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## CLIMATE PROOFING THE DANUBE DELTA

### THROUGH INTEGRATED LAND AND WATER MANAGEMENT

#### SUMMARY OF THE ACTION

Title of the action:	<b>Climate proofing the Danube Delta through integrated land and water management</b>
Location(s) of the action:	Ukraine: Danube Delta region (Reni, Izmail and Kiliya Raions) Moldova: Lower Prut area (Cahul County)
Total duration of the action ( <i>months</i> ):	36 months
Objectives of the action	<i>Overall objective:</i> To contribute to biodiversity conservation, increased resilience of Danube Delta ecosystems, and improved local communities' livelihoods by mainstreaming climate change adaptation and mitigation in the local and regional (trans-boundary) policies and plans. <i>Specific objective:</i> By Year 3, a trans-boundary Climate Change Adaptation Strategy and Action Plan is established for the Danube Delta, delivering benefits to both ecosystems and local livelihoods as demonstrated by pilot activities at local level.
Target group(s) <sup>1</sup>	-Water and nature managers (local and regional): 150 staff (eg. Danube Biosphere Reserve Ukraine and Romania, Water Management Agencies, Odessa Regional Water Management Department) -NGOs: 50 staff (eg. Center of Regional Studies, Danube Youth Club, Ecospectru), -Local communities and entrepreneurs: 200 people (eg. Local governments, Tour operators, Associations on agriculture, fisheries)
Final beneficiaries <sup>2</sup>	-Local authorities around the Danube Delta -Local communities (about 100,000 people living within the Danube Delta area)
Estimated results	-Increased cooperation between Ukraine, Moldova and Romania to develop and implement a regional trans-boundary Climate Change Adaptation Strategy and Action Plan. - Strengthened capacity and increased awareness of local authorities in the Danube Delta to integrate climate change in local development plans, to design and apply in pilot areas cross-sectoral adaptation measures involving all relevant stakeholders - Opportunities for income and green energy generation enabled and demonstrated in Ukraine and Moldova
Main activities	- Develop a trans-boundary Climate Change Adaptation Strategy based on vulnerability assessment and multi-sector approach of the Danube Delta system; - Establish a Danube Delta Working Group to „climate proof„ Danube Delta Management Plan; - Raise awareness of water and nature managers, local authorities, NGOs, local communities on climate change risks, adaptation needs and measures through effective climate change campaign; - Develop and implement a training programme on Climate change adaptation for water and nature managers (Training of Trainers);

<sup>1</sup> “Target groups” are the groups/entities who will be directly positively affected by the action at the action purpose level.

<sup>2</sup> “Final beneficiaries” are those who will benefit from the action in the long term at the level of the society or sector at large.

	<ul style="list-style-type: none"> <li>- Demonstrate efficiency of green infrastructure to increase resilience of the Danube Delta ecosystems and opportunities for income and green energy generation to reduce carbon footprint in pilot areas;</li> <li>- Active communication of the project purpose and dissemination of results;</li> <li>- Organise an international conference to share lessons learned and promote Danube Delta as a model for climate change adaptation and mitigation, biodiversity conservation and sustainable management;</li> </ul>
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## 1.1. Description of the action and its effectiveness

The overall objective of the Action is to contribute to biodiversity conservation, increased resilience of Danube Delta ecosystems, and improved local livelihoods for communities by mainstreaming climate change adaptation and mitigation in local and regional (trans-boundary) policies and plans. Within this context, the focus of the Action will be to establish a trans-boundary Climate Change Adaptation Strategy and Action Plan for the Danube Delta sub-basin that will deliver benefits to both ecosystems and local livelihoods as demonstrated by pilot activities at local level. The trans-boundary Climate Change Adaptation Strategy will not only set a vision for sustainable adaptation but will also test its feasibility through concrete activities on the ground (e.g. use of wetlands resources for green energy generation, increased awareness of local authorities and communities on nature friendly alternatives for green energy production, mobilising local entrepreneurs to take action on developing such alternatives) which underpin the vision. The activities implemented to achieve Expected Result 2 (*Strengthened capacity of local nature and water managers and increased awareness of local stakeholders in the Danube Delta sub-basin to address climate change and apply methodologies for adaptation and mitigation in pilot areas*) and Expected Result 3 (*Opportunities for income and energy generation from sustainable biomass production (linked to wetlands restoration) as a green energy source are enabled and demonstrated in Ukraine and Moldova*) will therefore contribute to Expected Result 1 (*Increased cooperation between Ukraine, Moldova and Romania to develop and implement a regional trans-boundary Climate Change Adaptation Strategy and Action Plan*) by creating the conditions for effective exchange of information between different levels (local to regional) and between different categories of stakeholders.

Geographically, the project's focus is the Danube Delta sub-basin including the Danube Delta and the adjacent area. The Danube Delta (total area 4,178 km<sup>2</sup>) is largely situated in Romania (82%) and partly in Ukraine (18%). In 1999, the UNESCO's Man and Biosphere Programme formally recognised the Danube Delta as a trans-boundary Biosphere Reserve. The Delta is an environmental buffer between the Danube River and the Black Sea, filtering out pollutants and providing natural habitats for fish in the Delta and in the environmentally vulnerable shallow waters of the north-western Black Sea. Moreover, it is Europe's largest remaining natural wetland – a unique ecosystem. Although the Moldovan section of the Lower Danube lies outside of the boundaries of the Danube Delta as a geographical unit, a significant part of the local catchment and the Lower Prut wetlands makes the adjacent area of the Republic of Moldova important to the joint management of the Delta and its resources.

Therefore, based on the principles of the EU Water Framework Directive, the *Danube Delta Sub-basin District* covers the whole area of the Danube Delta Biosphere Reserve, Romania, including the Razim-Sinoe Lagoon complex; the *Ukrainian part of the Danube Delta* and the large lakes – Kahul, Kartal, Kugurlui-Yalpug, Katlabuh, Kitay and Stensovsko-Zshebriyansky Plavni Reed bed including local catchments. Respecting a river basin approach, the Sasyk Liman (Estuary) is also considered a part of the Danube Delta Sub-basin. The *Moldovan part of the Danube Delta Sub-basin* covers the Lower Prut area and local catchment area of the Lower Danube Lakes' tributaries located in the south-west of Moldova. The valley of the Prut River is shared between the Republic of Moldova and Romania. Though more precise definition of the Danube Delta Sub-basin District boundaries is still needed, its total area has been estimated at 24,686 km<sup>2</sup> with more than 1,1 million people living there. Local communities in the Danube Delta do not have the knowledge or capacity to use ecosystems in an economically and ecologically sustainable way, which directly impacts both living standards and biodiversity. In post-communist countries, nature conservation and ecosystem services are hardly recognised as providing valuable sources of income due to longer period of time needed for return on

investments compared with the shorter turn-over offered by intensive exploitation of natural resources. Nevertheless, public concern for the environment is increasing and there is growing openness for biodiversity-based community development in both Ukraine and Moldova.

Past and present unsustainable human activities have increased the pressure on natural systems striving to adapt to dynamic factors and to become resilient to stress. Regional and local authorities managing the land, nature and water resources within the Danube Delta sub-basin have limited information regarding climate change impact and limited capacity to develop sustainable adaptation and mitigation plans. The project's specific objective (*By 2013, a trans-boundary Climate Change Adaptation Strategy and Action Plan is established for the Danube Delta, delivering benefits to both ecosystems and local livelihoods as demonstrated by pilot activities at local level*) will be achieved through strengthening the skills and competencies of local authorities (nature and water managers, regional and local governments) as well as local and regional NGOs on specific adaptation and mitigation measures and will increase awareness of local communities and private entrepreneurs on climate change impacts generally and on the opportunities for new sources of income and a better quality of life generated from using green energy sources. The final beneficiaries – the land, water and nature management authorities – will benefit from trainings, workshops, studies, strategies and action plans that will increase their technical expertise and knowledge of dealing with natural resources and climate change in an integrated manner. The exchange of information between experts from similar institutions in the three countries (Romania, Moldova and Ukraine) will be significantly improved through the action. The local communities (20 communities in the Danube Delta) will have improved their participation in the decision making process and will be offered viable opportunities to improve their living standards and reduce poverty through biodiversity-based green energy production mechanisms.

The following specific results are expected to be achieved by implementing project's activities:

**0. Project inception phase (Expected Result 0 – Structures in place to support successful implementation of the project)**

**0.1. Start-up/Project inception meeting in Izmail (Ukraine):** a one-day event will gather the project co-ordinators, managers and key experts from Romania, Ukraine and Moldova to clarify the project's action plan, agree on a cash-flow plan, necessary legal documents needed to ensure proper financial management, methods of reporting to the lead applicant and sharing of information about the project implementation between partners (internal communication means).

