

**ANNEX II – Terms of Reference**  
*"Contribution to the development of the flood risk management strategy"*

**ROMANIA**

---

**Ministry of Environment and Sustainable Development**

*"Contribution to the development of the flood risk management strategy"*

PHARE 2005/ 017- 690.01.01

---

**2007**

**ANNEX II – Terms of Reference**  
*“Contribution to the development of the flood risk management strategy”*

**Contents:**

**0. ABBREVIATIONS**

---

|   |           |
|---|-----------|
| <b>1. BACKGROUND INFORMATION</b>                    | <b>4</b>  |
| 1.1 Beneficiary Country                             | 4         |
| 1.2 Contracting Authority                           | 4         |
| 1.3 Relevant Country Background                     | 4         |
| 1.4 Current State of Affairs in the Relevant Sector | 6         |
| 1.5 Related Programmes and other Donor Activities:  | 11        |
| <b>2. CONTRACT PURPOSE &amp; EXPECTED RESULTS</b>   | <b>14</b> |
| 2.1 Overall Objectives                              | 14        |
| 2.2 Purpose   | 14        |
| 2.3 Results to be achieved by the Consultant        | 15        |
| <b>3. ASSUMPTIONS &amp; RISKS</b>                   | <b>15</b> |
| 3.1 Assumptions underlying the Project Intervention | 15        |
| 3.2 Risks   | 16        |
| <b>4. SCOPE OF THE WORK</b>                         | <b>16</b> |
| 4.1 General project description                     | 16        |
| 4.2 Specific Activities                             | 17        |
| 4.3 Project Management                              | 27        |
| <b>5. LOGISTICS AND TIMING</b>                      | <b>30</b> |
| 5.1 Location  | 30        |
| 5.2 Commencement Date & Period of Execution         | 30        |
| <b>6. REQUIREMENTS</b>                              | <b>30</b> |
| 6.1 Personnel                                       | 31        |
| 6.2 Office Accommodation                            | 34        |
| 6.3 Facilities to be provided by the Consultant     | 34        |
| 6.4 Equipment                                       | 35        |
| 6.5 Incidental Expenditure                          | 36        |
| 6.6 Expenditure verification                        | 36        |
| <b>7. REPORTS</b>                                   | <b>36</b> |
| 7.1 Reporting Requirements                          | 36        |
| 7.2 Submission & Approval of Reports                | 37        |
| <b>8. MONITORING AND EVALUATION</b>                 | <b>39</b> |
| 8.1 Definition of Indicators                        | 39        |
| 8.2 Special Requirements                            | 39        |

---

**ANNEX II – Terms of Reference**  
*“Contribution to the development of the flood risk management strategy”*

**ABBREVIATIONS**

|        |   |
|--------|---|
| CFCU   | Central Finance and Contracts Unit                              |
| ECD    | European Commission Delegation (in Bucharest)                   |
| EU     | European Union  |
| FR     | Final Report  |
| GD     | Governmental Decision   |
| EGO    | Emergency Governmental Ordinance                                |
| IA     | Implementing Authority  |
| IFIs   | International Financial Institutions                            |
| IR     | Inception Report  |
| LEPA   | Local Environmental Protection Agency                           |
| MESD   | Ministry of Environment and Sustainable Development             |
| MTCT   | Ministry of Transport, Constructions and Tourism                |
| MPF    | Ministry of Public Finance                                      |
| NAAR   | National Administration "Apele Romane"                          |
| NGO    | Non Governmental Organisation                                   |
| NIHWM  | National Institute of Hydrology and Water Management            |
| NSMES  | National System for the Management of the Emergency Situation   |
| DESWAT | Destructive Water Abatement Effects and Disaster Control System |
| EIA    | Environmental Impact Assessment                                 |
| WATMAN | Water Management Integrated System in natural disaster cases    |
| SIMIN  | National Integrated Meteorological System                       |
| WD     | Water Directorate   |
| PIU    | Project Implementation Unit                                     |
| PSC    | Project Steering Committee                                      |
| SCFs   | Structural Cohesion Funds                                       |
| SPO    | Senior Programme Officer  |
| STAS   | National Standard of Romania                                    |
| TA     | Technical Assistance  |
| ToR    | Terms of Reference  |



**ANNEX II – Terms of Reference**  
"Contribution to the development of the flood risk management strategy"

## 1. BACKGROUND INFORMATION

---

### 1.1. Beneficiary Country

Romania

### 1.2. Contracting Authority

Central Finance and Contracts Unit (CFCU)  
Ministry of Public Finance  
44 Mircea Voda Street, Bucharest 3, Romania  
Phone: (40-21) 326.55.55  
Fax (40-21) 326.87.30 / 326 87 09

Contact person:  
Ms. Carmen ROSU, Director  
Phone (40-21) 326.55 55  
e-mail: [carmenrosu@cfcu.ro](mailto:carmenrosu@cfcu.ro) / [mariush@cfcu.ro](mailto:mariush@cfcu.ro)

The Contracting Authority is responsible for tendering, contract management and payments.

### 1.3. Relevant Country Background

Romania is located in South-Eastern Europe, in the north of the Balkan Peninsula, on the Lower Danube, within and outside the Carpathian arch, bordering on the Black Sea with a population of about 21.62 million inhabitants (end 2005 estimate).

The Carpathians Mountains are in the centre of the country, bordered on both sides by hills and plateaus and finally the great plains of the outer rim.

The climate is temperate, characteristic of Central Europe (hot summer cold winters, very distinct seasons, and abundant snowfalls especially in the mountains). Warmest areas are in the south and south-east part of the country.

Due to its geographical position, Romania has a great variety of water resources consisting in surface water (interior rivers, natural and artificial lakes, the Danube River) and underground water.

In Romania, the water management system from the quantity and quality point of view is made at the basin level, as follows: Somes-Tisa, Crisuri, Banat, Mures, Olt, Jiu, Arges-Vedea, Ialomita-Calmatui, Siret, Prut and Dobrogea-Litoral.

Due to the strategic importance of the water resources, in the long-time socio-economical development of the country, their planning, management and exploitation is following the waters quality, the exploitation more efficient of the resources and in the same time the elimination and the diminution of the destructive effects caused by floods, the exceeding of humidity or lands slides.

Romania implements the national strategy and policy in the field of qualitative and quantitative management of the water resources, in the purpose of which is operating for the rational use and protection of water resources against exhaustion and degradation and to prevent the destructive effects of waters and the ecologic reconstruction of the water courses. Other important issue is to assure the hydrological and hydro-geological supervision of the water resources.

In Romania, floods occurred more than 1000 years ago. The first flood protection and control works for the population and assets was found since the XIII<sup>th</sup> Century. The first flood protection carried out following a study has been made in 1822, through the building up of an embankment on the left bank of the Mures River.



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

Because occurring of the floods, leading to human losses and material damages, more complex control and prevention works were developed in a sustained manner. At the moment, Romania has a flood protection system including:

- 9920 km dikes, out of which 4880 km, more than 30 years old;
- 6300 km river beds regulation;
- 3160 km river banks protection;
- 2.02 km<sup>3</sup> of high floods attenuation volumes in reservoirs and non-permanent storages (polders).

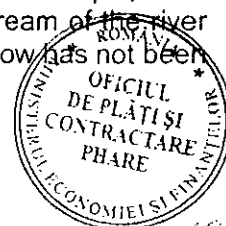
Despite of the control and protection works, floods frequency and damages increased, as follows:

- In 1970 - the rivers overflowing affected mainly the western and central part of Romania. Statistical data were quite confused at that time, but there were over 100 human losses, at least 30,000 households were affected, thousands of km of roads were affected, thousands of bridges and footbridges were affected. The rescue actions had been taken by the military forces;
- In 1975 – the rivers overflowing affected the western part of Romania, 35,000 households were destroyed and 330,000 ha were flooded;
- In 1991 – floods affected mainly Moldova, especially Bacau County. Over 60 human losses were registered, mainly due to the breaking down of a dam in the neighbourhood of Beresti-Tazlau zone. The destroyed houses were rebuild in more secure locations, supported by budgetary funds;
- In 1997 – the river overflowing affected mainly the western and central part of Romania. 18 human losses were registered, 177,000 ha and over 12,000 households were affected;
- In 1998 – 28 human losses were registered mainly within western and central part of Romania. Over 12,000 households were affected.
- In 1999, floods were more severe than the previous. 46 human losses were registered, 341,000 ha and 1287 households were flooded. Almost 2500 bridges and footbridges were affected;
- During the period 2000-2003 floods affected the western, central and northern part of Romania, resulting in 47 human losses, over 600,000 ha and more than 21,000 households flooded. Also there were affected thousands of km of roads and more than 5,000 bridges and footbridges were affected;
- In 2004, the most affected areas were Aries, Mures, Tarnave, Crisuri, Somes, Jiu Barlad, Trotus, and Buzau river basins. About 1.16 million ha and 18,700 households were flooded, 174 social-economical buildings were affected and 19 dead.
- During 2005, the highest floods in the last 35 years, affected Romania. The main cause of the floods was the huge precipitation quantities of extreme extent and intensity, and often with torrential character. Those rainfalls led to the volume rising of the water courses (occurred also on the small streams and on non-permanent water courses), which conducted to the fast increasing of the volumes and levels on the rivers and exceeded the flood levels. Historical high floods occurred, with a probability of incidence of 1 to 1000 years.

During the first 9 months of 2005, three significant waves of floods occurred, as follows: the first in April – May, which affected mainly the South-Western part of Romania, especially Banat area, the second, in July, which affected mainly the southern and eastern areas (Jiu, Olt, Argeş, Siret and Prut river basins), and last flood wave, in August, which affected the north-western, central and eastern part of Romania, respectively Someş, Tisa, Mureş, Olt, și Siret river basins.

Floods occurred on an extended scale during 2005, they affected over 1.5 million people and an important part of the infrastructure. The evaluation carried out by specialists revealed that about 43,000 houses, 4682 bridges, 590 social purposes buildings and 10,334 km of roads were heavily affected.

In April 2006, Romania was affected by floods again. The huge flow of the Danube River has produced great damages along the river course. Even if it is well known that in March and April, each year, the Danube flow grows up due to the rains and ice melting coming from upstream of the river basin, this year the Danube flow exceed the value of about 15,900 m<sup>3</sup>/sec (such a flow has not been



## ANNEX II – Terms of Reference

### “Contribution to the development of the flood risk management strategy”

recorded since year 1897). These floods affected over 21,000 ha, caused 230 houses to be demolished, affected 150 localities and caused 9,500 people to be evacuated, though the authorities have used controlled flooding in order to minimise damages and humans loses.

