. Increase water cost recovery	Medium	Low	National funds
1.3.3. Promote water saving culture	Medium	Low	National funds

VIABILITY OF THE STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY			
ACTION PROGRAMME 2.1. Protection of Surface Water			
ACTION	FEASIBILITY DEGREE:	ESTIMATED BUDGET:	FUNDING SOURCES AVAILABLE:
2.1.1. Completion of the scheduled wastewater collection network expansion and the WWTP upgrading	Medium	Very high	National funds –European funds
2.1.2. Construction of common WWTP's in small communities	Medium	High	National funds
2.1.3. Register of all installations that impose a threat of pollution to water and soil and continuing of the licensing of these installations	Medium	Low	National funds
2.1.4. Use of technology for the collection and monitoring of water resources data, especially in the field of the collection and processing of agro-meteorological data in order to identify the crop irrigation demands depending on the irrigation system applied	Medium	High	National funds
2.1.5. Improve the quality of treated wastewater in HR8 by applying advanced treatment methods	Medium	High	National funds
2.1.6. Application of the Programme of Measures of the RBMP to improve the ecological status/potential of surface water bodies	Medium	Very high	National funds
2.1.7. Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of the RBMP in order to increase the percentage of the population served by WWTP	Medium	Very high	National funds
2.1.8. Allow for the ecological flow downstream of the Lefkara, Dypotamos and Kalavassos dams	Medium	Low	National funds

VIABILITY OF THE STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY			
ACTION PROGRAMME 2.2. Protection of Ground Water			
ACTION	FEASIBILITY DEGREE:	ESTIMATED BUDGET:	FUNDING SOURCES AVAILABLE:
2.2.1. Enhancement of water balance with treated waste water (aquifer recharge)	Medium	High	National funds
2.2.2. Completion of the scheduled wastewater collection network expansion and the WWTP upgrading	Medium	Very high	National funds- European funds
2.2.3. Construction of common WWTP's in small communities	Low	High	National funds
2.2.4. Application of the Programme of Measures of the RBMP to improve the status of groundwater water bodies	Medium	Medium	National funds
2.2.5. Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of the RBMP in order to increase the percentage of the population served by WWTP	Medium	Very High	National funds- European funds

<b>VIABILITY OF THE STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY</b>			
<b>ACTION PROGRAMME 2.3. Protection of the Environment</b>			
<b>ACTION</b>	<b>FEASIBILITY DEGREE:</b>	<b>ESTIMATED BUDGET:</b>	<b>FUNDING SOURCES AVAILABLE:</b>
<b>2.3.1.</b> Implementation of the National Action Plan to Combat Desertification measures in order to mitigate the desertification impacts on the affected areas	Medium	Medium	National funds
<b>2.3.2.</b> Completion and implementation of the Management Plans of the Natura 2000 areas	Medium	Medium	National funds
<b>2.3.3.</b> Application of the Programme of Measures of the RBMP to improve the ecological status/potential of surface water bodies	Medium	High	National funds
<b>2.3.4.</b> Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of the RBMP in order to increase the percentage of the population served by WWTP	Medium	Very High	National funds -European funds

<b>VIABILITY OF THE STRATEGY 3: DROUGHT MANAGEMENT STRATEGY</b>			
<b>ACTION PROGRAMME 3.1. Drought Management Plan</b>			
<b>ACTION</b>	<b>FEASIBILITY DEGREE:</b>	<b>ESTIMATED BUDGET:</b>	<b>FUNDING SOURCES AVAILABLE:</b>
<b>3.1.1.</b> Application of the Drought Management Plan (as integrated in the RBMP) to increase the degree of meeting the needs of irrigation, industrial and livestock demand	Medium	Low	National funds
<b>3.1.2.</b> Application of the DMP to decide on a) the degree of using water, b) the source of water for the various sectors and c) the level of the use of desalinated water.	Medium	Medium	National funds