**0.2. Appoint the Project Steering Committee (PSC):** PSC will be approved by the partners at the start-up/inception meeting. Its creation will ensure proper coordination and management of the project. The PSC will involve a representative from each partner and the top managers of the project (the project manager and the managers from Romania, Ukraine and Moldova) and will have an advisory role.

**0.3. Project monitoring and evaluation meetings** will be held at the end of each reporting period to track progress in the implementation of activities, assess achieved results against planned objectives and clarify the project's action plan for each next reporting period. Evaluation meetings will be scheduled in such a way that each semester of the project will be covered. Regular visits to the area are also planned.

To **measure the project effectiveness** in terms of public awareness of the effects of climate change in the Danube Delta sub-basin, **baseline indicators** will be defined by the project team at the beginning of the project and used to assess how understanding of the climate change process and the need for adaptation has changed during project implementation. Decision makers will be in the focus of attention as their readiness/unreadiness and willingness/unwillingness to take climate change issues and adaptation strategies into consideration when producing regional/local development strategies/plans is seen as a critical point in making a trans-boundary Climate Change Adaptation Strategy and Action Plan viable.

#### **0.4. Project closure phase includes:**

**Final project evaluation meeting** by the PSC held at the end of the project to evaluate the implementation during the reporting period and overview the project implementation on the whole. Achievements and gaps will be analysed. A follow-up action plan will be discussed and approved to ensure that the partners will continue activities based on the project's results. Subsequently, the final report will be discussed and approved and follow-up activities defined. The production of the **final report** will be based on the evaluation of each reporting period (by external evaluator) reflected in the interim reports and an overview of achievements and gaps of the project on the whole. To prepare the final report the management team will collect all necessary technical and financial information from each partner. Interim and final reports will also include details on the progress of visibility activities.

**Project Auditing** will be made in compliance with the Terms of Reference (Annex VII) of the Grant Contract between the Contracting Authority and the Lead Partner.

This group of activities will be the responsibility of the lead partner, but the involvement of all partners will be needed for the successful management and implementation of the project.

#### **Expected Result 1: Increased cooperation between Ukraine, Moldova and Romania to develop and implement a regional trans-boundary Climate Change Adaptation Strategy and Action Plan.**

Climate change at the scale of the Danube Delta cannot simply be addressed at national level due to the high level of complexity and interconnectivity of the delta's ecosystems which go beyond administrative boundaries. The development of a Danube Delta Climate Change Adaptation Strategy as a part of this action will be an efficient exercise to increase cooperation between the three countries (Ukraine, Moldova and Romania). This will build upon existing efforts in the region to use a holistic approach for the management of the Danube Delta, beyond administrative boundaries, including designation of the Danube Delta sub-basin under the International Commission for the Protection of Danube River (ICPDR); development of a Management Plan for the sub-basin; and designation of the Danube Delta Trilateral Biosphere Reserve under MAB UNESCO. As the first step, an *Expert Working Group* involving scientists, water and environmental managers, hydro-meteorologists, specialists in environmental and emergency management from local governments will be established to ensure effective consultation at different levels. It will be important to involve an expert from the ICPDR as the development of a trans-boundary Climate Change Adaptation Strategy and Action Plan will contribute to the development of a River Basin Management Plan for the Danube Delta Sub-basin under the umbrella of the ICPDR. The Working Group will be acting on a long-term basis to ensure exchange of data and information on the impacts of climate change on water and water related resources in the region between Romanian, Ukrainian and Moldovan experts.

As groundwork for the development of a trans-boundary Climate Change Adaptation Strategy and Action Plan, a vulnerability assessment of the Danube Delta Sub-basin will be carried out. A *Vulnerability Assessment Study* will be produced as a tangible output from the project. This document, being the basis for developing the Strategy, has at the same time particular value for sound decision making in water resource management and regional/local development strategies. In addition, the vulnerability assessment of the Danube Delta Sub-basin will be a good example for a similar approach at the scale of the Danube River basin, as outlined in the Danube Declaration adopted at the ICPDR Ministerial Meeting in Vienna on 16 February 2010. A Danube Delta Climate Change Adaptation Strategy will significantly contribute to the Danube Basin Climate Adaptation Strategy and the proposed measures could be fully integrated in the second Danube River Basin Management Plan in 2015.

The EC Climate Change White Paper underlines the close interrelation between climate change and biodiversity and the need for an integrated approach to policy development, notably in the context of the European Neighbourhood Policy. The action will also ensure coordination with relevant initiatives and platforms/partnerships currently under development in the context of the Black Sea Synergy and the Eastern Partnership as well as with the ICPDR whose role in implementing measures for protection and sustainable use of Danube Delta is crucial in the region.

#### **Target groups (Result 1)**

The following institutions and organizations (23, selected based on their interest and influence in the management of the Danube Delta) are directly targeted: Danube Biosphere Reserve (Ukraine), Danube

Delta Biosphere Reserve Authority (Romania), Lower Prut Reserve Moldova, Izmail State Forestry Ukraine, Regional Environmental Protection Agencies in Romania, Moldova, Ukraine, Danube Basin Management Department (Ukraine), Romanian National Water Administration – Dobrogea - Litoral Water Directorate – Tulcea Water Management System, Moldova Water Management Authority, State Hydrometeorological Committee in Moldova, Danube Delta National Institute for Research and Development (Romania), Danube Hydrometeorological Observatory (Ukraine), Department General for Emergency Management in the Odessa Region (Ukraine), Odessa State Environmental University (Ukraine), Centre for Regional Studies (Ukraine), State Department for Environmental Protection in the Odessa Region, NGOs and representatives of local authorities (3 Raions in Ukraine, 1 Raion in Moldova, 1 county in Romania). They will participate in the Danube Delta Expert Working Group and will be consulted and will provide information for the Vulnerability Assessment and the Climate Change Adaptation Strategy. *They will benefit from the process through:*

- gaining experience with strategic planning
- better understanding environmental issues at the scale of the Danube Delta sub-basin
- increased experience with communicating and sharing management issued in a trans-boundary context
- increased access to information from neighboring countries

The Danube Delta Expert Working Group will also act as a platform for sharing responsibilities between the authorities of the Danube Delta, especially addressing common management issues like biodiversity conservation, water and sediment flows and impact of economic activities (e.g. navigation). Other research institutions that will be consulted during the project are: Odessa Branch of the Institute of Biology of Southern Seas, Odessa National Mechnikov University, Ukrainian Research Centre for Marine Ecology and the Academy of Science in Chisinau.

### **Final beneficiaries (Result 1)**

The land, water and nature management public institutions through their representation in the Working Group and their access to reliable scientific data on the vulnerability of the Danube Delta to climate change ultimately will have increased institutional capacity and expertise to shape land use and spatial planning to integrate climate change adaptation measures and will benefit from increased cooperation and exchange of information with their counterparts from Ukraine, Romania, Moldova. The local communities (20 communities in the Danube Delta from the Raions Reni, Izmail, Kilia and Cahul) will have improved their participation in the decision making process and will be offered viable opportunities to improve their life standards and reduce poverty through biodiversity-based green energy production mechanisms.

### **Publications:**

- Danube Delta Sub-basin Climate Change Adaptation Strategy and Action Plan
- Danube Delta Sub-basin Climate Change Vulnerability Assessment

To achieve project **Result 1** (**Increased cooperation between Ukraine, Moldova and Romania to develop and implement a regional trans-boundary Climate Change Adaptation Strategy and Action Plan**) the following activities will be undertaken:

### **1.1. Establish and facilitate a Danube Delta Expert Working Group, hold regular meetings (DDEWG)**

The establishment of a Danube Delta Expert Working Group is justified by the need for strengthening the integration of climate change adaptation and mitigation measures in the management of the Danube Delta Sub-basin. The creation of this Expert Working Group aims to facilitate communication, coordination, cooperation and collaboration between key institutions and public authorities involved in research activities and the environmental management in the Danube Delta Sub-basin. It will bring together experts to collect and analyse data pertaining to the impacts of climate change in the Danube Delta Sub-basin and provide reliable information that can be communicated to regional and local government, business community and the general public through project information materials and website. A core group of experts will be represented by scientists and specialists from the above mentioned institutions and public authorities (see the description of the

target group of Result 1). It is expected that DDEWG will involve 25-30 experts who will be gathering two times per year.

The Activity will be coordinated by the Centre of Regional Studies (CRS) (partner 2) in close cooperation with WWF RO. Being closely involved in facilitating the move towards the development of a River Basin Management Plan for the Danube Delta Sub-basin under the umbrella of the ICPDR the CRS will take a leading role in the drafting of the Danube Delta trans-boundary Climate Change Adaptation Strategy in the framework of the DDEWG. WWF RO will support the Centre of Regional studies in facilitating the discussions around and in delivering the trans-boundary Climate Change Adaptation Strategy. Whenever necessary, the Working Group will meet on an ad-hoc basis. Danube Biosphere Reserve Ukraine (Partner 1) and Ecospectru (Partner 4) in Moldova will facilitate participation in the Working Group of key Stakeholders from Ukraine and Moldova.