#### 1.4. Current state of affairs in the relevant sector

The recent floods that have been occurred, revealed weakness of both flood protection techniques and response capacity for the phenomenon (crisis) management. They also showed the vulnerability of communities exposed to risks, proved through weak capacity of response to face the flood effects and also recovery capacity after flood occurrence. All the above mentioned was converted into reasons for changing the perspective regarding flood issue approach and to change from “passive action” into “active action” one, in order to reduce the potential havocs and the vulnerability at floods.

Floods can not be avoided; however, they can be administrated and theirs effects can be reduced by remedial measures and actions aimed at decreasing the risks associated to this phenomenon.

In these circumstances of major events at the society level, generating important damages quantified even in loses of human lives, the Ministry of Environment and Sustainable Development (MESD) decided to take actions in order to limit this damages, by developing the:

- integrated management for high floods or accidental pollutions, carried out by the WATMAN (Informational System for integrated **WATER MAN**agement) project. The system will modernize the monitoring system of dams/reservoirs, will complete the dams warning system and will organize the fast interventions at the hydro technical works, for the protection of populations in the case of high floods or accidental pollutions.
- National Integrated Meteorological System (**SIMIN**). The project will provide essential data for hydrological forecast;
- Automatically Information Hydrological System DESWAT (**D**estructive **W**ater **A**batement **E**ffects and **D**isaster **C**ontrol). The project is aimed to reduce the flood impact, to improve the capacity and to forecast the precision and to use the SIMIN (National Meteorological Integrated Monitoring System) project facilities;

By the finalization of these three projects in water field, it will be realized an integrated system of water management with a great warning and intervention capacity in case of damages.

Another project, developed with World Bank, “**Hazard Risk Mitigation and Emergency Preparedness Project**”- **Flood and Landslide Risk Reduction** – is aimed to support the risk mitigation measures related to floods and dam safety, and to map and model the risk of landslides in Romania in order to reduce losses and provide better land planning implements.

This experience has shown that is time to start the process to reshape and update the existing water management schemes and, in this respect to develop a national strategy for flood control. An important issue which should be clarified is connected to the relation between the flood control activities and implementation of the Water Framework Directive.

In this context, in the Government meeting held on 22 of December 2005, it was approved the *short-term national risk floods management strategy*. This strategy provides with procedures and practices for identification, analyses, assessment, monitoring and administration of the floods risk. The main scope is to mitigate the damages and to prevent human lives losses in case of floods occurring.

There are also included the main actions for the risk floods management: prevention (prevention and protection activities), effective management (during floods phenomena occurring) and actions taken after floods generation.

MESD prepared also the Prefect Manual and the Mayor Manual for administration of the emergency situations. These manuals are informative guides for the district authorities and include responsibilities in administration of the emergency situations, regarding intervention measures,



## ANNEX II – Terms of Reference

### "Contribution to the development of the flood risk management strategy"

population warnings, remedial measures (after floods occurring), endowment with materials and equipment.

The recent floods shows that the *elaboration of the medium and long-term floods risk management strategy* is compulsory for MESD for grounding the future actions regarding the prevention and protection against floods. The new Strategy will be elaborated according to the EU principles and for its better implementation, an Action Plan will be prepared together with the regulations for determination of the level of social accepted risk for human landings. The main characteristic will be a holistic approach of flood management (pre-flood planning, operational flood management and post-flood response) together with the increasing of the non-structural and structural measures for flood defence and with the necessity to incorporate the "human" factors in flood defence planning.

#### 1.4.1. Main authorities involved in managing the floods risk

##### **National Committee for Emergency Situation**

The National Committee is part of the National System for the Management of the Emergency Situation (NSMES). NSMES was set up on the 1<sup>st</sup> of January 2005, in order to ensure the protection of population, for environment, cultural and material values, during the emergency situations, as well as rapid return to the normality.

The National Committee is operating under the Ministry of Administration and Interior and under direct co-ordination of the prime-minister.

The National Committee consist of: decision makers, experts and specialists appointed by ministers, with responsibilities in managing the emergency situations.

The main responsibilities are:

- to declare the emergency at national or regional level,
- to decide about the evacuation plans,
- to establish the modality of co-operation between the structures of the National System and others authorities and bodies,
- to manage the emergency situations,
- to co-ordinate the system of public information regarding the management of the emergency situation, etc.

At the national level, the activity of the National System is supported by: emergency situation committees, General Inspectorate for Emergency Situations, Public services for emergency situations, operative centres for emergency situations and the Active Commander who is in charge with coordinating of all activities.

##### • **Ministry of Environment and Sustainable Development**

The measures that have to be adopted by the MESD are important in reducing the losses and risks produced by the floods. These measures are different according to the stage that they are being implemented: prior, during or after the flood phenomena occurred.

The main responsibilities of the ministry in the field are:

- Elaborating the national flood risk management strategy;
- Making proposals in order to ensure the financial means necessary to cover the expenses for defence materials;
- Co-ordinating the elaboration of a unitary concept regarding the hydraulic works, which are having defence functions;
- Co-ordinating at the national level the activities for defence against floods;
- Initiating the elaboration, modification and enforcement of the regulations related to the defence against floods, dangerous meteorological phenomena, damages of hydraulic works and accidental pollutions ;



## ANNEX II – Terms of Reference

### “Contribution to the development of the flood risk management strategy”

- Co-operating with the specific international organizations, regarding the defence against floods, the dangerous meteorological phenomena, the damages of hydraulic works and accidental pollutions;
- Checking annually the technical status of the hydraulic works in order to establish the measures and the works necessary to increase their safety in operation;

The MESD has under its authority, respectively under its co-ordination, two bodies which are also involved in the emergency situation management:

- **The National Administration of Meteorology** which ensures the elaboration of the prognosis and warnings regarding the dangerous meteorological phenomena;
- **The National Administration “Apele Romane”** which implements the ministry strategy provisions and ensures the technical co-ordination of the activity for defence against floods, through its territorial units; under its subordination is the **National Institute of Hydrology and Water Management**, which ensures the elaboration of the information, prognosis and warnings regarding floods; ensures the operating of the national hydrology network.
- **Ministry of Interior and Administrative Reform** ensures, through the County Council for Emergency Situations, the transmission of the forecasts and warnings, related to the floods, the pursuance and co-ordination of the alarming system, the elaboration of the programmes for protecting the population in case of floods occurrence, the interventions in order to eliminate the floods effects, the collaboration with Operative Centre within MEWM.
- **Ministry of Transport** co-ordinates the elaboration of the flood risk maps for localities, verifies the modality in which the authorities have approved the constructions in the flood affected areas.
- **Ministry of National Defence** co-ordinates the rescue activities in case of emergency situations (disasters caused by floods, earthquakes, radiations, chemical accidents, etc), by using own interventions groups.
- **Ministry of Economy and Finances** ensures:
  - through the state budget, the necessary funds for the implementation of the measures for protection and mitigation of the floods effects
  - the endowment of the hydro-technical structures with hydrometric and meteorological equipments, necessary for the forecast’s elaboration, installation of the alarming-awareness devices for the population and for the objectives placed downstream of the dams;
- **Ministry of Agriculture and Rural Development** ensures, through the National Administration of the Land Improvement, the defence against floods for the embanked enclosures, which are under its management; maintenance of the drain and evacuation systems; elaboration of the plans for defence against floods of the Danube hydro ameliorative systems, etc.
- **Ministry of Health**

The main responsibilities are:

  - to elaborate studies for meeting the health state of the population in the flooded areas;
  - to adopt the antiseptic measures, to check the quality of the drinking water;
  - to analyse the status of the health system after floods occur.

- **Ministry of Education, Research and Youth**

The main responsibilities are:

- to launch research programs;
- to elaborate programs, which have as main purposes the acquirement of a new mentality regarding the water protection and the understanding of the flood phenomena.

- **County Councils for Emergency Situations**

The main responsibilities are:

- to declare the emergency situation at the county level, to ensure the transmission of forecasts and the warnings;
- to follow the risk factors’ evolution, to ensure the intervention means in the critical areas;
- to ensure accommodation and supplies for the hard-hit population.



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

• **Local Councils for Emergency Situations** ensure the permanent staff at the municipal council level, in order to receive and to disseminate the forecasts and the warnings to the population.

• **Mayors and prefects**

~~The main responsibilities are to:~~

- ensure the permanence of the personnel in the town hall, postal-offices and police-posts level;
- ensure the necessary means for population warning;
- co-ordinate the activities for preparation of the population to act in case of emergency situations;
- organize the activities for protection and interventions in case of floods; etc.

• **The owners and the administrators of the water management works** supervise the hydro technical works, the execution of the intervention works for prevention of the damages, take the necessary warning-alarming measures and send the information about flood effects.

• **The citizens**

They must accept that leaving in potentially flooded areas, involve some risks. Therefore, they must adopt own measures for reducing the flood risks on their houses and household annexes. They have to learn how to deal with flood, to learn what to do before, during and after the floods' occurrence.

#### 1.4.2. The legal Framework

At the national level, by its legal competencies, the MEWM is responsible for the management of the emergency situations produced by floods, dangerous meteorological phenomena, accident at the hydraulic structure, accidental pollutions.

The relevant legislation regarding the prevention of emergency situations is the following:

- **GD no. 1489/2004** regarding structure and operation system of the National Committee for Emergency Situation
- **GD no. 1176/2004** regarding statute and operation system of the National Administration "Apele Romane".
- **Law 107/1996** – Water Law, modified by **Law 310/2004**
- **GD no. 1490/2004** for approving the Regulations regarding structure and operation system of the General Inspectorate for emergency situations, modified.
- **Law 481/2004** regarding civil protection.
- **The Governmental Decision (GD) no. 1491/2004** for approval of the framework regulation regarding the organizational structure, duties, running and endowment of the committees and of the centres for emergency situations;
- **GD no. 447/2003** – on methodological norms regarding the model for elaboration and the content of the flood risk maps at national level;
- **GD nr. 1854/2005** for approving the short-term national flood risk management strategy;
- **GD nr. 2288/2004** – on the main responsibilities charring among ministries, other central authorities, non-profit organisations, regarding prevention and administration of the emergency situations- the Ministry of Environment and Water Management responsibilities;
- **Emergency Governmental Ordinance nr. 21/2004** regarding National System for organization, operation and prevention for the emergency situations;
- **Ministry Order 141/SB/03.03.2005** - Regulation for organizing and operating the ministerial committee and the alert centre for emergency situations produced by floods;



## ANNEX II – Terms of Reference

*"Contribution to the development of the flood risk management strategy"*

- **Order 638/420/2005, approved by MEWM and Ministry of Administration and Interior** – regarding the management of the emergency situations produced by floods, dangerous meteorological phenomena, accidents to the hydraulic structures and accidental pollutions.
- ~~GD 1854/22 of December 2005 regarding the approval of the short term national risk floods management strategy.~~

These legal acts contain provisions regarding:

- The organization, operation, responsibilities and necessary endowment for the emergency situations centres and committees at the central and local level;
- The structure and responsibilities of the Ministerial Committee and of the Operative Centre for Emergency Situations within MEWM;
- The responsibilities of the other authorities involved in the management of emergency situations.