VIABILITY OF THE STRATEGY 4: WATER SAVING AWARENESS STRATEGY			
ACTION PROGRAMME 4.1. Water Awareness Targeting Different Stakeholders			
ACTION	FEASIBILITY DEGREE:	ESTIMATED BUDGET:	FUNDING SOURCES AVAILABLE:
4.1.1. Promote existing water saving measures	High	Medium	National funds
4.1.2. Increase public awareness and participation in water management and protection for farmers through small informative workshops and specially designed leaflets	High	Medium	National funds
4.1.3. Promote educational programs to increase public awareness in water management and protection of the environment for farmers, touristic industry, for households and for industry	High	Low	National funds
4.1.4. Send information leaflets on water saving for adults, through water billing services	Medium	Medium	National funds
4.1.5. Prepare an internet site and an interactive education programme on environmental protection, water inclusive, for school children	Medium	Medium	National funds
4.1.6. Continue the education of children at school through specially designed PowerPoint presentations made by WDD	High	Low	National funds

VIABILITY OF THE STRATEGY 4: WATER SAVING AWARENESS STRATEGY			
ACTION PROGRAMME 4.2. Education on Water Issues			
ACTION	FEASIBILITY DEGREE:	ESTIMATED BUDGET:	FUNDING SOURCES AVAILABLE:
4.2.1. Provide information on water issues through the media, Agrotis magazine, articles in the newspapers, interviews on radio and television. Such issues include and are not exhausted to desalination, quality and reuse of treated wastewater, methods of conservation of water in households and irrigation, developmental water projects and their operation and management, protection of the environment, etc.	Medium	High	National funds
4.2.2. Provide adequate information on water issues and LA21 principles to the HR8 inhabitants through local meetings and social discussion	Medium	Low	National funds



VIABILITY OF THE ENVIRONMENTAL AGREEMENT			
ACTION PROGRAMME A: POTABLE WATER SAVING			
ACTION	FEASIBILITY DEGREE:	ESTIMATED BUDGET:	FUNDING SOURCES AVAILABLE:
Install water saving devices at Community level	High	Low	National funds, Private funds

## 2.2. PRIORITIZATION

Priority of actions included in the Action Plan is defined as the level of urgency to implement such actions.

All the projects identified in the action plan could be categorized in the following priority ranges:

- Low: not essential actions but imply an important support of the environmental status of the basin under study.
- Medium: basic actions for the status's improvement of the basin under study.
- High: actions considered very important for the improvement of the basin under study.
- Very high: indispensable actions, due to a mandatory normative or to correct an important environmental deficiency in the basin under study.

Each project described in the action plan should be categorized based on the previous classification.

VIABILITY OF THE STRATEGY 1: DEMAND MANAGEMENT	
ACTION PROGRAMME 1.1. Demand Management in Urban Sector	
ACTION	PRIORITY
1.1.1. Promote water saving appliances for government and home premises	High
1.1.2. Installation of central flow meters to all Communities' domestic water supply network	High
1.1.3. Reduce losses in water supply distribution system, especially in small communities	Medium
1.1.4. Increase water price to reflect full cost recovery	Medium
1.1.5. Provide incentives for grey water use in sanitary appliances	Medium
1.1.6. Provide incentives for borehole water use in Larnaca and Aradippou areas for gardening	Medium
ACTION 1.1.7. Optimise supply vs demand between dams and desalinated water	Medium

VIABILITY OF THE STRATEGY 1: DEMAND MANAGEMENT	
ACTION PROGRAMME 1.1. Demand Management in Urban Sector	
ACTION	PRIOTITY
1.2.1. Control of abstractions with control and authorization of the many illegal boreholes	High
1.2.2. Installation of flowmeters to private boreholes	Medium
1.2.3. Application of the new Law79(I)/2010 regarding the licensing of boreholes to reverse the trends of groundwater depletion in HR8	High
1.2.4. Reduction in crop water requirements through the use of less water intensive crops	Medium
1.2.5. Expand the use of advanced irrigation systems to HR8	Medium
1.2.6. Promote effective use of water through the application of Best Irrigation Practices under drought conditions	Medium
1.2.7. Give incentives to use the treated wastewater	Medium
1.2.8. Increase of cost recovery in agricultural sector	High
1.2.9 Establishment of a central mechanism for the collection and use of revenues from the recovering of environmental and resource cost	High
1.2.10 Enhancement of water balance with treated waste water for irrigation	High