### **1.2. Conduct a Climate Change Vulnerability Assessment Study for the Danube Delta sub-basin**

A Vulnerability analysis of the Danube Delta sub-basin is fundamental to assessing key long term climate risks and is part of risk management for integrating climate risks into policy making. It is also fundamental to assessing the viability of current legislation and to assessing the vulnerability of key assets and how climate change may affect them. Such a study will be essential to derive a flexible and appropriate future set of policies and measures that will be integrated into the trans-boundary Danube Delta sub-basin Climate Change Adaptation Strategy and Action Plan. The study will be elaborated by a team of experts under the coordination of Centre of Regional Studies (CRS) and WWF RO. The Centre of Regional Studies (Partner 2) will be involved in the development of the Terms of Reference, and provide feed-back on the study documents developed by experts.

The implementation of this activity will include the creation of a Geographic Information System (GIS) database to support a detailed assessment of the characteristics of Danube Delta floodplain, including biological, ecological, social and economic elements. Existing data already collected by the CRS' GIS division and recent remote sensing data will be made available. This activity will also involve field studies needed to update the existing data and collect new ones. The database will provide the information necessary for the Vulnerability Assessment study (data, maps) collected and stored in accordance with the requirement of the EU Water Framework Directive (WFD) by using a common system that permits exchange of information between the three countries (Romania, Ukraine and Moldova). This Activity is also seen as the groundwork for the development of the trans-boundary Climate Change Adaptation Strategy that will enable easy access to and use of data by decision makers, but structured information (e.g. vulnerability maps) will be also available to the public through the project website. The Assessment of the Danube Delta potential for wetland restoration developed under Activity 2.4 will also provide key information for the Vulnerability Assessment.

### **1.3. Develop a trans-boundary Climate Change Adaptation Strategy**

No single measure is capable of fully addressing the effects of climate change in a trans-boundary region as the Danube Delta Sub-basin, which is shared by three countries and including human communities directly dependent on natural resources availability as well as areas of high biodiversity under different levels of protection. A trans-boundary Climate Change Adaptation Strategy developed in a participatory manner (involving the key institutions mentioned under Result 1) and combining a variety of measures that target different groups and time-scales is therefore essential for the Danube Delta Sub-basin. The strategy will outline measures in all the steps of the adaptation chain: prevention, improving resilience, preparation, response, and recovery. Prioritization of adaptation measures will be based on the results of the Vulnerability Assessment Study, costs and benefits assessments as well as on development objectives, stakeholder considerations and the resources available. As a first step, available measures should be described according to their benefits, risks, costs, possible side-effects, uncertainties etc. Secondly, measures need to be compared and ranked, using various methods ranging from systematic qualitative analysis, semi-quantitative analysis in order to compare different attributes or parameters, and full quantitative analysis of risks, costs and benefits. The strategy will be accompanied by an Action Plan including priority measures to cope with climate change risks. It is expected that the implementation of the strategy will go beyond the project's time frame and will have to involve a continuous evaluation of the impact of the proposed measures. Unexpected side-effects may appear; therefore, pilot projects like wetland restoration (Activity 2.5), could provide an excellent opportunity for learning-by-doing.

The strategy document will be elaborated by a group of experts who will liaise with experts from the research institutes in the region; water and environmental protection authorities; and regional governments. It will follow a transparent process of consultation to ensure proper integration of all legal aspects entailed by the implementation of the strategy. The strategy is expected to be endorsed by the Ministries of Environment in all three countries.

The development of the strategy will be coordinated by WWF RO with technical support from the Centre of Regional Studies (Partner 2), Danube Biosphere Reserve Ukraine (Partner 1), Danube Delta Biosphere Reserve Romania, Ecospectr Moldova (Partner 4) and key experts who will contribute to different sections of the strategy.

**Expected Result 2: Strengthened capacity of local nature and water managers and increased awareness of local stakeholders in the Danube Delta sub-basin to address climate change and apply methodologies for adaptation and mitigation in pilot areas**

The development of a trans-boundary Climate Change Adaptation Strategy may remain a theoretical exercise as long as local authorities' lack of awareness of the impacts of climate change of the region's development and limited capacity for strategic planning are not addressed. From the initial stages of the project implementation, based on a carefully planned communications strategy and plan, an intensive awareness raising campaign on Climate Change adaptation and mitigation at regional and local levels will target nature and water managers, local authorities, NGOs and local communities. This campaign will aim to build the public support base for promoting the adoption of adaptation and mitigation measures in the Danube Delta sub-basin.

An extensive training programme on climate change adaptation approaches for nature and water managers (at least 150 people in Ukraine and 75 in Moldova, from ca 22 institutions) providing technical structured information adapted to their needs within the institutions they represent will also be conducted in the framework of this project. They will be trained to gain improved knowledge of the climate change impacts on water and biodiversity and to improve their day-to-day activities and planning within their institutions/organisations as well as to share the information and knowledge gained with other colleagues and stakeholders. Feasible solutions to adapt to climate change risks, especially to manage flood risks for local people, properties and infrastructure in the region will be presented during the training and will serve as best practice examples of adaptation. The use of „green” structural approaches (like wetlands restoration) is notably recommended by the EU White Paper on Climate Change to increase resilience of ecosystems while halting biodiversity loss.

The Danube Delta has lost ca 35% of its floodplain due to conversion of wetlands into agricultural land. Extensive areas of active floodplains were transformed into polders, surrounded by dykes and disconnected from the river system. The existing infrastructure has proven to provide limited protection, as during the Danube flood in 2006 when the Danube River flooded several villages and agricultural land, especially in the Romanian part of the delta. The potential for wetland restoration is huge and yet no detailed assessments in the Ukrainian part of the Danube Delta exist. As part of the project, a study to assess the potential for wetlands restoration of the Danube Delta will be developed. The study will identify priority areas for restoration and will serve as a basis for selecting one pilot restoration project that will be promoted to local stakeholders and all necessary steps for implementation discussed and agreed within the community. It is expected that by Year 3 of the project, restoration plans for climate change adaptation in three pilot sites will be endorsed by stakeholders and a feasibility study for implementation of green infrastructure will be developed for one of the sites. The findings of the study will be taken into consideration by the experts of the Danube Delta Working Expert Group when the River Basin Management Plan for the Danube Delta Sub-basin is developed under ICPDR. As a first step, the studies developed as part of this project (Vulnerability Assessment, Climate Change Adaptation Strategy and Assessment of the wetland restoration potential) will be integrated in the Danube Delta sub-basin Analysis report which is preceding the development of the Management Plan according with the requirements of the WFD.

**Target groups (Result 2)**

Nature managers (Danube Biosphere Reserve in Romania and Ukraine, Lower Prut Scientific Reserve, Regional Agencies for Environmental Protection in Galati, Tulcea and Braila) and water authorities (Romanian National Water Administration – Dobrogea - Litoral Water Directorate–Tulcea Water Management System and Moldovan Water, Odessa Oblast Water Authority) are directly responsible

for the management of natural resources within Danube Delta. Regional and local governments (Odessa Regional Council, local councils of Reni, Izmail and Kiliya Districts, Izmail City Council, Cahul District Council) will participate in the planned workshops and meetings as they are implementing the development plans in the region. It is expected that 150 people will attend the training sessions in Ukraine and 75 in Moldova. The benefits of training representatives of these institutions, selected according to their position and responsibilities (departments' coordinators, team leaders) are:

- increased understanding of climate change risks
- increased knowledge about potential solutions for climate change mitigation and adaptation
- increased capacity to address climate change impacts and design and apply methodologies for climate adaptation
- increased knowledge about EU policies on Climate Change
- increased awareness of challenges for institutional adaptation
- knowledge about possible approaches and case studies from other countries

Indirectly, it is expected that the knowledge gained by selected people during the training sessions will be shared internally in their organisations and contribute to the improvement of the technical capacity of the staff involved in climate related activities (e.g. flood risk management).

Strengthened capacity of environmental NGOs (50 people from: Renaissance Vidrodzhennia, Eco Counselling Centre Galati, EcoPontica Tulcea, Cahul District Centre for Environmental Consultations, Regional Centre for Ecological Studies "Ecos", Lower Danube Euroregion–Commission for Environmental Protection and Emergency) is expected to lead to greater public awareness of environmental issues, improved dialogue among various stakeholders in society and facilitate public participation in decision making processes concerning the environment. The actions foreseen by this project will contribute to the further development of civil society in Ukraine and Moldova focusing on environmental NGOs and their role in the development and implementation of water policy. The public targeted by the public awareness campaign will gain a better understanding of climate change risks for their livelihoods and of the urgency to make a change in the way they relate with the environment and the resources they use.