### 1.5. Related Programmes and other Donor Activities

Under Phare 1998, the twinning project named **"Strengthening the Institutional and Administrative Capacity to Manage Environmental Policy in Romania in conformity with the Acquis Communautaire"**, has been implemented in the water sector, and has been focused on the achievement of the following main results, regarding 91/676/EEC, 91/271/EEC, 80/68/EC, 76/464/EEC and 2000/60/EC Directives:

- Elaboration of the strategy for the transposition and implementation of the Directives;
- Transposition of the Directives;
- Drawing up the information system for the water management field;
- According support to the local communities for the implementation of the transposed Directives;
- Improvement of the capabilities for the implementation of the transposed Directives.

#### Phare Programme CBC RO/HU 1996

The results of the project **"Floods prevention in the Cris river basin"** were:

- protection of this area against the floods and the reduction the damages produced by them (by a permanent surveillance of the precipitation regime helped by a meteorological radar having as main component a computer for processing data);
- improvement of the management of water resources and of water quality on these three rivers.

This project was finalized.

#### Phare CBC RO/HU 1999: "Flood Prevention in the Upstream Tisa River Basin"

The result of this project was the increase of the anticipation time of the flood wave on the Romanian territory from 1-2 hours to 24-36 hours. The project envisaged the upper basin of Tisa and its tributaries Tur, Viseu and Iza. ~~For many years, they represented some of the most dangerous~~ rivers from Eastern Europe considering the frequency of the floods, which are bringing about different damages every year. The project also promoted the establishment and development of a geographic information system (GIS) and extension of activities concerning flood prevention.

#### Phare CBC RO/HU 2000 "Suplacu de Barcău Permanent Accumulation Basin"

The project aimed to reduce the effects of natural calamities in the flood meadow of the Barcău River and supplying the necessary water during the period of low water.

#### Phare II "Fighting the damages made by the floods in 1998"

The results of this project were as follows:

- Rehabilitation of banks, small bridges and the local road in Poiana Teiului village, Neamt County.



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- Rehabilitation of flood preventing works on Romnai river at Orbic, Neamt county;
- Rehabilitation of flood preventing works on Apa Sarata River, Salaj County;
- Rehabilitation of Craidorolti complex - Varsolt, Salaj County;
- ~~Consolidation of banks and road – Orlatel river at Orlat, Sibiu County;~~
- Repairs at the hydro-technical works on Porumbacu River, Sibiu County;
- Rehabilitation of flood preventing works on Olt River at Bogata, Brasov County;
- Rehabilitation of flood preventing works on Cugir River, Alba County;
- Raising the protection dike on Mures River at Branisca, Hunedoara County;
- Recovery of the dike in Lapusnic, Hunedoara County;
- Recovery of banks and protection works at Baru Mare, Hunedoara County;
- Consolidation of the banks of Mures River at Mandruloc, Arad County;
- Dike rehabilitation on Mures River in Comlod, Mures County.

### The LIFE Project: **“The protection of RIVER LIFE by mitigation of flood damages (RIVERLIFE)-2000”**

The project aimed to reduce the frequency and magnitude of the damages due to floods. For this, comprehensive, realistic and integrated strategies were developed and implemented. The River Management Plan was elaborated for a demonstrative area, being chosen the complex transboundary river system Timis-Bega, for the benefit of more than 1 million inhabitants. The evaluation and forecast of the flood constitute the indispensable premise and the rational basis of mitigation measures program against flood damages, in order to protect life. As the structural and non-structural measures will induce different social impacts, a system of public consultation was established. In any case, if a certain flood risk level is inevitable, this must be known, selected and accepted by the community. In addition, because this knowledge has deep implications in social behaviour, a structural solution was found in order to present this new knowledge under a “negotiable” form: tradable water volumes, and/or land uses, between the different communities and owners living all along the rivers. Proposing different measures, consultation and publication of the river basin plan were done.

### **PSO/PSO+ Programme-Netherlands: “Pilot flood prevention project Suceava County – Upper Bistrita River (September, 2001 - December, 2003)**

The main result of the project was the elaboration of the Flood Management Strategy for Upper Bistrita river catchments, by:

- defining a monitoring and assessment strategy, in line with the Water Framework Directive;
- upgrading of the existing flood warning system, by selecting, purchasing and installation modern measuring and data transmission equipment for two stations;
- improving knowledge on EU Water Framework Directive.

### **Flood Management related to an Integrated Approach to Water Management (pilot project - Jijia River basin);**

The project was implemented between March, 2004 - November, 2005, and the main purpose was to develop:

- The national basin-level flood management system;
- The integrated flood management plan for the Jijia river basin;
- The simulation and forecasting tools;
- The operational plans for the Jijia river basin, making use of flood forecasts;
- The improved knowledge on integrated flood management;
- The spin-off for ditch flood management sector.

### **Phare CES 2005-2006 “The Investment Grant Scheme to support the public sectors initiatives in priority environmental sectors”**



## ANNEX II – Terms of Reference

### “Contribution to the development of the flood risk management strategy”

The project will develop grant schemes with investments in protection against floods.

- Construction of new public assets/infrastructure elements whose role is to provide protection against floods, such as dykes, walls, retention system;
- reconstruction of existing public assets/infrastructure elements that have been identified as being at risk.

#### **SIMIN Project (National Integrated Meteorological System)**

The project is finalized and has been aimed to provide both essential data for hydrological forecast and equipment, which will be used by the national operators (National Administration “Apele Romane”) and by water management systems.

The main results of the project are:

- Setting up of the national network for measurements (60 automatic meteorological stations);
- Setting up of the meteorological radar network;
- Installation of 8 stations for lightning detection;
- Installation of the system for reception of the dates taking over from the meteorological satellite.

**DESWAT Project (Destructive Water) Automatically Information Hydrological System DESWAT.** The project is aimed to evaluate and modernize the present hydrological network by:

- Improving the forecast capacity;
- Analysing the existing systems for identification of the high floods;
- Analysing the selected models for simulation of the high floods.

The project is under implementation.

**WATMAN Project (Water Management Integrated System in natural disaster cases),** will provide support for Water Framework Directive implementation. WATMAN project carried out integration of data and meteorological and hydrological forecasts produced under the projects SIMIN and DESWAT. The project will be implemented in near future.

The main objectives of the project are the following:

- upgrading of the present informational system in water management field and its interconnection with those of the central and local public administration;
- development of operational intervention plans in order to optimise actions of involved stakeholders.

The main results of the WATMAN project will be:

- a complete inventory of the data sources;
- to develop further recommendations on *future data integration* for certification of trans boundary data exchange.

Under this project are to be created 11 coordination centres at river basin levels and 28 centres for interventions, a modern surveillance centre for dams and hydro-technical works as well as its integration in the local administrative network.

#### **WATFRAME Project**

The project is aiming to:

- improve the water urban infrastructure;
- solve the water supply and waste water treatment problems in small and medium localities;
- enhance the number of inhabitants with access to drinking water systems, according European standards;
- fulfil the commitments, assumed for Chapter 22 Environment and at Summit in Johannesburg.

At the moment, the Feasibility Study for the project is under preparation.

#### **Hazard Risk Mitigation and Emergency Preparedness Project”- Flood and Landslide Risk Reduction – project developed in cooperation with World Bank**



## ANNEX II – Terms of Reference

### “Contribution to the development of the flood risk management strategy”

The project aimed to achieve to improve risk mitigation measures related to floods and dam safety. Will be rehabilitated:

- 3 critical Danube River areas;
- 8 selected large and five small dams, another
- 9 flood mitigation schemes;

and

- Landslide risks are mapped and used for land management and planning.

At the moment, there are under selection procedure, the Consultant companies which will elaborate the technical documentation for the works.

**MATRA project (MAT 06/RM/8/4)**, financed by the Netherlands, regarding “The development of a strategy for improving the protection against floods and mitigation of floods risk within Timis river basin”. The project started in 2006 and will be finalised in December 2007.

## 2. CONTRACT PURPOSE & EXPECTED RESULTS

### 2.1 Overall objective of the project

The overall objective of the project is to strengthen the institutional capacities at national, regional and local level in order to manage the emergency situations related to floods and to reduce the related impact.

### 2.2. Purpose

The purposes of the project are the following:

- To develop a medium and long-term risk flood management strategy and an Action Plan for its implementation;
- To elaborate a methodology for drawing up the flood maps and flood risk maps and based on these, to draw up the flood maps and flood risk maps on the sectors defined on the pilot river basin;
- To prepare 3 Cohesion Fund applications for investment projects in the field of floods risk prevention;
- To design a unitary system for information and education of the population within the potential flood risk areas.

### 2.3. Results to be achieved by the Consultant

The expected results of the project are the following:

- A medium and long-term risk flood management strategy and Action Plan, elaborated and approved;
- ~~The methodologies for drawing up the flood maps and the risk flood maps, elaborated;~~
- Flood maps and flood risk maps on a pilot basin developed;
- The Standards regarding the determination of the accepted social flood risk, elaborated;
- 3 Cohesion Fund applications for investment projects, prepared;
- An unitary system of information and education of the population regarding the understanding the floods risk, and an Action Plan for its implementation, developed.

## 3. ASSUMPTIONS & RISKS

### 3.1 Assumptions underlying the project intervention

The following assumptions are critical for the performance of the project in a timely manner and for its successful outcome.



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- No institutional changes to affect proper implementation of the project will occur;
- Completion the tasks according to the time schedule established and budget allocated;
- Smooth and effective cooperation and interaction between all parties involved in the project;
- All the necessary information and data needed for good implementation of the project will be made available.

### 3.2 Risks

The following risks have to be taken into consideration:

- Ineffective communications between authorities and target stakeholders' staff;
- Ambiguous responsibility sharing within the administrative structures involved in project implementation;
- Lack of appropriate staff/ skills/ resources within the administrative structures;
- Inefficient public awareness campaign due to low impact or limited duration;
- Unavailability of data or their poor quality;
- Poor availability of the National Administration “Apele Romane” and of the Water Directorates staff (in terms of human and/or time resources) in providing the input required for the successful implementation of this project.

## 4. SCOPE OF THE WORK

### 4.1 General project description

The risk of floods will continue to be present and may increase considerably during the coming decades. The challenge is to anticipate these changes now and to protect society and the environment from the negative floods effects. As consequence of this new concept and as a result of last year's experience, this project aims to reduce the floods impact by preparing a national medium and long-term floods risk strategy and the Action Plan required for its implementation.

