

Project Name Romania-Hazard Risk Mitigation and...
Emergency Preparedness Project

Region Europe and Central Asia Region

Sector Natural Resources Management

Project ID ROPE75163

Borrower(s) GOVERNMENT OF ROMANIA

Implementing Agency

Address MINISTRY OF PUBLIC FINANCE
Address: 17 Apollodor Str., Bucharest,
Romania
Contact Person: Mr. Stefan Petrescu

Prime Ministry Office
Ministry of Public Works, Transport and Housing
Ministry of Waters and Environmental Protection
Ministry of Agriculture, Food and Forestry
Ministry of Public Administration
Ministry of Industry
Ministry of Education and Research
Ministry of Health and Family

Environment Category B

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1. Country and Sector Background

Romania is severely exposed to a range of natural disasters, particularly to the risk of earthquakes, floods, and landslides causing economic and human losses across the country. The expected annual property loss from earthquakes and floods is estimated at around US\$400 million. Since 1908, 14 earthquakes of magnitude VII or greater and 8 major floods were recorded affecting almost 2 million people and causing massive economic losses. The 1977 earthquake, measuring 7.2 on the Richter scale, resulted in economic losses well in excess of US\$2 billion, while the July 1991 flood caused damages estimated at \$0.5 billion, affecting a large area of about 1,400km², and damaged more than 12,000 buildings, 990 km of roads, 14 km of railroads, and 150 bridges. More recent floods, in 1997 and 1998, caused damages estimated at US\$310 million and US\$150 million respectively. In the time of highly centralized regime prior to 1989, the national government was taking full responsibility for the reconstruction work in the aftermath of disasters. The government mobilized military and other public/private resources via top-down orders to cope with the large-scale damages. All related financial consequences were carried by the state. Since then, Romania has been going through a major transition to the modern state with associated re-organization of the disaster management structures. The restructuring of the institutional set-up is a

part of initiatives to demilitarize and decentralize emergency management functions, motivated in part by expectations of the European Union and NATO's standards. These changes, which are on-going and include both organizational restructuring and decentralization of functions, lead many Romanian officials to express concern regarding the current ability to organize an effective emergency response. The transformation is ambitious and both civil protection and the fire services are concerned that during this transition period there is not a common understanding of how the new structures will replace long-standing traditions and systems. The organizations with a mandate to handle disaster management and response lack the technical and financial capacities. Deficiencies in protective investments, equipment, communication system, and limited access to up-to-date knowledge and technical schemes are just examples of shortcomings which hamper emergency preparedness, mitigation and management system, and make Romania more vulnerable to consequences of natural and man-made disasters. Vulnerability to seismic risk is due to Romania's geographical location on the Vrancea subduction zone, situated along the south-eastern Carpathian arc, which forms an ellipse stretching from the north east to the south west of Romanian territory, including Bucharest. Proximity to the fault and poor soils make Bucharest Europe's highest risk capital city and one of the 10 most vulnerable cities in the world. Compounding the situation is the fact that Romanian economic activities are concentrated in and around Bucharest. The vulnerability of the Romanian economy to earthquakes alone is further exemplified by the following facts: ñ over 35 percent of Romanians or 65 percent of all urban population is exposed to seismic hazards from the Vrancea fault; ñ 60-75 percent of fixed assets is located in seismic zones; ñ 70-80 percent of GDP is produced in highly seismically prone areas; ñ 45 percent of all national lifelines are in seismic areas of VII-IX intensities on the Mercalli Scale (MSK); There have been various forecasts of future seismic activities, ranging from another earthquake within few years to forecasts anticipating catastrophic seismic activity within next few decades. Regardless of the accuracy of either estimation, it is clear from the historical record that large magnitude earthquakes occur on the Vrancea zone with considerable regularity and that a major event should be anticipated in the coming years. It is estimated that a repeat of 1977 earthquake would result in USD 7.45-17 billion losses which is roughly equivalent to 20-45 percent of the Romanian GDP. If occurs, such a loss would be truly catastrophic for the Romanian economy. Government of Romania has no financial strategy to cope with consequences of a major earthquake nor legal provisions for coverage of incurred liabilities. With the insurance penetration standing at 3-5 percent, \$13,9 per capita or 0.85% of GDP in 2000, most of these losses would have to be absorbed by the government (perhaps through major tax increases and borrowing), local businesses, and homeowners. The 1977 earthquake served as a catalyst for the Romanian government to begin implementation of seismic risk reduction measures. This strategy includes the development and implementation of improved building codes and the identification of at risk structures. The need for effective measures in this regard may be underscored by the fact that 25.9 percent of national housing stock was built before 1944 and is highly vulnerable to earthquakes. The government has recently conducted inventories of several categories of at-risk structures, i.e. privately owned buildings, schools, universities, hospitals, health care facilities, and structures of cultural or historic significance. As a result of this assessment, 541 residential buildings (including 341 in Bucharest), 1,100