### **Final beneficiaries (Result 2)**

Trained nature and water managers as final beneficiaries will have a key role in promoting institutional adaptation and influencing governance on climate change adaptation and mitigation. Local communities (20 communities from the Raions Reni, Izmail, Kilia and Cahul) in the Danube Delta will be better informed regarding climate change risks and will benefit from practices demonstrated in the field (wetland restoration as a measure for climate change adaptation and green energy source) that can be magnified and opportunities leveraged over the long-term.

### **Publications:**

- Training course package on Climate Change Adaptation and Mitigation for nature and water managers
- Study on the wetlands restoration potential of the Danube Delta sub-basin and Action Plan
- Brochure on role and services provided by wetlands

To achieve project **Result 2** **Strengthened capacity of local nature and water managers and increased awareness of local stakeholders in the Danube Delta sub-basin to address climate change and apply methodologies for adaptation and mitigation in pilot areas** the following activities will be undertaken:

### **2.1. Develop an efficient communication strategy to raise public awareness of climate change impacts, mitigation, and adaptation mechanisms**

For an area where social constraints and political changes are of major concern for the people, communicating and raising awareness of climate changes requires a strategic approach. The Communication Strategy is necessary to identify the most appropriate messages and communication tools and means to effectively raise awareness of the identified target groups and final beneficiaries of the opportunities and threats brought by climate change. The strategy will provide the framework for



implementing a successful public awareness raising campaign (Activity 2.2.) which will target both, mitigation and adaptation. WWF RO is responsible for delivering the Strategy, having experience in developing similar documents.

## **2.2. Conduct a public awareness raising campaign on Climate Change adaptation and mitigation at regional and local levels**

The communication strategy will define the structure and the key messages specific to the project's target groups and the final beneficiaries. The campaign will use the most suitable, country specific local and national communication channels, aiming to increase the level of knowledge and understanding of the targeted groups regarding climate change risks for their livelihoods, impact on natural resources availability (e.g. water) and on their business, and about viable solutions for adaptation and mitigation (e.g. green infrastructure approaches, biodiversity-based green energy generation mechanisms). The message of the campaign will be articulated around the need to reconcile nature and human interests for a sustainable future of the communities living in the Danube Delta, to couple biodiversity conservation and ecosystem services into community development as a basis for improved quality of life and a more secured future in a dynamic environment. It is expected that by Year 3, awareness of climate change impacts and measures to cope with it has increased by 50% in the communities targeted by the public awareness campaign. All actions, materials and information will be in line with Community visibility requirements. The production of two audiovisual clips with support from advertising agencies is envisaged for the public awareness campaign. With the support of the Danube Biosphere Reserve, their Visitor Centre in Vilkovo will host a thematic exhibition (3D models) about wetlands benefits and role for climate change adaptation and mechanisms for producing green energy. The activity will be implemented by WWF RO in cooperation with Danube Biosphere Reserve (Partner 1) and Ecospectr (Partner 4) and benefiting from advice and support from WWF HU (Partner 3), who has valuable experience and expertise in developing and implementing such campaigns.

## **2.3. Develop and implement a training programme on Climate Change adaptation for selected target groups**

To create conditions for the effective implementation of the trans-boundary Climate Change Adaptation Strategy and Action Plan as well as to enhance capacities of local authorities to understand climate change issues and integrate this knowledge into local development strategies and plans, intensive training sessions (three consecutive days each year of the project) will be organised for local and regional nature and water managers in Ukraine and Moldova. By training key people from selected institutions, with leading or coordinating responsibilities, the impact being sought is to outreach a larger number of nature and water managers than the group strictly participating in the training programme. The training programme will have a modular structure to provide the participants with useful, easy to assimilate information: module 1 (Climate change: uncertainties, vulnerability, adaptation and mitigation – policies, concepts, methodologies, tools), module 2 (Climate change adaptation and mitigation: from theory to practice, key case studies), module 3 (Practical exercise adapted to country-specific situation). At the end of the course, participants should be in a position to make rational use of relevant information, methods and tools available for making appropriate assessments, in order to better plan and make the best possible decisions regarding the implementation of strategies and actions to reduce vulnerability and improve adaptation options.

By the end of the project, 150 participants will have been trained in Ukraine and 75 in Moldova.

The activity will be implemented by WWF RO (defining the structure and content of the Training programme, using WWF's network expertise) involving experienced trainers and facilitators and supported by the Centre for Regional Studies (Partner 2) and WWF HU (Partner 3).

## **2.4. Conduct an assessment to evaluate restoration potential within the Danube Delta sub-basin and develop a Danube Delta Wetland Restoration Action Plan**

The potential for wetland restoration of the Danube Delta is currently underestimated, as is the capacity of the delta ecosystems to increase their resilience to stress from climate changes. The study is necessary to provide a basis for linking wetlands restoration as a climate change adaptation measure with the vulnerability assessment and Climate change Adaptation Strategy and as a measure to

enhance ecosystem services with the Assessment of availability of green energy sources that will be developed as part of the project. The study will provide an in depth assessment of:

- the current state of the floodplain areas within the Danube Delta Sub-basin (land use, key landscape elements, level of transformation, presence of key species and habitats, main threats/pressures)
- the connectivity potential of wetlands, of side arms and other hydrogeomorphological elements of the floodplain
- priority areas to be reconnected and feasible options

The study will use GIS tools that will enable production of thematic maps, ground truth data collection to calibrate remote sensing data and integrate existing studies from the Danube Delta Romania (Master Plan – support for sustainable development in the Danube Delta Romania, 2006) and Ukraine (the inventory of wetlands in the Ukrainian part of the Danube Region conducted in 2008-2009.).

The Centre for Regional Studies (Partner 2) has the necessary technical capacity and will be responsible for the coordination of this activity.

## **2.5. Foster implementation of restoration works at one pilot area to enhance the quality of natural resources and to demonstrate efficiency of green structural approaches**

Results of activity 2.4. will serve to select an area of at least 3.000 ha for which restoration would be feasible. For this area, a feasibility study will be elaborated and endorsed by the local community during public meetings and through collection of signatures. A Memorandum of Understanding will be signed with the land owner/administrator to ensure commitment to restore the area. This activity is necessary to gain local buy in for practical climate change adaptation measures, to have open dialogue at the community level on opportunities derived from wetland restoration, to demonstrate efficiency and benefits of using green structural approaches and to raise awareness of the local stakeholders. Investing in natural capital supports a wide range of economic sectors and maintains and expands our options for economic growth and sustainable development. Such investments can be a cost-effective response to the climate change risks, offer value for money, support local economies, create jobs and maintain ecosystem benefits for the long term. A brochure will be produced to provide information of the role of wetlands for providing ecosystem services to people.

The feasibility study will be developed by the project experts under the coordination of the Centre for Regional Studies (Partner 2). The Danube Biosphere Reserve (Partner 1) will provide support at local level by enabling communication with relevant authorities and other stakeholders and will supervise preparation of the feasibility study. WWF RO will bring in WWF's experience of wetlands restoration.

### **Expected Result 3: Opportunities for income and energy generation from sustainable biomass production (linked to wetlands restoration) as a green energy source are enabled and demonstrated in Ukraine and Moldova**

While the first two results provide a strategic approach to climate change adaptation and mitigation, increase technical and management capacities of target groups and beneficiaries and provide the sound scientific arguments to promote and support practical implementation of green structural approaches, the third result aims to link wetland and floodplain restoration/sustainable management and production of biomass with the needs of the local communities for improved livelihoods and access to green energy sources. At local level, people will learn that wetland restoration not only provides benefits for nature (increasing biodiversity) but could be a valuable source of income for the local economy as well.

Poverty is a common issue for the communities of the Danube Delta where people rely on natural resources and have limited opportunities for improving their quality of life. While poverty in Moldova persists, the country has made significant progress in achieving Millennium Development Goal 1: the poverty rate (\$2.15 PPP per person per day) decreased from 45% in 2000 to 13.2% in 2006, which is very much linked to the robust economic growth rates registered by the country in the last years. In Ukraine, despite robust economic growth since 2000, 28% of people still live below the poverty line of UAH430 (\$90) per person per month, according to official statistics.

By using biomass provided by natural and restored wetlands in the Danube Delta as a source of green energy, new opportunities will be offered to local people, interested entrepreneurs (tourism, reed

harvesting, fishery and agriculture) to sustain their livelihoods. Green energy generation will also contribute to reducing carbon footprint in selected pilot areas. The action is expected to reduce costs for heating arising from the use of fossil fuels. The cost of coal used by the local people is estimated at ca 900 UaH/tonne, while the expected cost of the reed briquettes is expected to be ca 300 UaH/tonne (Interecocentre, 2009). Also importantly, expenditure on energy will remain in the local economy. Thus, the action is expected to generate a local mechanism reducing heating costs for local people and creating new jobs and income at pilot briquetting and heating installations.