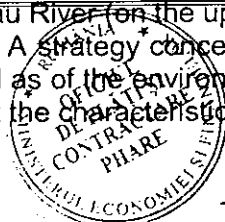
An important part of this project is to establish the methods and methodologies for the assessment of the damages produced by floods. For a better representation at the local level of these concepts, the lower and the middle part of Siret river basin were chosen as a pilot basin.

The surface is of 24.274 Km<sup>2</sup> (including the Barlad river basin), comprising a number of 4 important tributaries, all discharging to Siret river on its right shore. The tributaries are: Trotus River (L=124Km, S=1060KM<sup>2</sup>), Putna (L=302 Km, S=5264 KM<sup>2</sup>) Ramnicu Sarat (L=131 km, S=1060 KM<sup>2</sup>), Buzau (L=302 KM, S=5264 km<sup>2</sup>).

These tributaries, have torrential hydrological conditions characterized by alternation of the years with very large flows (1000-4000 m<sup>3</sup>/s) and these with very low flows, which sometimes does not exceed few m<sup>3</sup>/sec. On the other hand, in this area exists a great number of floods risk receptors (human settlements, social-economical settings, agriculture lands) resulting in potential huge material damages and an important number of human lives lost. In this area, have also existed a great number of infrastructures having a protection role against floods, but they are still insufficient and they are not even uniform distributed along the water courses. This is the reason for which this part of Siret river basin was proposed as a pilot basin, and for elaboration of the flooding studies, flood maps and flood risk maps, as well as of 3 studies concerning the non-structural and structural measures for:

- Siret River (sector between upstream of the discharge of Trotus River and downstream with the confluence with the Danube River);
- Trotus River;
- Buzau River (on the upper and middle sector).

A strategy concerning floods has an integrated approach of the social and economic aspects as well as of the environment, in order to eliminate the unacceptable incidents on the environment, to protect the characteristics of the landscape, to preserve and protect the cultural monuments.



**ANNEX II – Terms of Reference**  
*“Contribution to the development of the flood risk management strategy”*

Also, it must identify the options of the policy in the field of the floods management and to adequately select them.

**4.1.2. Geographical area to be covered**

The development of the medium and long-term flood risk management strategy and the Action Plan will cover the whole territory of Romania.

The assessment and the management of the floods for the Siret river basin (as a pilot basin) will cover the areas specified in Task 6.

**4.1.3. Target groups**

The main target groups identified under the current project are the following:

- Central and territorial environmental structures (Ministry of Environment and Sustainable Development National Administration “Apele Romane”, National Institute of Hydrology and Water Management, Waters Directorates);
- Other “actors” performing in the field of water management, such as: other ministers, county councils for emergency situations, local councils for emergency situations, the owners of the water management works, the citizens.

**4.2 Specific activities**

In order to support the achievement of the project results, the MESD, National Administration “Apele Romane”, National Institute of Hydrology and Water Management, Water Directorates and other authorities, will make available for the Consultant all the existent information, data and measurements related to the project.

**Task.1 Establishing the medium and long-term Floods Risk Management Strategy and the Action Plan**

Under this task, the Consultant is expected to perform the following activities:

**Activity 1.1. Preliminary assessment of the flood risk at the national level**

The assessment will be made for the 11<sup>th</sup> river basins on which is developed the water management in Romania in accordance with the provisions of the proposed **EU Directive No. 2006/0005 on the assessment and management of floods.**

~~By analysing the magnitude of floods produced in the last 15-20 years on the Romanian territory, the Consultant will develop a flood risk featuring. The magnitude of floods will be measured by probability of occurrence, by extension and by effects.~~

**Expected result:**

Preliminary assessment of the flood risk at the national level, done.

~~**Activity 1.2 Critical analysis of the existent protection system against floods: diagnosis, proposals for measures and actions for reducing the floods risk**~~

The Consultant will:



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- make an assessment on the existent protection system against floods, on the technical and functional state and on the performance parameters (level of protection ensured/class of importance in design stage).
- ~~elaborate the diagnosis on the technical and functional state of the existent protection~~ system against floods and on the performance parameters. The Consultant will identify the strong and weak points of the existing protection system against floods, establishing non-structural and structural measures and actions to mitigate the flooding risk and to reach an adequate performance standard.

The Consultant will need to take into consideration the administration of the floods phenomena, meaning:

- the capacity to influence the probability or the consequences of floods;
- the community capacity to understand and to accept the risk of floods;
- the emergency for taking action in order to reduce the risk and the potential rate of increasing the floods risk in time etc.

#### **Expected results:**

- The existent protection system against floods at national level, assessed from the technical and functional point of view;
- The diagnosis on the technical and functional state of the existent protection system against floods and on the performance parameters, elaborated;
- Clear proposals for improving the protection of the territory against floods.

#### **Activity 1.3 Development of the medium and long-term Floods Risk Management Strategy**

The medium and long-term Flood Risk Management Strategy will take into consideration the entire cycle of the floods management, that means:

- preventive measures;
- protection measures;
- preparatory measures;
- response for the emergency situations;
- reconstruction measures subsequent to the phenomenon;
- lessons learned.

***The Consultant will prepare the framework content for the medium and long-term Floods Risk Management Strategy.***

***The first draft of the framework content will be presented to the Working Group set up within Implementing Authority (MESD), as described under section 4.3.2. Management Structures. The Working Group will analyse the first draft and in 2 (two) weeks will transmit its comments to the Consultant.***

***The Consultant will analyse comments made by the Working Group members and within one week will elaborate the final version of the document which will be approved by the Working Group and the Implementing Authority.***

The framework content for the floods risk management strategy has to contain the following items:

- the necessity and the scope of the strategy;
- the basic principles of the strategy;
- the objectives of the strategy (overall and specific objectives) split on the economical, social and environment objectives;
- opportunities and constraints;
- policies to be followed in the flood risk management;
- sustainability of the objectives, of the indicators;



## ANNEX II – Terms of Reference

### “Contribution to the development of the flood risk management strategy”

- duties and responsibilities of the factors involved in assessment and management of the floods;
- population information regarding the strategy and the floods management policy; ~~awareness raising regarding the population behaviour, before, in time and after the floods phenomenon;~~
- strategy implementation and Action Plan.

The Consultant will start to develop the Risk Floods Management Strategy, only after obtaining the MESD's approval on the framework content.

The final versions of the Flood Risk Management Strategy will be displayed on the Ministry Web site, for public consultation for at least 10 days. The consultant will analyse the comments coming from public and, if necessary, will revise the documents and will submit the new version for approval to the MESD, within one week after receiving of the comments.

#### **Expected result:**

The medium and long-term Floods Risk Management Strategy approved by MESD.

#### **Activity 1.4. Development of the Action Plan for the implementation of the medium and long-term Floods Risk Management Strategy**

The Action Plan needs to include the following issues:

- conclusions of the preliminary analysis of the evaluation;
- description of the adequate protection level which must be accepted;
- guidelines of the necessary measures to rich the adequate protection at the river basin level
- description of the information measures, consultation and involving of the population;
- its framing in the coordination process at the level of basin, according to the WFD 2000/60/EC.

The Consultant will elaborate first a proposal of the plan's content. The Action Plan's content will be in conformity with the content of the management plans of floods risk stipulated in the Appendix of the **DIRECTIVE no. 2006/0005 on the assessment and management of the floods.**

The final versions of the Action Plan will be displayed on the Ministry Web site, for public consultation for at least 10 days. The Consultant will analyse the comments coming from public and, if necessary, will revise the documents and will submit the new version for approval to the MESD, within one week after receiving of the comments.

#### **Expected result:**

The Action Plan for the implementation of the medium and long-term Floods Risk Management Strategy developed by the Consultant and approved by MESD.

#### *The involvement and contribution of the Beneficiary:*

- *Providing the necessary documentation, data and registered evidences regarding the existent systems for protection against flood*
- *Ensuring of appropriate counterpart experts, in order to facilitate the implementation of activities with best results;*
- *Review and approve in a timely manner of the deliverables, as appropriate;*
- *Assistance in meeting with, and obtaining information from, government ministries, agencies and other authorities*



**ANNEX II – Terms of Reference**  
*“Contribution to the development of the flood risk management strategy”*

**Task 2. Elaborating the methodologies for drawing up the floods maps and floods risk maps**

**Activity 2.1. Review of the existing methodologies concerning drawing up of the flood maps and the flood risk maps in the countries with relevant experience in this field**

In Romania, although the area exposed to floods risk is about 10,000 Km<sup>2</sup> the flood maps and flood risk maps have not been drawn up yet. In this respect, the Consultant will need to review the previous experience in elaborating the flood maps and flood risk maps from the countries with good practice in this field and the way that these maps should be available for the public information and will made recommendations for an adequate methodology.

**Expected results:**

- A synthesis regarding the methodologies of drawing up the flood maps and flood risk maps;
- Clear recommendations for the most adequate methodology to be used for drawing up the flood maps and flood risk maps.

**Activity 2.2 Establishment of the minimum content of the flood maps and the flood risk maps**

Under this activity, the Consultant will establish the content of flood maps and of the flood risk maps to be in line with the proposals included in the **DIRECTIVE NO. 2006/0005 (COD) on the assessment and management of the floods**, concerning:

- the relation with the past floods;
- the spatial extension of the floods;
- the magnitude of the floods;
- the frequency of the floods;
- scenarios of the floods;
- flooding characteristic elements;
- potential damages;
- affected inhabitants;
- damages to the environment;
- the depths and speed of water, erosion sectors, sheet flows, etc.

**Expected result:**

- The content of the flood maps and of the flood risk maps, established.

**Activity 2.3. Establishment of the methodology for drawing up of the flood maps and of the flood risk maps**

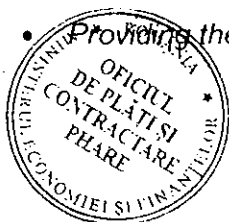
The Consultant will elaborate the methodology for drawing up the flood maps and the flood risk maps, including the established content, the recommended scales, the modality to border the flood maps into a quantitative and qualitative scale, as well as the colours used in this purpose.

**Expected result:**

- The methodology for drawing up of the flood maps and flood risk maps elaborated and approved by MESD.

*The involvement and contribution of the Beneficiary:*

- Providing the relevant Romanian legislation in force



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- Ensuring of appropriate counterpart experts, in order to facilitate the implementation of activities with best results;
- Review and approve in a timely manner of the deliverables, as appropriate;
- ~~Assistance in meeting with, and obtaining information from, government ministries, agencies and other authorities~~

### **Task 3. Development a methodology for the assessment of the direct physical damages produced by floods to the flood risk receptors**

#### **Activity 3.1 To present the evaluation concept of the direct physical damages produced by floods and of the world main existing methodologies in this field**

The Consultant will make a review of the existing methodologies for direct physical damages evaluation used in countries with relevant experience in this field and will recommend the proper one.