VIABILITY OF THE STRATEGY 1: DEMAND MANAGEMENT	
ACTION PROGRAMME 1.3. Demand Management in Industrial Sector	
ACTION	PRIOTITY
1.3.1. Provide incentives for reusing the industrial wastewater	Medium
1.3.2. Increase water cost recovery	High
1.3.3. Promote water saving culture	Low

VIABILITY OF THE STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY	
ACTION PROGRAMME 2.1. Protection of Surface Water	
ACTION	PRIORITY
2.1.1. Completion of the scheduled wastewater collection network expansion and the WWTP upgrading	Medium
2.1.2. Construction of common WWTP's in small communities	Medium
2.1.3. Register of all installations that impose a threat of pollution to water and soil and continuing of the licensing of these installations	High
2.1.4. Use of technology for the collection and monitoring of water resources data, especially in the field of the collection and processing of agro-meteorological data in order to identify the crop irrigation demands depending on the irrigation system applied	Medium
2.1.5. Improve the quality of treated wastewater in HR8 by applying advanced treatment methods	Low
2.1.6. Application of the Programme of Measures of the RBMP to improve the ecological status/potential of surface water bodies	High
2.1.7. Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of the RBMP in order to increase the percentage of the population served by WWTP	Medium
2.1.8. Allow for the ecological flow downstream of the Lefkara, Dypotamos and Kalavassos dams	High

VIABILITY OF THE STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY	
ACTION PROGRAMME 2.2. Protection of Ground Water	
ACTION	PRIORITY
2.2.1. Enhancement of water balance with treated waste water (aquifer recharge)	High
2.2.2. Completion of the scheduled wastewater collection network expansion and the WWTP upgrading	Medium
2.2.3. Construction of common WWTP's in small communities	Low
2.2.4. Application of the Programme of Measures of the RBMP to improve the status of groundwater water bodies	High
2.2.5. Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of the RBMP in order to increase the percentage of the population served by WWTP	Medium

VIABILITY OF THE STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY	
ACTION PROGRAMME 2.3. Protection of the Environment	
ACTION	PRIOTITY
2.3.1. Implementation of the National Action Plan to Combat Desertification measures in order to mitigate the desertification impacts on the affected areas	Medium
2.3.2. Completion and implementation of the Management Plans of the Natura 2000 areas	High
2.3.3. Application of the Programme of Measures of the RBMP to improve the ecological status/potential of surface water bodies	High
2.3.4. Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of  the RBMP in order to increase the percentage of the population served by WWTP	Medium

VIABILITY OF THE STRATEGY 3: DROUGHT MANAGEMENT STRATEGY	
ACTION PROGRAMME 3.1. Drought Management Plan	
ACTION	PRIOTITY
3.1.1. Application of the Drought Management Plan (as integrated in the RBMP) to increase the degree of meeting the needs of irrigation, industrial and livestock demand	Medium
3.1.2. Application of the DMP to decide on a) the degree of using water, b) the source of water for the various sectors and c) the level of the use of desalinated water.	High

VIABILITY OF THE STRATEGY 4: WATER SAVING AWARENESS STRATEGY	
ACTION PROGRAMME 4.1. Water Awareness Targeting Different Stakeholders	
ACTION	PRIOTITY
4.1.1. Promote existing water saving measures	High
4.1.2. Increase public awareness and participation in water management and protection for farmers through small informative workshops and specially designed leaflets	High
4.1.3. Promote educational programs to increase public awareness in water management and protection of the environment for farmers, touristic industry, for households and for industry	Medium
4.1.4. Send information leaflets on water saving for adults, though water billing services	Medium
4.1.5. Prepare an internet site and an interactive education programme on environmental protection, water inclusive, for school children	Medium
4.1.6. Continue the education of children at school though specially designed PowerPoint presentations made by WDD	High