A strategic assessment of the Danube Delta potential for green energy sources and a feasibility study on best alternatives for green energy production and nature conservation will be elaborated and will help identify at least three sustainable economic mechanisms for carbon neutral energy generation based on biodiversity conservation and values of ecosystem services.

In parallel, representatives of local communities and of the business sector from all the 3 Raions of the Danube Delta (Reni, Izmail and Kilia) will be selected according with their interest and influence in the region, trained and provided with information on the use of biomass for energy production. The efficiency of the mechanism will be demonstrated at least at one pilot site. From previous discussions of WWF team with representatives of the local communities and local business, there is high interest to participate in the trainings and be involved in the project's activities.

### **Target Groups (Expected Result 3)**

The target groups are the local communities (20 communities from the 3 Raions Reni, Izmail, Vilково) and private entrepreneurs (8 SME from agriculture, tourism and fisheries sectors) participating in the two workshops. It is expected that about 100 people will participate in the training sessions. Currently there is limited understanding of the ecosystem services and awareness of the opportunities to use renewable sources of energy, like biomass. Being directly involved in the implementation of the project, the target groups will:

- have increased knowledge about green energy sources and their use
- have increased knowledge about carbon footprint and solutions to reduce it
- test the feasibility of biomass production for green energy mechanism
- have increased understanding of biodiversity conservation and climate change adaptation measures
- better appreciate the ecosystem services provided by wetlands and be willing to implement restoration measures around their communities

### **Final beneficiaries (Expected Result 3)**

20 local communities (villages in the Raions Reni, Izmail, Vilково) represented by decision makers, inhabitants and local entrepreneurs in the Danube Delta will have increased awareness and access to data regarding the potential for renewable energy sources and will have increased and cheaper access to locally produced green energy sources. Interested entrepreneurs will be provided with direct support to initiate a small scale facility to produce biomass and energy from it as a model for the community.

### **Publications:**

- Strategic assessment of the Danube Delta's potential for renewable energy sources including guidelines for sustainable biomass production
- Feasibility Study on joint green energy production and conservation measures in the Danube Delta
- Business Plan of using biomass for energy production at one pilot site in the Danube Delta

To achieve project **Result 3 Opportunities for income and energy generation from sustainable biomass production (linked to wetlands restoration) as a green energy source are enabled and demonstrated in Ukraine and Moldova**- the following activities will be undertaken:

#### **3.1. Conduct strategic assessment of Danube Delta potential for renewable energy sources**

The availability of renewable energy sources (especially biomass) in the Danube Delta has never been assessed in a systematic way to enable opportunities of using these sources by local communities. Traditionally, reed was used in the Danube Delta mainly for roof thatching, fences, as a food source for animals but less as an energy source. A strategic assessment will be conducted to document the

potential of the Danube Delta for renewable energy sources. The assessment will take into consideration the biodiversity conservation priorities of the Danube Delta and will investigate the impact of restoring wetlands to enhance the quality of the habitats and to provide sustainable energy sources for the local communities.

The results of the assessment will be integrated with the results of the assessment of the wetlands restoration potential (Activity 2.4.) to help formulate viable recommendations and guidelines for sustainable use of biomass as an energy source.

Reed harvesting (for export to other European countries for roofing materials) is becoming an increasing economic activity in the Danube Delta and could become unsustainable in the absence of accurate reliable information about the resources availability and management rules. These guidelines will help the managers of the Danube Delta Biosphere Reserve in the decision-making process for the management of biomass resources. At the same time, biodiversity standards (sustainable harvesting based on carrying capacity, regulation of harvesting period and methods) linked to biomass supplier contract will be incorporated in the guidelines.

The activity will be coordinated by the Centre of Regional Studies (Partner 2) and supported by the Danube Biosphere Reserve (Partner 1).

### **3.2. Conduct a feasibility study regarding the implementation of a joint energy and conservation plan and for designating pilot project places**

The Strategic assessment of Danube Delta potential for renewable energy sources and the Assessment of wetlands restoration potential will be the basis for a Feasibility Study that will analyse the environmental implications, the economic viability of using reed biomass as an energy source, the available technologies, funding sources (e.g. Joint Implementation projects, ENPI, private or public funds) as well as identifying pilot project places for initiating and testing such mechanisms. The feasibility study will focus on assessing the energy needs of the local marginal communities within the Danube Delta (villages will be selected to sample different situations: level of income in the community, vulnerability to natural disasters, level of participation in the decision making process) and on providing mechanisms to increase their life standards, taking into consideration the market potential for biomass products.

At least three pilot project sites will be designated where it is possible to propose sustainable, nature conservation based mechanisms to: 1) decrease energy costs and dependency, 2) start local biomass production, and 3) link biomass production to biodiversity and landscape restoration. In principle, the sites will be selected based on local interest, access to natural resources, energy needs, but the result of the study will provide a better understanding of the feasibility of promoting the use of green energy sources at the community level.

The Activity will be coordinated by WWF HU (Partner 3), who has valuable experience in implementing biomass projects along the Tisza River and Danube Biosphere Reserve (Partner 2). The Feasibility Study will be developed by a group of international experts working closely with local/national experts.

### **3.3. Build capacity at local level (decision makers, inhabitants, entrepreneurs) on small scale biomass production and utilization at one pilot location**

The results of the Feasibility Study will be presented and discussed at local level with key decision-makers, interested entrepreneurs and inhabitants. Opportunities for starting a pilot project will be investigated. Local communities in the Danube Delta are not aware of the necessary steps to initiate small-scale biomass production and of the feasibility of such an initiative within the local context, considering the availability of the natural resources, special local conditions, regulations, market opportunities for existing facilities to use biomass as energy sources.

Two workshops (targeting ca 100 representatives of the local communities – decision makers, local entrepreneurs, inhabitants) will be organised in two communities, identified with high potential to initiate small scale biomass production and utilisation as energy source. The workshops will provide a good basis for gaining support from relevant stakeholders to demonstrate the feasibility of small scale energy production at one selected site, for which a detailed business plan will be developed (Activity

3.4.). The results of the feasibility study will be presented during the workshop as well as success stories and projects from other countries. The experience of WWF HU in implementing a similar project on Tisza will be presented to participants. The project is considered a success in Hungary, combining wetland/floodplain restoration with energy production from using biomass from an invasive plant (*Amorpha fruticosa*). The activity will be coordinated by WWF HU (Partner 3) with support from Danube Biosphere Reserve (Partner 1), who will facilitate the communication and exchange of information at the community level.

### **3.4. Develop a business plan for pilot application in cooperation with interested investor/s**

The two workshops organised at the community level (activity 3.3) will provide a good opportunity to identify one pilot community/location willing to start a pilot application for biomass production and use as energy source. The main criteria will be the willingness and openness of the community to have such energy system and the interested and initiative of local entrepreneurs to start. For this location, a detailed business plan will be developed to assess the feasibility of a small-scale biomass production (production of reed briquettes) and of suitable facilities for producing the energy (heating systems). The business plan will provide information about the necessary equipments (type, productivity, power, price, suppliers) and about the operational costs and profitability of the investment (production costs, profit and payback of the investment).

WWF HU (Partner 3) will coordinate this activity with support from Danube Biosphere Reserve (Partner 1), who will facilitate communication and exchange of information a community level.

### **3.5. Provide support for producing local biomass and generating green energy at one pilot location**

The implementation of previous activities will have created the framework for the practical implementation phase. The availability of green energy sources in the Danube Delta as demonstrated in the assessment study (activity 3.1); the feasibility of linking Danube Delta wetland restoration potential with the opportunity to improve access to natural resources (reed biomass) (activity 3.2) by restoring degraded areas identified in the Restoration Action Plan (activity 2.4) – this all will be presented to key stakeholders during the workshops at community level (activity 3.3). One community will be selected to develop a small-scale facility for green energy production and a business plan developed.

Based on the feasibility study (activity 3.4) and on the willingness of a local entrepreneur, support (technical and legal advice) will be given to initiate a small biomass production facility at one specific location to be selected (Visitor Centre, school, community center, etc). This will serve as a case study to actually test the feasibility of biomass based green energy production as a mechanism to support poverty alleviation of marginal villages within Danube Delta. A Memorandum of Understanding will be signed with the interested community/entrepreneur. A briquetting machine and a heater will be purchased and installed at the selected location.

The activity will be coordinated by WWF HU (Partner 3) with support from WWF RO and the Danube Biosphere Reserve (Partner 1).