##### **Expected result:**

- The synthesis of the evaluation concept of the direct physical damages produced by floods, presented;

#### **Activity 3.2 Development of a methodology for the assessment of the direct physical damages produced by floods**

The Consultant will take into consideration the recommendation from Activity 3.1 and based on it, will propose a new methodology for direct damages evaluation. An adequate software for calculation the levels and water speed in areas where floods have high probability of appearance (floods with return period once in 10 years, with return period once in 100 years and with low probability of appearance), will be recommended.

The methodology will content also a calculation example or a case study.

##### **Expected result:**

- The methodology for the assessment of physical direct damages produced by floods developed and approved;

##### *The involvement and contribution of the Beneficiary:*

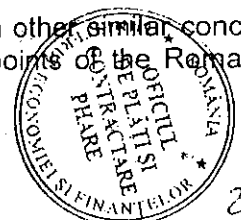
- Providing the relevant Romanian legislation in force
- Ensuring of appropriate counterpart experts, in order to facilitate the implementation of activities with best results;
- Review and approve in a timely manner of the deliverables, as appropriate;
- ~~Assistance in meeting with, and obtaining information from, government ministries, agencies and other authorities~~

### **Task 4. Proposing a Standard for the determination of the acceptable social risk on human settlements, social-economical units, transport systems, land and others**

#### **Activity 4.1. Critical analysis of the Romanian STAS 4273/83 (Classification based on ~~categories of importance~~)**

Under this task the Consultant will:

- Analyse the basic concepts of this standard by comparing it with other similar concepts from the European countries and identify the strong and weak points of the Romanian Standard 4273/83;



## ANNEX II – Terms of Reference

### "Contribution to the development of the flood risk management strategy"

- Assess the necessity of new Standard regarding the determination of the accepted social risk at floods.

#### Expected result:

- Recommendations for improvement or for changing the standard, issued.

#### **Activity 4.2 Elaboration of a proposal for the Standards, regarding the determination of the accepted social risk at floods**

Under this activity, based on the result of Activity 4.1, for elaboration of new Standard, the Consultant will take into consideration the potential categories of receptors and its characteristics (population, agricultural lands or other receptors), the costs of the protection measures against floods, the benefits, as a result of the protection measures implementation, etc.

The document will be subject of approval by the Working Group.

#### Expected result:

- Standard for determination of the accepted social flood risk, approved by MESD

*The involvement and contribution of the Beneficiary:*

- *Providing the relevant Romanian legislation in force*
- *Ensuring of appropriate counterpart experts, in order to facilitate the implementation of activities with best results;*
- *Review and approve in a timely manner of the deliverables, as appropriate;*
- *Assistance in meeting with, and obtaining information from, government ministries, agencies and other authorities;*

#### **Task 5. Designing an unitary system for information and education of the population from the potential flood risk areas**

##### **Activity 5.1. Development of a unitary information and education system for population and to define the responsibilities of the actors involved (the ministries, water directorates, local councils, etc).**

Under this Task, the Consultant will first make an assessment of the existing system. The proposals for the unitary system will be made according to the European recommendations.

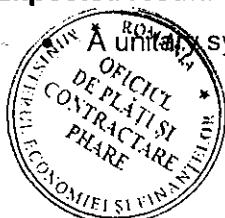
The system will comprise:

- the responsibilities concerning individual and community protection as regards prevention of floods phenomena;
- the indications regarding population behaviour before floods have occurred (specific codes and their meaning, behaviour in flood risk areas, awareness regarding the risks of floods in these areas etc.);
- the authorities' responsibilities.

The final versions of the unitary system for education and information of the population will be displayed on the Ministry Web site, for public consultation for at least 10 days. The Consultant will analyse the comments coming from public and, as necessary, will revise the documents and will submit the new version for approval to the MESD, within one week after receiving of the comments.

#### Expected result:

- Unitary system of information and education of the population, developed.



## ANNEX II – Terms of Reference

“Contribution to the development of the flood risk management strategy”

### Activity 5.2. Elaboration of a Guideline for national awareness campaign and of an Action Plan for the implementation of the unitary system developed under activity 5.1, in the potential floods risk areas

The Guideline will contain the following information:

- the actors involved (the ministries, water directorates, local councils, population, etc);
- what type of leaflets, manuals and guides, etc. will be used for warning population, indicating their content and format;
- modalities for better communication with population (the education level, social status, etc. will be also taken into consideration);
- the responsibilities of the actors involved;
- the communication modalities (radio, TV) and other means (conferences) for education of the population living in the potential flood risk areas;
- the best modalities in delivering the warning to the population and the modalities of verifying if the transmission of this warning was done;
- will be specified also the methods for verification if the population understand in a correct way, the warning messages;

Within the Action Plan, the Consultant will recommend:

- Actions to be taken for implementing the unitary information and education system;
- The actors involved;
- Deadlines and responsibilities regarding the Action Plan.

All the recommendations will be adapted at the needs of community.

#### Expected result:

- Guideline for national awareness campaign
- Action Plan for the implementation of the unitary system, in the potential floods risk areas, elaborated.

*The involvement and contribution of the Beneficiary:*

- *Providing all the information regarding the actual system for population warning*
- *Ensuring of appropriate counterpart experts, in order to facilitate the implementation of activities with best results;*
- *Review and approve in a timely manner of the deliverables, as appropriate;*
- *Facilitate the contact between the Consultant and the municipalities concerned.*
- *Assistance in meeting with, and obtaining information from, government ministries, agencies and other authorities;*

### Task 6. Assessment and management of floods in the middle and lower Siret river basin (pilot basin)

#### Activity 6.1. Elaboration of the flooding studies for the three river courses within the pilot basin:

- The Siret River on the sector between upstream of the discharge of Trotus River and downstream with the confluence with the Danube River;
- Trotus River;
- Buzau River on the upper and middle sector (downstream limited by section Magura).

These flooding studies will represent the basis in order to formulate the content of the basin management plan for the flood risk.



**ANNEX II – Terms of Reference**  
*“Contribution to the development of the flood risk management strategy”*

The studies will have two main components:

- The analysis of the flooding risk containing quantitative information on the nature and extension on the floods. Here will be included the hydrologic and hydraulic analyses, as well as the evaluation of the flooding impact on the risk receptors;
- The risk evaluation in the purpose to determinate the implications of the existent flood risk on the communities.

**Expected result:**

- The flooding studies on the Siret, Trotus and Buzau Rivers identifying the flooding areas and risk receptors on the nominated sectors, elaborated.

**Activity 6.2. Drawing up of the flood maps and the flood risk maps on the river Siret on the sectors defined at Activity 6.1**

The scale of the maps will be of 1:10000; 1:25000; 1:100000 according with the area covered and will contain a colour legend to characterize the flooding magnitude.

- The flood maps and the flood risk maps will contain: the floods with high probability of appearance (return period once in 10 years);
- The floods with medium probability of appearance (return period once in 100 years);
- Floods with low probability of appearance (extreme events).

**Expected result:**

- The flood maps and the flood risk maps on the Siret, Trotus, Buzau Rivers, on the sectors mentioned under Activity 6.1, developed.

**Activity 6.3 Preparation of 3 Cohesion Fund applications for investment projects in the field of floods risk prevention**

Based on the flood studies, developed under activity 6.1, it will be indicated the flooding areas with various levels of probability of occurrence. Further more, it will be established the social acceptable protection levels for the human settlements, social-economical facilities, agricultural lands, and structural and non-structural measures to mitigate the flooding risk and to ensure the established protection degree will be proposed. In addition, an economical assessment and a financial analysis will be presented.

The objective of this activity is to prepare applications for future 3 projects to be financed under the Sectoral Operational Programme for Environment. Each application will contain:

- Master Plan;
- Feasibility Study;
- Financial and Economical Analysis;
- Environment Impact Assessment;
- Institutional Analysis;
- Standard Application Form.

**Sub-activity 6.3.1 - To elaborate the Master Plan 2006- 2015 for the integrated flood management (infrastructure investment projects to prevent flooding)**

The Master Plan is based on the flooding studies elaborated under Activity 6.1

The Consultant will entirely develop or review and complete a Master Plan covering the period 2006 – 2015 for flood management, taking into account the Managements Plan elaborated at the river basin level.

The Master Plan should establish the priority needs and investments taking into account affordability of the proposed investment for the population and the local implementation capacity as well.



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

The Master Plan will bring solution to the critical situations of the flood management system and achieve compliance with the relevant EC Directives within the agreed transitional periods. It will include the priority measures with positive impact on the population and on the environmental protection.

#### **Review the existing situation:**

The existent situation will be reviewed by:

- Assessment of the existent works for protection against floods;
- Analysing of current urban- planning;
- Analysing of socio-economical dates;
- Assessment of Siret River basin management plans and Siret River basin water development plan, elaborated by Siret and Ialomita Buzau Water Directorates;
- Defining of local commercial, industrial and agricultural activities and their development perspectives in the medium and long-term;
- Collecting the basic information about the target groups.

#### **Analyse the existing situation**

The Consultant will identify the critical areas, perform additional flow measurements, analysis and surveys and will propose the necessary measures to be taken in order to mitigate the floods risk for these areas.

The Contractor will analyse the existent situation by describing:

- existent system for protection against floods;
- existing protection level;
- parameters of performances;
- technical and operational state of the system;
- operational and maintenance rules;
- flooding areas specified at Activity 6.1;
- potential damages assessment (regarding economic and environment aspects)
- potential population exposed to the flooding risk;

**To elaborate a proposal for the most cost effective solution** for the new system that foreseen better protection against floods (alternatives).

For each of this 3 river courses (specified under Activity 6.1) the Contractor will present more alternatives for the necessary infrastructure works, which can be adopted in order to establish an efficient protection against floods. The alternatives will take into consideration the following:

- to ensure the protection of the potential flooded areas by construction of longitudinal dikes;
- to ensure the high flood control by construction of retention areas;
- to construct permanent or non-permanent storage reservoirs for multipurpose (including high flood mitigation)

The Consultant will recommend the best alternative to be adopted.

#### **Determination of the investments of the Master Plan**

As part of the Master Plan preparation, the flood protection system of each river will be reviewed in order to define a long-term phased investment programme to finally comply with the EC Directives requirements in the related field.

The investments will take into consideration all components of the proposed infrastructures (dams, spillways, dikes, bridges, electrical and hydro-mechanical equipments, roads, communication system, warning and alarming system, e.g.).

If the proposed works have multi-purposes (protection against floods, water supply, e.g.) the investments will be split according to the share of benefit (to each purpose).