VIABILITY OF THE STRATEGY 4: WATER SAVING AWARENESS STRATEGY	
ACTION PROGRAMME 4.2. Education on Water Issues	
ACTION	PRIOTITY
4.2.1. Provide information on water issues through the media, Agrotis magazine, articles in the newspapers, interviews on radio and television. Such issues include and are not exhausted to desalination, quality and reuse of treated wastewater, methods of conservation of water in households and irrigation, developmental water projects and their operation and management, protection of the environment, etc.	High
4.2.2. Provide adequate information on water issues and LA21 principles to the HR8 inhabitants through local meetings and social discussion	High

VIABILITY OF THE ENVIRONMENTAL AGREEMENT	
ACTION PROGRAMME A: POTABLE WATER SAVING	
ACTION	PRIOTITY
Install water saving devices at Community level	Very High

### 3. IMPLEMENTATION DEADLINES

Implementation deadlines are defined as the time of achievement and conclusion of the projects.

- Short: less than  $\leq 2$  years.
- Medium: from  $> 2$  to  $4 \leq$  years
- Long: more than  $> 4$  years

STRATEGY 1: DEMAND MANAGEMENT	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
<b>ACTION PROGRAMME 1.1 Demand Management in Urban Sector</b>					
1.1.1. Promote water saving appliances for government and home premises					
1.1.2. Installation of central flow meters to all Communities' domestic water supply network					
1.1.3. Reduce losses in water supply distribution system, especially in small communities					
1.1.4. Increase water price to reflect full cost recovery					
1.1.5. Provide incentives for grey water use in sanitary appliances					
1.1.6. Provide incentives for borehole water use in Larnaca and Aradippou areas for gardening					
1.1.7. Optimise supply vs demand between dams and desalinated water					

STRATEGY 1: DEMAND MANAGEMENT	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
<b>ACTION PROGRAMME 1.2. Demand Management in Agricultural Sector</b>					
1.2.1. Control of abstractions with control and authorization of the many illegal boreholes					
1.2.2. Installation of flowmeters to private boreholes					
1.2.3. Application of the new Law 79(I)/2010 regarding the licensing of boreholes to reverse the trends of groundwater depletion in HR8					
1.2.4. Reduction in crop water requirements through the use of less water intensive crops					
1.2.5. Expand the use of advanced irrigation systems to HR8					
1.2.6. Promote effective use of water through the application of Best Irrigation Practices under drought conditions					

1.2.7. Give incentives to use the treated wastewater					
1.2.8. Increase of cost recovery in agricultural sector					
1.2.9 Establishment of a central mechanism for the collection and use of revenues from the recovering of environmental and resource cost					
1.2.10 Enhancement of water balance with treated waste water for irrigation					

STRATEGY 1: DEMAND MANAGEMENET	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
ACTION PROGRAMME 1.3. Demand Management in Industrial Sector					
1.3.1. Provide incentives for reusing the industrial wastewater					
1.3.2. Increase water cost recovery					
1.3.3. Promote water saving culture					

STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
ACTION PROGRAMME 2.1. Protection of Surface Water					
2.1.1. Completion of the scheduled wastewater collection network expansion and the WWTP upgrading					
2.1.2. Construction of common WWTP's in small communities					
2.1.3. Register of all installations that impose a threat of pollution to water and soil and continuing of the licensing of these installations					
2.1.4. Use of technology for the collection and monitoring of water resources data, especially in the field of the collection and processing of agrometeorological data in order to identify the crop irrigation demands depending on the irrigation system applied					
2.1.5. Improve the quality of treated wastewater in HR8 by applying advanced treatment methods					
2.1.6. Application of the Programme of Measures of the RBMP to improve the ecological status/potential of surface water bodies					
2.1.7. Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of the RBMP in order to increase the percentage of the population served by WWTP					

2.1.8. Allow for the ecological flow downstream of the Lefkara, Dypotamos and Kalavasos dams					
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STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
ACTION PROGRAMME 2.2. Protection of Ground Water					
2.2.1. Enhancement of water balance with treated waste water (aquifer recharge)					
2.2.2. Completion of the scheduled wastewater collection network expansion and the WWTP upgrading					
2.2.3. Construction of common WWTP's in small communities					
2.2.4. Application of the Programme of Measures of the RBMP to improve the status of groundwater water bodies					
2.2.5. Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of the RBMP in order to increase the percentage of the population served by WWTP					