### **3.6. Organise a workshop with key representatives of local Danube Delta communities and business sector to investigate magnification potential of biomass production and use in the region**

By the end of the project, a final workshop gathering ca 150 participants (local authorities, local entrepreneurs/inhabitants, representatives of biomass business sector) will be held in Vilkovo (Ukraine) to present the project results, share lessons learned, success stories, and identify opportunities to replicate/magnify the use of biomass-based green energy mechanism as a sustainable source of energy for the local communities of the Danube Delta (linked with biodiversity conservation, wetlands restoration, CO<sub>2</sub> reduction and climate change adaptation). Results from previous activities (Feasibility Study, Business Plan, Wetlands Restoration Plan, and Vulnerability Assessment) will be shared with the participants as well as similar experiences from other areas from the Danube countries brought by key speakers (successful business/entrepreneurs).

It is expected that the workshop will encourage other actors to start similar initiatives in their community, thereby increasing the share of their energy needs from locally produced biomass and ultimately becoming part of the biomass market.

The activity will be coordinated by WWF RO, in partnership with WWF HU (Partner 3) and Danube Biosphere Reserve (Partner 1).

#### **Cross-cutting Expected Result 4: Effective communication and visibility of project results;**

##### **4.1. Communication and visibility of project results and objectives**

A Communication and Visibility Plan will be developed with the following objectives:

- to support the achievement of the project's expected results and objectives
- to create multiplier effects and sustainability beyond the project duration
- to ensure the visibility of the action and the EC funding (cf section 1.4)

This plan is different from the Communication Strategy to be developed under Activity 2.1, which sets the framework for communication activities aiming at raising awareness on climate changes adaptation and biodiversity conservation. The Communication and Visibility Plan will focus on projects activities and achievements. It will be designed so as to include the most appropriate, country-specific communication and visibility activities. The main target groups of the project will be also targeted by the communication and visibility activities.

The communication and visibility activities will be carried out in close co-operation with Delegations of the European Commission in Ukraine and Moldova and all printed materials and webpage documents will wear the EU disclaimer and appropriate logos.

A project website will be created in three languages (Romanian/Moldovan, Ukrainian, English) and regularly updated by a professional company. The information posted on the website will document the project implementation status and present key results and achievements as well as the regular reports and a photo gallery.

Media work (press releases, press conferences, audio and visual appearances) will be planned to mark project's achievements, as support for the Climate Change awareness raising campaign and will also take advantage of other opportunities to communicate projects activities (e.g. regional and local events, public meetings, etc.)

A brochure outlining the project's objectives, activities and local community buy-in will be printed (2000 copies) and will also be available in electronic format. The brochure will be published in all national languages and in English. Additional information materials will be produced respecting EC visibility guidelines, including banners to be used for workshops, trainings, community meetings, international conference. The activity will be coordinated by WWF RO with support from all project partners.

##### **4.2. Organise an international conference to share lessons learned, project's results and promote Danube Delta as a model for Climate Change adaptation and sustainable development**

The action can be seen as a starting point for addressing climate change and biodiversity in an integrated manner that can provide benefits to both nature and local communities in the Danube Delta.

Experience and lessons learned during project's implementation will be shared with international organisations in a conference which will gather representatives of the target groups and beneficiaries of the project together with representatives of key international institutions (ICPDR, IAD, international NGOs, research institutes)

Key speakers for climate change and green energy topics will be invited to share their expertise with the 150 participants at the conference. The conference will benefit from targeted visibility actions (interviews of key speakers, international organisations, governmental representatives, business representatives, press releases). The EC Delegations in the beneficiary countries will be invited. The activity will be coordinated by WWF RO with the support of all project partners.

### 4.3. Dissemination of project results in International Commissions and Fora

The meetings and events regularly held under the International commission for the Protection of Danube River, its equivalent body for the Black Sea – The Black Sea Protection Commission and their common Task Force – DABLAS represent excellent opportunities for disseminating the project's results (interim and final reports) and for lobbying and advocating for sustainable development of the Danube Delta with emphasis on challenges and opportunities provided by climate change impacts in the region. WWF has an observer role in the ICPDR.

The Eastern Partnership Civil Society has been established by the European Commission in the context of increased cooperation between the EU and Eastern neighbouring countries. As a member of Working Group 3 – energy, climate change and environment, WWF will be in a good position to publicise the project's achievements to other NGOs, donors, etc. within the Forum.

The recently announced RAMSAR Regional Initiative on Black Sea Coastal Wetlands (BlackSeaWet), aimed at strengthening international and national cooperation for the conservation and sustainable use of the Black Sea surrounding wetlands presents another opportunity. WWF is a member of the Management Body. This activity will be coordinated by WWF RO, but partners will be given equal opportunities to present significant results from the project implementation at relevant meetings and events.

## 1.2. Methodology

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### **Methods of implementation and reasons for the proposed methodology:**

**Know-how transfer and exchange of best practice** in water resource management and response to the effects of climate change. This will be done through exchange of information and experience accumulated by the partners and drawing lessons from relevant experience from the EU. Representatives of the target groups will learn of experience and know-how during workshops, trainings and stakeholder meetings. Meetings of the Danube Delta Expert Working Group are also seen as a means to exchange data, information and know how. The workshops will be arranged in an interactive manner to get Ukrainian, Romanian and Moldovan experts and stakeholders working together to recognise shared problems and develop shared solutions from their experience as well as from abroad. This will help build a mechanism for local involvement and ownership for the project and its implementation. Also important will be the involvement of the ICPDR, particularly its experience in the development of the Danube Basin Analysis (WFD Roof Report 2004), the Analysis of the Tisza River (2007) as well as the Danube River Basin Management Plan and the Tisza River Basin Management Plan (finally adopted in February 2010). Transfer of innovative mechanisms already implemented in other countries outside the Danube Delta (energy production from invasive plants on the Tisza River in Hungary) will be used in local workshops and meetings. This is essential for building capacity, improving management capacities and opportunities for better decision-making in the field of the management of water and land resources in the Danube Delta Sub-basin by regional and local governments as well as for strengthening cross-border cooperation.

**Multi-sectoral approach.** A significant element of the project is the development of a trans-boundary Climate Change Adaptation Strategy and Action Plan for the Danube Delta Sub-basin. The integration of sectoral studies will provide a holistic approach to the management of the Danube Delta Sub-basin, taking into consideration economic and social development linked to the protection of landscapes, biodiversity and ecological balances, promoting win-win solutions for nature and local communities.

**Promotion of sound decisions based on best available scientific information.** The studies developed as part of the project, based on sound scientific data will serve justifying decisions during project implementation, and especially for sectors like green energy will provide information about the market and feasibility of initiatives, essential when addressing interested entrepreneurs and promoting such mechanisms. Reliable and good quality data will be essential to build up credibility of stakeholders and influence the decision-making process.

**Learning by doing.** By implementing joint activities and being involved in the project events, project participants and local experts from Romania, Ukraine and Moldova, representatives of local and regional authorities and the other categories of target groups will learn and develop methods of

collaboration, joint processing and exchange of data and information (during trainings, workshops, meetings of the DDWEG, starting a small-scale facility on biomass production). This method is considered to be especially useful as the groundwork for the development of a joint vision needed for the development of a trans-boundary Climate Change Adaptation Strategy and Action Plan for the Danube Delta Sub-basin and will be used to facilitate water and nature managers' self-development and their capacities for regular self-education and improvement of their professional skills.

**Taking advantage of strategic partnership.** For wider dissemination of information and the outputs the facilities of the Lower Danube EuroRegion and the Danube Environmental Forum (DEF), that involves the Centre for Regional Studies (Partner 2) as a member organisation, will be involved. The Centre for Regional Studies' membership in the National Association of Regional Development Agencies of Ukraine (NARDA) and good cooperation with the State Committee of Ukraine for Water Management will also be used to multiply achievements of this project in other regions of Ukraine. In Moldova, Ecospectr (Partner 4) works in partnership with REC (Regional Environmental Centre) to promote environmental protection through awareness raising programmes and campaigns, and could use this platform to disseminate the project's results. At international level the project will be disseminated at ICPDR, DABLAS and other relevant fora, in order to build on existing efforts in the region and create synergies with related initiatives.

**Dissemination of information and project results.** The outputs from the project, such as a trans-boundary Climate Change Adaptation Strategy and Action Plan for the Danube Delta Sub-basin, key publications, information about events and activities, will be presented to the target audience and to the local community through presentations during the workshops, public hearings and through the media and website.

### **Role and participation of target groups**

**Target group 1: Public authorities responsible for the management of water resources, environmental management and emergency planning and management in the Danube Delta Sub-basin.** These institutions have a key role in the project as they are implementing the national environmental policies at different levels and could integrate the information and knowledge gained through trainings, workshops participation into the management process. Strategies and studies like the Danube Delta climate Change Adaptation Strategy and Action Plan, Vulnerability Assessment Study, Danube Delta Potential for wetland restoration and Action Plan, Feasibility study on biodiversity-based green energy mechanism, will allow them to integrate climate change issues into their plans and to shape them accordingly. Currently, a certain communication exists between institutions belonging to the same sector, but there is no effective communication across sectors and borders. This will be addressed by the project activities (e.g. Danube Delta Working Expert Group).