**ANNEX II – Terms of Reference**  
*“Contribution to the development of the flood risk management strategy”*

**Conclusions on the pre-feasibility of the project**

The Consultant will assess the pre-feasibility of the project.

The Consultant will present the alternative solutions/projects, which will be developed in the Feasibility Study.

The analysis in the pre-feasibility phase will help to identify any shortcomings (institutional, financial, technical, etc) to be addressed in the Interim Report in order to take the corrective actions as early as possible.

**Sub-activity 6.3.2 – To develop the Feasibility Study for priority infrastructure projects to be included in the Application**

The feasibility study will be conducted and prepared in accordance with both EC/IFIs regulation requirements - **Decision No. 913/7.06.2005 to complete 1013/873/2001** on approval of structure, content and use of Standard documentation to elaborate and present an offer for service public procurement; EGO No.5/2003 and GD No. 978/2001) – **Framework content of the feasibility study.**

The feasibility study will review the project definition, elaborate preliminary design, comparing detailed alternative solutions to ensure cost-effective solutions are chosen. Rehabilitation or construction of new facilities should be done in compliance with the standards set by the relevant EU Directives and with the Romanian legislation in force.. All the proposed measures have to take into account the agreed transition periods for the implementation of the relevant EU Directives, as agreed between Romania and EU for environmental sector.

The feasibility study will comprise all technical, financial and institutional studies and designs required to the project's EU co-financing Application.

The feasibility study the Consultant tasks will mandatory include (but will not be limited to) the following aspects:

*a) Topographic Studies*

For each project the Consultant will undertake Topographical Studies in order to elaborate the lay-out plan and cross - sections.

*b) Geo-technical investigations*

For each project (Phase 1 of the Master Plan), the Consultant will undertake complete Geo-technical investigations. These investigations will be done in order to define:

- geological stratification of infrastructure foundations soil;
- physic- mechanical and hydrological characteristics of the layers;

The number and the type of the investigations (trench, drillings, investigation gallery, e.g.) will be established by Consultant based on its previous experience.

*c) Technical feasibility (technical description and preliminary design of the projects components)*

The Consultant will prepare the technical description and preliminary design of the project components with a new analysis at feasibility level of the alternative solutions already analysed at pre-feasibility level. This will include an analysis of alternative solutions.

The Consultant will pay attention to the design assumptions and ensure the correct dimensioning of the facilities in line with the current and forecasted demand projections. He will use up-to-date unit prices to evaluate new investments.

*d) Financial and economic analysis*



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

The Consultant will prepare both:

- financial analysis, including: sustainability, sensitivity and risks  
and

- economic analysis, including: cost effectiveness.

for all alternatives solutions.

#### *e) Institutional analysis*

The Consultant will undertake the institutional analysis of the project at feasibility level to assess whether the institutional framework in place is of adequate capacity to ensure the proper project implementation.

### **Sub-activity 6.3.3 – To conduct the financial and economic analysis**

#### **Financial analysis**

The Consultant will prepare a **financial model** and a **sensitivity and risk analysis**, to forecast the possible effect of uncertainties.

All costs required to realize the project should be included (feasibility studies, land purchase, engineering studies, construction, e.g.)

#### **Economic analysis**

The Consultant will realize a **cost effectiveness analysis** of some alternative solutions for each of the 3 projects. Such cost effectiveness analysis would assume that the objective of any project supported by EU co-financing would be to attain as a minimum, the technical standards set out in the relevant EU Directives.

### **Sub-activity 6.3.4 – To develop the Environmental Impact Assessment (EIA)**

All applications for assistance from SCFs are required to include an **assessment of the environment impact** similar to the assessment provided for in Council Directive 85/337/EEC amended by 97/11/EC” (EIA Directive).

Accordingly, the Consultant should assure that an environmental assessment in accordance with the provisions of this Directive is carried out.

In consultancy with the Local Environmental Protection Agencies (LEPAs) representatives, the Consultant determines if Annex I or Annex II of the EIA Directive covers the type of planned investments. The LEPAs will determine the degree and type of public consultation, respectively:

- Whether the public consultation is based on an adequate environmental impact study, including a concise but informative non-technical summary,
- How the content of the impact study and the results of the consultation is taken into consideration in the issuing of the environmental consent from the responsible authorities.

Advice from relevant and interested NGOs should proactively be sought during the course of the public presentations of the EIA.

The Consultant will also ensure that the consent of the responsible environmental authorities is included with the supporting documents of the application for assistance. If the environmental competent authority to decide if an EIA should be carried out (i.e. in projects covered by Annex II of the EIA Directive) and they have decided not to carry out an EIA, their reasoning for coming to this conclusion should be explained in the application.



## ANNEX II – Terms of Reference

### *"Contribution to the development of the flood risk management strategy"*

An Environmental Impact Assessment (EIA) should take into account the stipulations of the EC Directive 97/11 of 3 March 1997, amending Directive 85/337/EEC, regarding general environmental protection and of the Romanian legislation GD 918/2002, OJ 860/2002 (as amended by OJ 210/2004), OJ 863/2002, OJ 864/2002.

*It should be noted that, according to the national legislation in place, an authorised Romanian company must endorse the Environmental Impact Study of the project.*

#### **Sub-activity 6.3.5 – To prepare the Applications for EU co-financing**

The Consultant will prepare an application for EU co-financing for each of the selected projects, according to the standard format to be provided by the MESD. The source information required for the application is basically a matter of packaging the information gathered under this technical assistance into appropriate format.

The end product of this task will be a set of completed Applications that can be submitted to competent authorities for evaluation and approval.

#### **Expected result:**

3 Cohesion Fund applications for:

- The Siret River on the sector between upstream of the discharge of Trotus River and downstream with the confluence with the Danube River;
- Trotus River;
- Buzau River on the upper and middle sector (downstream limited by section Magura).

*The involvement and contribution of the Beneficiary:*

- *Providing all the existing data and measurements results, legislation in force, in order to support the completion of the activities included under this Task*
- *Ensuring of appropriate counterpart experts, in order to facilitate the implementation of activities with best results;*
- *Review and approve in a timely manner of the deliverables, as appropriate;*
- *Facilitate the contact between the Consultant and the municipalities concerned.*
- *Assistance in meeting with, and obtaining information from, government ministries, agencies and other authorities;*

#### **Task 7. Dissemination of the project's results and exchange of experience**

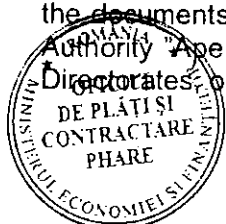
**Activity 7.1. Dissemination of the information regarding the Flood Risk Management Strategy, the Action Plan, the methodology for drawing up the flood maps and flood risk maps and the unitary information system .**

The campaign to be organized under this activity is aimed to promote the information dissemination about the results obtained by the Consultant under activities: 1.3, 1.4, 2.3, 5.1, 5.2.

Under this activity, the Consultant will:

- Organize a dissemination session

This will have to be a 2 (two) days session and will consist of presentations and discussions on the documents elaborated; the number of participants will be around 60 (from MESD, National Authority "Apele Romane", National Institute of Hydrology and Water Management and Water Directorates, other authorities);



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

The Consultant will prepare and ensure the dissemination of documents elaborated on hard copies and CDs for each participant and translation if the case may be.

~~• Organize a press conference~~

The conference is organized in purpose to increase the public awareness and to inform the beneficiaries (other public authorities, partners, non-governmental organizations) about the project's results.

The participants will be in number of 100 persons.

- Prepare copies of the final version of the medium and long-term Floods Risk Management Strategy (40 copies) and of the Action Plan (40 copies) in order to be distributed to the main authorities responsible in the management of the emergency situations caused by floods.

#### **Expected result:**

- 100 stakeholders informed about the project results.
- 80 copies of the medium and long-term Floods Risk Management Strategy and of the Action Plan, prepared and distributed.

*The Beneficiary will facilitate the communication with other authorities and will inform the Consultant about the list with the members which have to participate at this session and press conference.*

#### **Activity 7.2. Workshop to present the modality in which the unitary system for information and education of the population is operating**

Under this activity the Consultant will organize a workshop to present the results obtained under Task 5. The workshop will aim to demonstrate the applicability and the efficiency of the new unitary system for population information and education and will be addressed to the Target Group.

Under this activity the Consultant will:

- establish a location in a potential flood risk area;
- make the necessary arrangements with the actors involved in the emergency actions in order to ensure their participation;
- prepare and print out presentation materials which are to be distributed to the participants during the workshop;

The presentations delivered within this workshop, as information content as well as presentation modalities will have to ensure that the communication with the population and the warning activities are understood in a correct way so that the system designed will operate with good results.

The number of participants from MESD, National Authority "Apele Romane", Water Directorates, local authorities, will be no more than 30.

This workshop will be followed by a presentation having as main purpose to inform the population from potential affected areas about the actions to be made in case of floods. In this purpose the Consultant and the local authorities will:

- decide about the number of inhabitants who will be involved in this activity, and will convoke them (only the inhabitants which are living in potential affected area will be convoked);
- inform them about the purpose, date and place of this convocation;
- distribute the leaflets to the participants;



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- made a presentation about their responsibilities, about the warning modality and transmission of the messages, in case of floods.

#### Expected result:

- **The modality in which the unitary system for information and education of the population is operating, presented.**

*The Implementing Authority will provide support on organizing the events and the list with the participants.*

*The Implementing Authority and the Working Group will have to approve the documents which will be prepared under Activities 1.4, 2.3, 4.2, 5.1, 5.2, 6.3, according to the procedure presented under Task 1, Activity 1.3.*

### 4.3. Project Management

#### 4.3.1. Responsible body

- **Implementing Authority (IA) - MESD**, through the General Directorate for Structural Instruments Management is responsible for technical implementation of the contract.

Contact person:

Mrs. Liliana CHIRILĂ

General Director

Phone: + 40- 21- 300 7777

E-mail: liliana.chirila@mmediu.ro

- **Implementing Agency/Contracting Authority** - Central Finance and Contracts Unit (CFCU) within the Ministry of Public Finance will be responsible for procedural aspects of the tendering process, contracting matters and financial management (including payments) of the contract activities.
- **The Beneficiaries** - MESD, through the Water Department is responsible for technical implementation of the contract, NA“Apele Romane” and Water Directorates (Siret and Ialomita-Buzau)
- **Consultant** - is responsible for the timely execution and quality of the project and of the work tasks set out in this Terms of Reference.

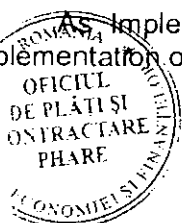
The Consultant is fully responsible for the administrative and financial management of the project implementation process. It must observe the contract conditions stipulated in the “the General Conditions for service contracts financed by the European Community” and the special conditions provided under the contract.