STRATEGY 2: PROTECTION OF WATER RESOURCES AND ENVIRONMENT STRATEGY	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
ACTION PROGRAMME 2.3. Protection of the Environment					
2.3.1. Implementation of the National Action Plan to Combat Desertification measures in order to mitigate the desertification impacts on the affected areas					
2.3.2. Completion and implementation of the Management Plans of the Natura 2000 areas					
2.3.3. Application of the Programme of Measures of the RBMP to improve the ecological status/potential of surface water bodies					
2.3.4. Implementation of the Directive 91/271/EEC (basic measure of the RBMP) and the relevant supplementary measures of the RBMP in order to increase the percentage of the population served by WWTP					



STRATEGY 3: DROUGHT MANAGEMENT STRATEGY	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
ACTION PROGRAMME 3.1. Drought Management Plan					
3.1.1. Application of the Drought Management Plan (as integrated in the RBMP) to increase the degree of meeting the needs of irrigation, industrial and livestock demand					
3.1.2. Application of the DMP to decide on a) the degree of using water, b) the source of water for the various sectors and c) the level of the use of desalinated water.					

STRATEGY 4: WATER SAVING AWARENESS STRATEGY	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
ACTION PROGRAMME 4.1. Water Awareness Targeting Different Stakeholders					
4.1.1. Promote existing water saving measures					
4.1.2. Increase public awareness and participation in water management and protection for farmers through small informative workshops and specially designed leaflets					
4.1.3. Promote educational programs to increase public awareness in water management and protection of the environment for farmers, touristic industry, for households and for industry					
4.1.4. Send information leaflets on water saving for adults, though water billing services					
4.1.5. Prepare an internet site and an interactive education programme on environmental protection, water inclusive, for school children					
4.1.6. Continue the education of children at school though specially designed PowerPoint presentations made by WDD					

STRATEGY 4: WATER SAVING AWARENESS STRATEGY	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
ACTION PROGRAMME 4.2. Education on Water Issues					
4.2.1. Provide information on water issues through the media, Agrotis magazine, articles in the newspapers, interviews on radio and television. Such issues include and are not exhausted to desalination, quality and reuse of treated wastewater, methods of conservation of water in households and irrigation, developmental water projects and their operation and management, protection of the environment, etc.					
4.2.2. Provide adequate information on water issues and LA21 principles to the HR8 inhabitants through local meetings and social discussion					

ENVIRONMENTAL AGREEMENT	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	More than 4 years
ACTION PROGRAMME A: POTABLE WATER SAVING					
A.1. Install water saving devices at Community level					

#### 4. MONITORING INDICATOR SYSTEM

To ensure that the sustainability of the Action Plan is monitored, a system of indicators should be established, defined as a set of parameters obtained at set intervals and which are fundamental intended to track the evolution of each of the Action Programmes and Actions undertaken to improve the weak points found during the creation of the Action Plan. The indicators are defined as measureable parameters which show the status of the project and degree of reaching the proposed goals at any given time.

TRACKING INDICATORS OF STRATEGY 1 : DEMAND MANAGEMENET
ACTION PROGRAMME 1.1 Demand Management in Urban Sector
INDICATORS
Number of premises using water saving appliances
% of reduction in water consumption
Number of Communities installed central flow meters
% reduction of losses in Communities' mains
% of cost recovery
% of premises per annum which use grey water
Number of houses having borehole licence
Ratio of quantity of water from dams over quantity of water from desalination multiplied by the cost of a m <sup>3</sup> of potable water

<b>ACTION PROGRAMME 1.2 Demand Management in Agricultural Sector</b>
<b>INDICATORS</b>
Number of applications of non-licence boreholes
Number of legal boreholes with flow meters
Number of applications of non-licence boreholes
Redaction in m <sup>3</sup> of water/hectare used in agriculture
% of the agricultural land using advanced irrigation systems
% of the agricultural area applying best irrigation practices
% of the treated water used for agriculture
% of increase in price of irrigation water
% of revenue collected
% of revenue used
% of the treated water used in agriculture