**Target group 2: Regional and local governments.** This target group provides the link to the local communities. Having acquired increased awareness and capacity to understand climate change adaptation risks, their role will be to promote this further at the community level, to increase the transparency of the decision-making process and to support local initiatives.

**Target group 3: scientific research community.** Expert knowledge and advice is necessary for developing the Danube Delta Climate Change Adaptation Strategy and Action Plan, the Vulnerability Assessment, the assessment of the Danube Delta wetland restoration potential and Action Plan, Assessment of Danube Delta green energy sources and Feasibility studies on biodiversity-based green energy mechanisms.

**Target group 4: local environmental NGO and other non-governmental organisations.** The representatives NGOs in the region will be involved in the Climate Change Public Awareness Campaign and will have a consultative role in the activities implemented at the community level. The Lower Danube Euroregion will also be used as a platform for communicating project results, sharing lessons learned, lobbying for coherent climate change adaptation plans to be integrated with the region's development plans.

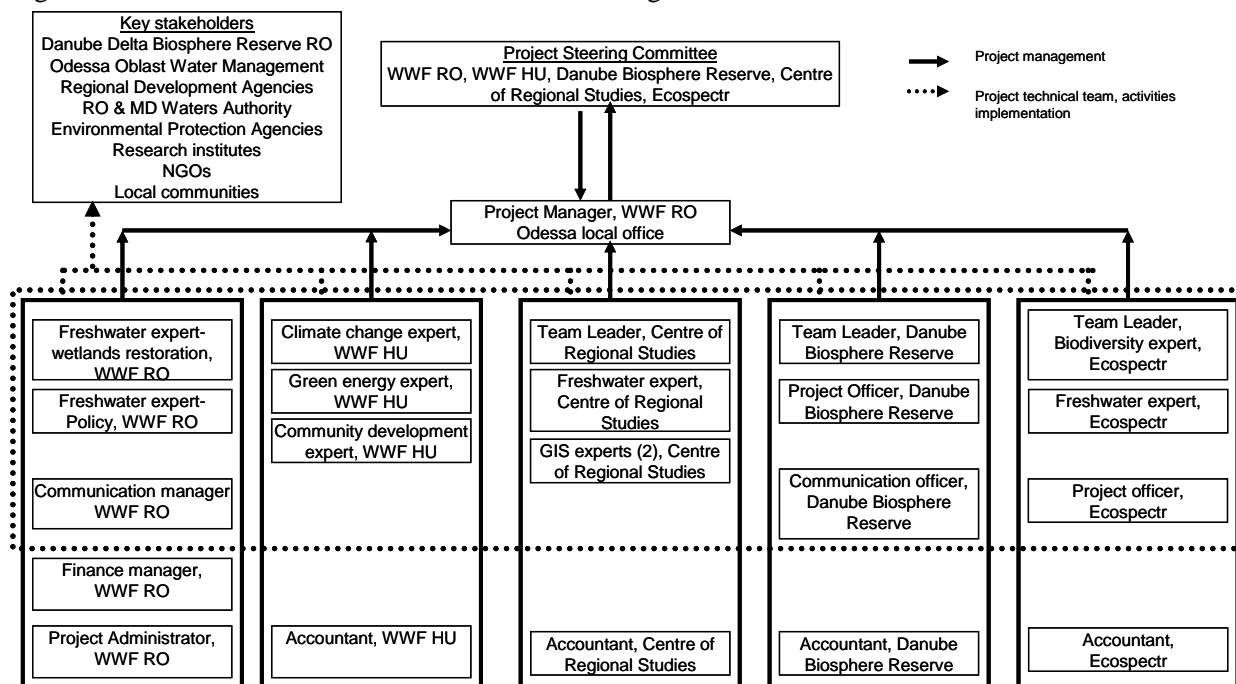
**Target group 5: local communities:** Project activities are designed to benefit local communities by demonstrating sustainable alternatives for income generation from biodiversity-based green energy mechanisms. Local people are vulnerable to climate change risks and their level of awareness of these risks will be increased during the project. Their involvement in local governance is critical to ensuring real buy-in of conservation and sustainable development activities.



**Target group 5: Private entrepreneurs** (tourism, reed harvesting, fishery and agriculture): Private entrepreneurs (tourism, reed harvesting, fishery and agriculture) have direct or indirect access to natural resources and therefore impact the availability of these resources in the future. If their business depends on the availability of the natural resources, in a climate change context, their business will be at risk as well. Because of their important role, private entrepreneurs will be targeted by awareness-raising and training activities regarding biodiversity based opportunities for private investments and benefiting from feasibility studies results on green energy production.

### **Project implementation team**

The project will be implemented by an international team, including staff members from each partner organisation. The team is structured in three main categories:



### **Visibility of the action and the EC funding**

To ensure that the project visibility is compliant with EC requirements, a Communication and Visibility Plan will be developed following recommendations from the Communication and Visibility Manual for European Union External Actions (2008).

The main communication activities to ensure the visibility of the action are:

- Project website in national languages and English
- Media work (Press releases, Press conferences, interviews)
- Project brochure in national languages and English
- Banners

As a visibility action, any document, publication or materials produced in the framework of this project will mention the project name acknowledge its funding by the European Commission.

### 1.3. Duration and indicative action plan for implementing the action

The duration of the action will be 36 months.

#### Workplan Year 1

No.	Activity/month	Year 1												Implementing body	
		semester 1						semester 2							
		1	2	3	4	5	6	7	8	9	10	11	12		
Expected result 0 – Project management and coordination															
0.1	Project inception meeting														WWF RO
0.2	Appoint the Project Steering Committee (PSC)														WWF RO
0.3	First Project Steering committee meeting														WWF RO
0.4	Project monitoring and evaluation														WWF RO
Expected result 1 – Increased regional cooperation to develop and implement a regional trans-boundary Climate Change Adaptation Strategy and Action Plan.															
		1	2	3	4	5	6	7	8	9	10	11	12		
1.1	Initiate process for establishing Danube Delta Working Expert Group (DDWEG)														CRS
1.1	First annual meeting of the Danube Delta Working Expert Group														CRS
1.2	Develop outline and ToRs for the Danube Delta Vulnerability Assessment														CRS
1.2	Define information needs and agree on data collection														CRS
1.2	Select experts and initiate the study														CRS
1.2	Experts start collecting data and developing the vulnerability assessment														CRS
1.3	Develop outline and ToRs for the Danube Delta Climate Change Adaptation Strategy														WWF RO
1.3	Identify information needs and experts														WWF RO
1.3	Start data and information collection														WWF RO
1.3	Select experts and initiate the study														WWF RO
1.3	Content of the strategy presented at the first DDWEG meeting														WWF RO
1.4	Develop ToRs for the Danube Delta wetlands restoration assessment														CRS
1.4	Prepare GIS data and acquire missing information														CRS
1.4	Evaluation of current land use of the floodplain														CRS
1.4	Start producing thematic maps														CRS

1.4	Evaluation of the restoration potential (will continue in Year 2)															CRS
<b>Expected result 2 – Strengthened capacity of local nature and water managers and increased awareness of local stakeholders in the Danube Delta sub-basin to address climate change and apply methodologies for adaptation and mitigation in pilot areas</b>																
		1	2	3	4	5	6	7	8	9	10	11	12			
2.1	Develop communication strategy															WWF RO
2.2	Develop concept and road map of public awareness campaign															WWF RO
2.3	Approach advertising agency and discuss audio and video clips concepts															WWF RO
2.2	Produce audio and video clips															WWF RO
2.2	Vilkovo Visitor Centre exhibition – preparation															DBR
2.2	Vilkovo Visitor Centre exhibition – opening															DBR
2.2	Climate Change Public Awareness campaign launched															WWF RO
2.3	Develop ToRs for the training package															WWF RO
2.3	Contact and contract experts and facilitator for the training programme															WWF RO
2.3	Training course package preparation															WWF RO
2.3	Organise first training session in Moldova															WWF RO
2.3	Organise first training session in Ukraine															WWF RO
1.1	Second annual meeting of the Danube Delta Working Expert Group															CRS
<b>Expected result 3 – Opportunities for income and energy generation from sustainable biomass production are enabled and demonstrated in Ukraine and Moldova</b>																
		1	2	3	4	5	6	7	8	9	10	11	12			
3.1	Develop ToRs for the strategic assessment of Danube Delta green energy sources															CRS (supported by DBR, WWF HU, Ecospectr)
3.1	Start collecting information and data															CRS(supported by DBR, Ecospectr)
3.1	Data analysis and mapping (will continue in Year 2)															CRS (supported by DBR, Ecospectr)
<b>Expected result 4 - Cross-cutting communication activities</b>																
		1	2	3	4	5	6	7	8	9	10	11	12			
4.1	Develop project communication and visibility plan															WWF RO
4.1	Webpage design and initialization															WWF RO
4.1	Media work (Press releases)															WWF RO
4.1	Production of information materials															WWF RO