The Consultant is responsible for making clear written documents and data requests indicating the deadline for sending the required information in order to perform the project according to the timetable.

Other “actors” performing in the filed of water are: other ministers, county councils for emergency situations, local councils for emergency situations, the owners of the water management works, the citizens.

#### 4.3.2. Management structure

Implementing Authority, MESD retains full responsibility for an appropriate technical implementation of the project and its main tasks will be to:



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- Facilitate contacts between the Consultant and the project stakeholders, and other institutions and organizations in Romania
- Mobilize the own experts to cooperate with the Consultant;
- ~~Organize an Working Group responsible in elaborating the comments and in approving the documents sent by the Consultant;~~
- Host the PSC meetings
- Disseminate the results of the project by displaying them on the ministry Web-Site in order to receive the public comments;
- Provide all the support necessary for the fulfilment of the activities.

The Project Implementation Unit (PIU) operating under the MESD retains the technical responsibility for the implementation of the project activities. The PIU is responsible for the day-to-day monitoring activities and shall need approval only for major aspects of the project such as approval of reports and documents. This approval will be given by the General Director of the MESD being the Senior Programme Officer (SPO).

The SPO and PIU must be consulted by the Consultant on every issue arising in the implementation of the project. The Consultant, with prior approval from the SPO, shall address to CFCU the invoices for payments under this contract.

A Project Steering Committee (PSC) will be established to monitor the activities identified in the various phases of the project in an adequate way. The PSC will be set up and chaired by the Implementing Authority - Ministry of Environment and Sustainable Development. It will operate as advisory committee and meet at least once every three months.

The Consultant will inform the members of the PSC about the progress on project. On the other hand, the stakeholders will have the opportunity to comment on the results achieved in project's implementation. Based on the information provided by both the Consultant and project stakeholders, the PSC will make recommendations for adjustments whenever necessary.

The Consultant is responsible for the logistical issues related to the PSC meetings (agenda, minute-taking, follow-up etc.).

The minimum representation on PSC meetings is:

- General Director of the General Directorate for Management of Structural Instruments;
- Head of Phare PIU;
- Director of the Directorate for Prevention and Management of Water Emergency Situations within MESD;
- Director of the National Administration “Apele Romane”;
- Director of the National Institute of Hydrology and Water Management;
- 2 Water Directorates (Siret and Ialomita-Buzau) - Executive Director;
- CFCU - Project Manager for Environment, as observer;
- Ministry of Economy and Finance (the National Aid Coordinator) - Task Officer for Environment, as observer;
- EC Delegation Representative in Bucharest - Task Manager for Environment (as observer);
- Team Leader and members of the project team.

~~Additional participants can be invited to participate in PSC if this will be in the benefit of project implementation. This will be done based on the request addressed by any of the parts involved in project and agreed on by the initial PSC.~~



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

The PSC can delegate definite actions to be followed by the Consultant in cooperation with the project stakeholders.

~~At central level, close working relationships will be necessary to be created with the MESD, particularly with the General Directorate for Management of Structural Instruments and the National Administration “Apele Romane”.~~

At regional level, the Consultant is expected to co-operate closely with the responsible task officers attached to the NARM and to the Water Directorates (Siret and Ialomita-Buzau) and NIHWM.

Within the Implementing Authority, a Working Group will be set up, consisting of technical experts and decision makers with responsibilities in managing emergency situations. The Working Group will analyze the documents delivered by the Consultant, will issue comments and finally will need to give its approval. The members of the Working Group composition will be established by the Implementing Authority and Consultants.

#### **4.3.3. Facilities to be provided by the Implementing Authority**

The Contracting Authority and Implementing Authority will support the Consultant with all necessary information required for a proper project implementation. They will support the Consultant for good relationship with all stakeholders involved in project implementation.

The MESD (Implementing Authority) who is responsible for the day-to-day monitoring of project activities will nominate a Project Manager and a Project Officer for project implementation.

As Implementing Authority, having full responsibility for an appropriate implementation of the project, the main tasks of the General Directorate for the Management of Structural Instruments will be:

- To provide the Consultant an office within the ministry headquarters. However, the Consultant should have its own laptops/PCs, portable printers and make necessary arrangements to support the TA team with stationary, communications facilities etc.; If the IA can not provide an adequate office, the Consultant will rent its own office located as closely as possible to the MESD and will cover the costs from the fees.
- To make sure that the experts who will provide assistance in the regions will be provided an office at the headquarters of the Water Directorates in the regions concerned, with access to phone line and internet. The experts in question and their counterpart will have the respective office at their disposal during the project duration;
- To facilitate contacts between the Consultant and project stakeholders, and other institutions and organizations in Romania;
- ~~To perform a thorough analysis of all draft documents and invoices submitted by the Consultant and, if considered satisfactory, to approve them;~~
- To disseminate the results of the project by arranging contacts with media or by placing them on the ministry site.

The following actions/activities will be undertaken by the Beneficiary in order to ensure full ownership of this project and its results:

- Conduct the public debates and cooperate closely with the Consultant in analyzing all the comments received;
- Lead the information sessions and the public awareness campaigns;
- Apply all the Action Plans/methodologies/framework content once approved;
- Implement all the recommendations, once accepted;
- Facilitate contacts with all stakeholders, chair all relevant meetings;
- ~~Take all relevant decisions for ensuring the smooth implementation of the project;~~



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- Revision of the documents in due time to allow the observance of the project implementation time schedule.

## 5. LOGISTICS AND TIMING

### 5.1 Location

The project operational base will be Bucharest at central level (Ministry of Environment and Sustainable Development, at the National Administration “Apele Romane”), local level (Water Directorates head offices) and in the Consultant’s office.

### 5.2 Commencement date & Period of execution

The commencement date shall be the date of the contract signature by the last party. The execution period of the contract is 14 months from the commencement date.

## 6 REQUIREMENTS

### 6.1 Personnel

The Consultant shall provide experienced staff in order to perform the above activities.

All experts who have a crucial role in implementing the contract are referred to as key experts.

The technical assistance should bring **high specific expertise** in the area of project interest: hydro-technical works, hydraulics, flood risk management, hydrology, environment assessment requirements. For this purpose, the Consultant will be a company or a consortium of companies with significant experience in flood risk management sector. The Consultant will also have good knowledge of the environmental Acquis Communautaire and its specific requirements for flood related legislation.

The Consultant will be expected to provide proper staff covering expertise and necessary experience to fulfil the objectives of the project. In his proposal the Consultant will present a detailed schedule of activities and inputs of the proposed staff.

**The minimum percentage of time which experts should work in Romania is 80 %.**

#### 6.1.1 Key experts

##### Key Expert 1: Team Leader

#### 1) Qualifications and skills

- University degree in Engineering – water engineering works;
- Good command of English;
- Excellent reporting skills and computer literacy.

#### 2) General professional experience

- At least 8 years working experience in projects in flood management sector
- Team leader in minimum 1 project, financed under EU assistance funds;
- Good knowledge of EU legislation in water and flood management.



**ANNEX II – Terms of Reference**  
*"Contribution to the development of the flood risk management strategy"*

- Thorough knowledge and experience in running of EC and IFI projects;
- 3) Specific professional experience**
- At least 5 years international experience as Team Leader in water management projects;
- ~~At least 2 (two) projects completed, in flood risk management field;~~

**4) Responsibilities:**

- The project team-leader will exercise overall control of the project and will be the focal point for both Romanian and external parties involved in the project. He/she will be the focal access point for both the long-term and short-term experts participating in this assignment. He/she will play the central operational role within the project and will co-ordinate all the activities, listed under the different tasks and will be in charge for the final editing of all reports to be produced under the current assignment.
- The Team Leader will be responsible for the quality of the documents and for results of the project.
- The team-leader will be responsible for coordinating the activities regarding Task 1, Task 4 and Task 7 (organizing of seminars related to the dissemination of the results obtained, regarding the elaboration of the long-term flood risk strategy).

**Key expert 2: Deputy Team Leader**

**1) Qualifications and skills**

- University degree in Engineering, water engineering works;
- Good command of English
- Good knowledge of EU legislation in environmental field.

**2) General professional experience**

- Minimum 7 years experience in projects related to flood management sector;
- At least one project, financed under EU assistance funds;
- Good knowledge of EU legislation in flood management

**3) Specific professional experience**

- At least 5 years experience in hydraulic studies;
- Experience in at least 1(one) project on establishing a methodology for flooding or flood risk maps
- Experience in at least 1(one) project on drawing up flooding maps;

**4) Responsibilities:**

- The Deputy Team Leader will second the Team Leader. The Deputy Team Leader will be able to take appropriate decisions when the Team Leader is absent. He/ she will monitor and support the activities listed under the different tasks within this assignment. He/ she will on site co-ordinate and support the short-term technical experts that are contracted under the assignment and expected to deliver a specific technical input.
- The Deputy Team Leader will coordinate the activities from Task 1 and Task 2.
- The Deputy Team Leader will be responsible for the quality of the documents and for results of the project.
- Will be responsible for reporting results of the activities from Task 1, Task 2 and Task 7 (organizing of seminars related to the dissemination of the results obtained, regarding the elaboration of the long-term flood risk strategy and of the methodology for drawing up the floods and floods risk maps).



**ANNEX II – Terms of Reference**  
*"Contribution to the development of the flood risk management strategy"*

**Key Expert 3**

**1) Qualifications and skills**

- University degree in Engineering, water engineering works;
- Good command of English

**2) General professional experience**

- Good knowledge of EU environmental legislation and especially in related flood risk assessment
- At least 10 years experience in the field of water management;

**3) Specific professional experience**

- At least 2 projects in the field of floods damages assessment;
- At least 1 (one) project in developing methodology for the assessment of floods damages.

**4) Responsibilities:**

- Responsible for coordinating of the activities under Task 3;
- Reporting results of the activities regarding Task 3;

**Key Expert 4**

**1) Qualifications and skills**

- University degree in Engineering, water engineering works;
- Good command of English;

**2) General professional experience**

- At least 10 years international experience in the water management field (in design of the hydro-technical works);
- Good knowledge of EU environmental legislation.

**3) Specific professional experience**

- Minimum 5 years experience in elaborating pre-feasibility and feasibility studies in water management field (in design of the hydro-technical works);
- Involvement in elaboration of at least 1 (one) application ready to be financed by EU funds.
- At least 1 (one) project in flood management field

**4) Responsibilities:**

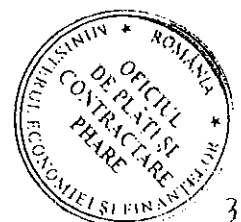
- ~~Responsible for coordinating of the 6.3 activity~~
- Reporting results of the 6.3 activity .