<b>ACTION PROGRAMME 1.3. Demand Management in Industrial Sector</b>
<b>INDICATORS</b>
Number of industries reuse wastewater
% of increase in water price in industry
Number of industries reuse water
Number of industries apply water saving measures

<b>ACTION PROGRAMME 2.1. Protection of Surface Water</b>
<b>INDICATORS</b>
% of networks completed
% of WWTP upgraded
Number of small communities connected to WWTP
Number of polluting installations registered
Results of crop irrigation demand for different types of crops
% of produced tertiary treated water according to permits given from Department of Environment.
% of improved surface water bodies
Number of population connected to WWTP

Quantities of water allowed for ecological flow/year

**ACTION PROGRAMME 2.2. Protection of Ground Water**

**INDICATORS**

% of treated water used for aquifer recharge

% of completion of the scheduled works

% of completion of the scheduled works

Number of aquifers not deteriorating in HR8

Number of population connected to WWTP

**ACTION PROGRAMME 2.3. Protection of the Environment**

**INDICATORS**

% of biodiversity loss in HR8

% of Natura management plans completed according to plan

% of ecological status improvement

% of population connected to WWTP

**ACTION PROGRAMME 3.1. Drought Management Plan**

**INDICATORS**

% of demand irrigation water satisfied under drought years

% of demand industry water satisfied under drought years

% of demand livestock water satisfied under drought years

Application of DMP at min cost

**ACTION PROGRAMME 4.1. Water Awareness Targeting Different Stakeholders**

**INDICATORS**

% of potable water saving /year

Number of informative leaflets send to recipients

Number of participants at the workshops

Number of educational programs prepared

Number of people received the message



Number of leaflets send
Number of visitors of the website
Number of Schools attending the program
Number of children educated through the program

<b>ACTION PROGRAMME 4.2. Education on Water Issues</b>
<b>INDICATORS</b>
Number of articles per year
Number of radio / TV discussions
Number of Local meetings/year
Number of people attended the meetings

<b>ACTION PROGRAMME A: POTABLE WATER SAVING</b>
<b>INDICATORS</b>
Decrease in total water consumption compared to that of the base year (quantitative indicator)
Decrease of the unit water consumption (per household or per meter) by distinguishing urban consumption, commercial (industrial) and tourist use (quantitative indicator)
Expenditure by WDD on community advertising (quantitative indicator)
Other requirements relating to water issues, provided by WDD to the community (qualitative indicator)

## 5. EVALUATION OF RISK S

The table below briefly explain the potential risks associated with the implementation of the Action Plan in HR8.

POTENTIAL RISKS ASSOCIATED WITH THE IMPLEMENTATION OF THE ACTION PLAN IN HR8	
RISK FACTORS	MITIGATION MEASURES
Risks associated with the failure (non-implementation) of the measures planned and funded through other programs	The risks have been identified in the River Basin Management Plan. In general the River Basin Management Plan has been completed and approved since 2011 and its implementation is progressing. There are no additional risks to be expected till its completion in 2015
Lack of resources and inadequate funding	Resources will be searched through the EU or even with the use of sponsors. For example, distribution of leaflets could be financed by private companies (e.g. beverage company KIA), which are also interested in water issues, as they either consume a great quantity or interfere significantly on water quality
Human resources shortage	Public and private sector partnership. Consultancy services
Inadequate or total lack of response from the social partners as far as it concerns actions of public awareness.	WDD District Officers, assistance will be requested and efforts will be made, so that the meetings be organised through the District administration. Enhance communication with stakeholders, organize social events for the promotion of the positive outcomes and the benefits to the beneficiaries
Changes in the Reform of the Common Agricultural Policy (CAP).	Adapt programs and projects to measures established by the new CAP
Lack of environmental awareness especially in the agricultural sector.	Intensify training and perform actions that enhance environmental awareness training for farmers and general public