[illegible]

3.3	Build capacity at local level on small scale biomass production and utilization in one pilot location												WWF HU
3.4	Develop a business plan for pilot application in cooperation with interested investor/s												WWF HU
3.5	Provide support for producing local biomass and generating green energy at one pilot location												WWF HU
3.6	Workshop to investigate magnification potential of using biomass-based green energy production in the region												WWF HU
<b>Expected result 4 - Cross-cutting communication activities</b>													
		<b>14</b>	<b>16</b>	<b>18</b>	<b>20</b>	<b>22</b>	<b>24</b>	<b>26</b>	<b>28</b>	<b>30</b>	<b>32</b>	<b>34</b>	<b>36</b>
4.1	Project webpage update (4.1.)												WWF RO
4.1	Media works (Press releases) (4.1.)												WWF RO
4.3	Interventions at ICPDR and Black Sea Commission EG meetings												WWF RO, (WWF HU, CSR, DBR, Ecosp)
4.2	Organise an international conference to share lessons learned and project's results and promote Danube Delta as a model for Climate Change adaptation												WWF RO, (WWF HU, CSR, DBR, Ecosp)
<b>Project closure</b>													
0.4	Final evaluation of the Steering Committee												WWF RO
0.4	Final evaluation												
0.4	Final report development and submission												WWF RO
0.4	Final expenditure verification												WWF RO

## 1.4. Sustainability

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### Expected impact of the action

The action is expected to generate benefits at the community level by addressing the main factors that influence/determine the level of poverty (poverty line) and quality of life:

- Low level of income – the project will offer a model for sustainable income generating by using reed biomass for green energy production (jobs creation, business development);
- Vulnerability to natural disasters (e.g. floods and other natural calamities) – wetlands restoration is the „green infrastructure,, measure promoted for climate change adaptation through the project and support will be provided at one pilot location to initiate restoration activities;
- Limited participation in decision making processes – is addressed by the project through meetings and workshops at the community level, involving inhabitants and local authorities
- Lack of support to improve living standards – at two selected places the project will provide support for implementation of a restoration project (Feasibility Study) and for initiating a small-scale facility to generate green energy by using reed biomass.

The action represents a starting point for sustainable further improvement of the living standards of the people living in the Danube Delta offering a good basis to the communities to:

- Leverage the momentum created by the action and further improve energy efficiency and reduce energy costs by developing biodiversity-based green energy mechanisms;
- Take necessary steps to cover a significant proportion of the local energy needs from green energy sources;
- Enter the bio-energy markets as biomass suppliers and generate additional sources of income.

The action will directly contribute to the restoration and better management of ca. 3000 ha of degraded wetland of Stensovsko-Zshebriyansky Plavni, part of the Danube Biosphere Reserve in Ukraine. Should the case study that links reed harvesting for biomass to restoration of degraded wetlands become a credible example, there is potential to expand the mechanism to an additional 26 000 ha of degraded wetlands in DBR (40% of its territory) as well as several other large wetland areas in Ukrainian delta and in Romania and Moldova, where similar etherification problems exist (the figures were provided by the Danube Biosphere Reserve). The action is expected to reduce the costs for heating arising from the use of fossil fuels. The cost of coal used by the local people is ca 900 UaH per tonne while the expected self cost of the reed briquettes is expected to be ca 300 UaH per tonne. Thus, the action is expected to create a local mechanism reducing the cost for heating to the local people and creating new jobs at pilot briquetting installations as well as a small heating plant.

The current local and regional (trans-boundary) development policies, strategies and plans in the Danube Delta do not consider climate change risks. Efforts to address climate change adaptation are limited in Ukraine and in Moldova, usually isolated projects at local level (small-scale or individual initiatives to use green energy sources). There is no previous action that addresses climate change in such an integrated manner for the Danube Delta area. The Danube Delta Climate Change Adaptation Strategy and Danube Delta Management Plan will provide a basis for mainstreaming climate change adaptation into National Strategies in Moldova and Ukraine and for promoting EC environment and energy policies and together with the Vulnerability Assessment will be the first documents of this type in the Lower Danube countries. Through the action, for the first time key stakeholders (of more than 30 institutions) and representatives of the local communities (20 communities) will have better understanding of how they are being affected by the climate change and what adaptation measures may be taken to ensure sustainable development of the Danube Delta.

### Dissemination plan and possibilities for replication and extension of the action

An international conference gathering 150 participants from the Lower Danube countries will be organised in cooperation with the ICPDR to share the main results of the project related to the climate change adaptation strategy. Concrete examples of successful initiatives of sustainable energy generation using biomass will be presented at the conference to the main decision makers and stakeholders. The studies developed during the project will be communicated and made available to policy makers, but non-technical summaries will also be available for the general public.

Sustainable energy mechanism based on biomass harvesting on the Danube floodplains will be presented and shared at a special workshop organised for the business sector and community representatives from the Danube Delta. Along with the information regarding possible sustainable energy technologies, the participants of the workshop will also learn about the feasibility of magnifying sustainable energy mechanism to other wetland areas in the Danube Delta. The feasibility study under activity 3.2 will provide a basis for discussion on where else biomass harvesting for energy may be introduced. The information on available technologies of briquetting the biomass and use of briquettes for heating will be presented at the Visitor Centre of Danube Biosphere Reserve on a permanent basis. Local producers of relevant equipment and available technologies will be publicly available through the Visitor Centre for the local people and businessmen. Also the benefits of biomass production and biodiversity conservation will be properly explained and interpreted at the centre to increase public awareness and generate support to conservation activities of the Danube Biosphere Reserve.

### **Project sustainability**

The project is designed to support and promote participatory community development planning and to empower local communities in the Danube Delta to influence their own decisions regarding the region's future in a changing environment. By linking their development needs to the available innovative and "green" solutions (green energy sources, green structural approaches for wetlands restoration, sustainable economic activities based on biodiversity conservation), local communities can ensure the long-term sustainability of their community development.

- **Financial sustainability**

Local entrepreneurs will be provided with information, know-how and technical support to develop project proposals to access funds for sustainable rural development and cross-border cooperation. If successful, these applications could ensure the basis of continued and increasing pro-biodiversity business initiatives in the area. The investment fund included in the project is the initial "spark" to encourage local development initiatives. The sustainable models for green energy generation through biodiversity conservation demonstrated by the project can then be replicated and magnified in other areas of the Danube Delta. A pilot heating facility will continue to function in a local school in Vilkovo, which will serve as a focus for raising public awareness regarding available technologies for sustainable energy. A local business enterprise in Vilkovo will carry on operating a reed briquetting installation drawing on reeds sourced from degraded areas in the Danube Delta Biosphere Reserve. The key beneficiaries from this project are public authorities and institutions responsible for water and environmental management in Ukraine, Romania and Moldova funded from public budgets. They will be in place after the project ends and continue activities conducted in the framework of this project. The non-governmental participants of the project are sustainable organisations providing their services on a professional and long-term basis. They are closely involved in environmental protection and management in the project area and plan to continue project related activities into the future.

- **Institutional sustainability**

The Danube Delta Expert Working Group will play an essential role in generating follow-up activities using the valuable information from this project as its basis (assessment of wetlands restoration potential, feasibility study on joint green energy and conservation plan), as well as results of previous WWF projects (study on floodplain restoration potential along Lower Danube, Vision for the sustainable development of the Danube Delta) and Partner's projects (Emergency Planning and Flood Protection in the Lower Danube EuroRegion, Integrated Monitoring systems for the Danube Delta Biosphere Reserve). The strategic partnership created between key public authorities and other stakeholders will be maintained and consolidated through follow-up activities after the end of life span of the project.

**Local ownership of the project's outcomes:** all results and outputs from the project will be shared by the beneficiaries and stakeholders, including common approaches, knowledge and experience gained. All these will be available in the region during the project implementation and after its end.

- **Policy sustainability**

The Danube Delta Climate Change Adaptation Strategy and the Action Plan will be effectively implemented after the project end through measures transposed/mainstreamed into regional and local development plans, supported by relevant policies and regulations. Within this context, the project contributes significantly to the international management of the Danube River Basin by the Danube countries in the framework of the ICPDR. The Climate Change Vulnerability Assessment Study for

the Danube Delta sub-basin and the trans-boundary Climate Change Adaptation Strategy will serve as the long-term basis for sound decision making and could be effectively integrated into the second cycle of the Danube River Basin Management Plan (DRBMP).

The project also provides a good opportunity to improve the decision making process related to environment and sustainable development in the region at national, regional and cross-border level due to better understanding of risks from climate change and updated data and information on the status of water and water-related resources in the area.

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