**Key Expert 5**

**1) Qualifications and skills**

- University degree in Social and Communication Sciences or other relevant field.
- Good command of English;
- Excellent reporting skills and computer literacy;
- Knowledge of EU environmental legislation

**2) General professional experience**



## ANNEX II – Terms of Reference

### *"Contribution to the development of the flood risk management strategy"*

- At least 5 years international experience in the field of Public Awareness and Communication;
- Good knowledge of EU legislation, regarding public awareness;

#### **3) Specific professional experience**

- Experience in risk communication and crises emergencies.
- At least 1 project completed in flood risk awareness campaign.

#### **4) Responsibilities:**

- Responsible for coordinating of the activities under Task 5.
- Reporting results of the activities regarding Task 5.

### **Key Expert 6**

#### **1) Qualifications and skills**

- University degree engineering, water engineering works;
- Good command of English;

#### **2) General professional experience**

- At least 5 years experience in developing GIS maps in water field (and at least 1 project completed);

#### **3) Specific professional experience**

- Minimum 3 years experience in GIS macro-programming for ArcGIS Server, ArcIMS, ArcSDE and ArcPAD application builder, database design and maintenance (SQL server) and programming in GIS MapObjects;

#### **4) Responsibilities:**

- Responsible for coordinating of the activities 6.1 and 6.2.
- Reporting results of the activities regarding activities 6.1 and 6.2.

### **6.1.2. Other Experts**

CV's for experts other than the key experts are not examined prior to the signature of the contract. They should not have to be included in the tender.

The Consultant shall select and hire other experts as required according to the profiles identified in the Organization & Methodology and/or these Terms of Reference. These profiles must indicate whether they are to be regarded as long-term/short-term and senior/junior so that it is clear which fee rate in the budget breakdown will apply to each profile. All experts must be independent and free from conflicts of interest in the responsibilities accorded to them

The Consultant should pay attention to the need to ensure the active participation of local professional skills where available, and a suitable mix of international and local staff in the project teams. All experts must be independent and free from conflicts of interest in the responsibilities accorded to them.

The selection procedures used by the Consultant to select these other experts shall be transparent, and shall be based on pre-defined criteria, including professional qualifications, language skills and work experience. The findings of the selection panel shall be recorded. The selection of experts shall be subject to approval by the Contracting Authority. For that purpose the consultant is advised to coordinate with the Contracting Authority in advance the profiles of the other experts to be selected.

~~Note that civil servants and other staff of the public administration of the beneficiary country cannot be recruited as experts.~~

The Consultant should identify and deploy a number of short-term experts to cover all the fields of activity and tasks as described in these Terms of Reference.

They should have relevant technical knowledge and experience in one of the following subject areas:



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- Geotechnical and geological studies;
- Topographical studies;
- Cartography;
- ~~Water management;~~
- Hydraulics and hydrology;
- Environmental Impact Assessment;
- Cost assessment;
- Financial management;
- Public relations and organization of awareness campaigns and other similar events;
- Statistics;
- Data analysis and processing;

#### 6.1.3. Support staff & backstopping

Backstopping costs to be made by the Consultant are considered to be included in the fee rates. The costs of support staff must be included in the fee rates of the experts as well.

#### 6.2. Office accommodation

The project will be carried out in Romania, at both central (Bucharest) and regional levels (regional working points will be established later on).

Offices for the project will be provided by the beneficiary at the premises of MESD or National Administration “Apele Romane”. If the IA can not provide an adequate office, the Consultant will rent its own office located as closely as possible to the MESD and will cover the costs from the fees.

The Consultant should have its own laptops/PCs, portable printers and make necessary arrangements to support the TA team with stationary, communications facilities etc.

However, if necessary, the Consultant will rent its own project office, located ideally as closely as possible to MESD / NAAR, as working space for the non-key experts involved in the project. In such case, the Consultant will make arrangements for a proper office with basic office equipment (desks, chairs and cupboards) during the entire project implementation period. The Consultant will cover the costs of its own project office from the fees.

#### 6.3. Facilities to be provided by the Consultant

The Consultant shall ensure that experts are adequately supported and equipped. In particular it shall ensure that there is sufficient administrative, secretarial and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support its activities under the contract and to ensure that its employees are paid regularly and in a timely fashion.

~~In addition, each expert operating under the Consultant should have his/her own equipment needed for proper implementation of the task(s) attributed to him/her:~~

- adequate hardware (e.g. laptop, printing),
- adequate software (for elaboration of the floods maps and of the floods risk maps),
- presentation technology (flip chart, video-projector).

The Consultant also has to care for translation where necessary.

~~If the Consultant is a consortium, the arrangements should allow for the maximum flexibility in project implementation. Arrangements offering each consortium partner a fixed percentage of the work to be undertaken under the contract should be avoided.~~



**ANNEX II – Terms of Reference**  
*"Contribution to the development of the flood risk management strategy"*

## 6.4. Equipment

No equipment is to be purchased on behalf of the Contracting Authority/ beneficiary country as part of this service contract or transferred to the Contracting Authority/beneficiary country at the end of this contract. Any equipment related to this contract which is to be acquired by the beneficiary country must be purchased by means of a separate supply tender procedure.

## 7. REPORTS

### 7.1 Reporting requirements

The consultant must draw up interim reports and final report, each report shall consist of a narrative section and a financial section. The financial section must contain details of the time inputs of the experts, of the incidental expenditure and of the provision for expenditure verification.

#### Inception Report (IR)

The Contractor is expected to submit an Inception Report (IR). The IR will include a detailed planning of all the activities to be completed within the project implementation period, including a description of the methodology to be used, possible problems encountered and proposals to overcome them, indicators of achievement, and a matrix of compliance. The IR will also give a clear overview of the experts including their exact time involvement in programming, coaching and development activities to be executed under the project. The IR will become the main working instrument during the project implementation period and will be referred to throughout the entire duration of the project.

The Consultant will present in the IR an accurate and detailed program chart showing in a systematic way the order in which the activities are planned and going to be executed during the project lead-time. The chart is an adjusted version of the one included in the project proposal. Updated benchmarks to monitor the progress of the project are included as well.

The IR will be submitted within four weeks after commencement of the contract services.

#### Monthly Project Sheets

Based on a format agreed by the Implementing Authority, the Contractor is expected to complete, on a monthly basis, a project sheet, indicating the progress that the project has made during the implementation stage. Monthly Project Sheets (including annexes) should not exceed more than 5 pages each.

#### Interim Reports

Interim reports shall summarize all activities during the reporting period, including progress and constraints, procedural issues, relations with counterparts and general remarks from beneficiaries.

Reports shall also analyse variations with respect to timing and budgets for the individual activities and include proposals for revised time schedules and budgets.

They shall also include an updated project development chart, being a detailed projection of the project activities executed during the reporting period and planned for the forthcoming period. The interim reports are to be submitted within 10 days of the end of reporting period. Each interim report shall be produced every 6 (six) months because the complexity of the activities and a better management of the project.

The Reports shall include the following sections:



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

- An executive summary of the main issues and recommendations for the attention of key decision makers.
- A comprehensive description of activities and outputs for the reporting period and a detailed work plan for the following period.
- A summary of the financial status of the implementation of the project, including a detailed description of resources utilized against activities undertaken.
- A review of problems encountered during implementation of project activities and the corrective measures taken.
- Specific comments upon the indicators of achievement identified in the Inception Report and an analysis of progress towards the objectives based upon these and other data.
- Critical issues,
- Conclusions;

### **Final Report (FR)**

A draft FR will be submitted one month before completion of the assignment to the project stakeholders who will have the opportunity to comment. The FR should include a complete overview of all activities implemented during the project, a summary of outputs, and the identification of any major problems that may have arisen during the performance of the Contract. The final version of the FR should be submitted to the relevant project stakeholders not later than one month after finalisation of the project.

The final report must be accompanied by the final invoice, the financial report and an expenditure verification report as it is defined in General Conditions art. 28.

### **Random Reports**

It is expected that the Consultant will produce additional reports upon request and whenever needed.

Upon request of Implementing Authorities, the Contractor may be asked to produce relevant additional documentation such as supportive and explanatory reports, inputs to strategic documentation and/or mission reports to be produced by short-term experts.

Additional reports will be sent to the working group also, upon request and whenever needed, in order to obtain their comments.

### **7.2 Submission & approval of progress reports**

All reports shall be in accordance with standard EC formatting and Implementing Agency's requirements, and provide information on:

- General progress (activities, actions, meetings with the stakeholders, etc.);
- Problems encountered and appropriate solutions identified;
- Recommendations: short-term and within the lifetime of the project, as well as long-term and beyond the programme;
- Requests.

In order to have a clear picture of the programme's progress, the reports shall distinguish between activities accomplished and declared completed and the ones still ongoing.

All reports, non-official information notes and other internal documentation will be produced on hard and electronic format, in English and in Romanian languages.

The draft of Inception Report and Final Report will be submitted to MESD and CFCU for consideration. The institutions have to make comments on the draft reports within 2 weeks from their submission. The approved final version of each report will be submitted to MESD, NARW and CFCU.



## ANNEX II – Terms of Reference

### *“Contribution to the development of the flood risk management strategy”*

The draft of Interim Reports will be submitted to MESD and NARW. These institutions will make comments in 2 weeks from the submission. The approved final version of each report will be submitted to MESD, NARW, and CFCU.

The final version of each report is to be submitted to all members of Project Steering Committee. The technical reports will be approved by the Implementing Authority.

Each report will have to be officially approved by the Implementing Authority (Ministry of Environment and Sustainable Development). Payments will only be made after official approval of the reports, timesheets and of the invoices by the Implementing Authority.

Reports shall be addressed to:

Ministry of Environment and Sustainable Development, General Directorate for Structural Instruments Management

One copy of Inception, Interim and Random reports in electronic format and the Final Report in standard format plus electronic version, in the English language, should be submitted to the EU Delegation, Str. Jules Michelet, 18, Sector 1, Bucharest, Romania, in the attention of Ms. Adriana Micu, Task Manager for Environment.

One copy of all final (approved) reports should be submitted to the CFCU, the Contracting Authority.

The Inception Report, the Interim reports and the Final Report will be upon their approval, milestones for release of interim and final payments.

## 8. MONITORING AND EVALUATION

### 8.1 Definition of indicators

Programme monitoring and evaluation will be based on periodic assessment of progress on delivery of specified project results and towards achievement of project objectives.

The performance of the Consultant during this project will be monitored and evaluated based on:

- Number of inhabitants protected from floods through the implementation of the flood risk management strategy;
- Number of environmental infrastructures that will be protected through implementation of flood prevention strategy;
- Number of organisms established in view of setting up flood prevention communication networks

### 8.2 Special requirements

No special requirements are foreseen