schools, 128 university buildings, and 65 hospitals were identified as being at risk. The Ministry of Public Works, Transport and Housing enforces building codes either through its own personnel or other experts trained and certified by the ministry. The general consensus is that the enforcement of codes is effective and substantially free of the inconsistencies that are characteristic of some nations. Floods often affect Romania and there is a tendency for increased flood level and frequency in the last decade. In the 1990's between 1992-2001 there were floods every year in some parts of the country resulting in significant human losses (123 people died due to floods in that period) and material losses. Between 1997 to 2001 the total material losses have been at US\$528.9 million. In 1999 losses were estimated at US\$132 million and in 2000 at US\$98.3 million. A total of 1.3 million ha and 500,000 people are at serious risk of being flooded every year. The Government of Romania has a good understanding of hazards associated with floods. Areas being at risk are identified and mapped. The National Water Authority - Apele Romane has a complete assessment of investment needs for the flood mitigation works to reduce the flood damage in high-risk communities. The main damage risk is presently posed by the unprotected streams and the deteriorated existing flood mitigation facilities. The flood monitoring and forecasting systems, although well organized in regard to the structure of information flow, are technically obsolete and need to be upgraded in order have more reliable data input for forecasting, decision support system (DSS), and for dissemination to communities. Romania has 246 large and medium dams, and 1,260 small dams. Most of these dams were constructed in the last 50 years. The main weakness of the dam safety program in Romania is that there are still four major dams that are considered unsafe due to either damage, or uncompleted or improper construction resulting in spills of contaminants or risk of collapse. The four dams were constructed in 1980's when funds were short and many key items were not built according to the existing standards. Although the safety of the major dams is fairly established, safety of small dams is not clear. Moreover, Romanian experts recognize that an emergency preparedness system for risk of dam break has to be developed. Another natural hazard typical for Romania is risk of landslides. In the rural environment, particularly in mountainous areas, landslides represent a critical hazard. The total estimated area of landslides covers about 800,000 ha, putting at risk 50,000 households, 250,000 people, agricultural land, public and private buildings, public utility networks, and roads. The areas of the highest landslide risk are located in the South Western portion of the Carpathian Mountains. These landslides are attributed to the precipitation, slope degree, soil condition, land use and management. Water pollution from mining pollutants from erosion and catastrophic releases are also facing by Romania. The year 2000 accidents at two tailings dams (Aurul mine, Baia Mare, in January 30; Novat I, Baia Borsa, March 20) in the Maramures region, have shown that there is a need for mainstreaming safety and environmental concerns into industrial operations. According to available information, there are 264 small dams constructed to store mine tailings, out of which about 40 pose a severe threat to the surrounding human population and the environment. Estimated quantifiable damages of US\$3.5 million resulted from just one spill. Long term environmental damages to surface waters from spill and erosion induced-persistence toxins such as heavy metals are of international concern. The Government is committed to improve environmental performance of the mining sector, and has completed comprehensive Mining Sector

Environmental Assessment, which provides a baseline evaluation of the mining regions throughout the country and identifies priority areas for future environmental remediation efforts. Government and local agencies identified pollution from mines and mine tailings as the greatest environmental quality threat (80-90% of priority sites).

2. Objectives

The overall objective of the project is to assist the Government of Romania in reducing the environmental, social, financial and economic vulnerability to natural disasters and water pollution accidents from mining activities through: (i) strengthening the institutional and technical capacity for disaster management and emergency response; (ii) implementing risk reduction measures for floods, landslides and earthquakes; (iii) improving the safety of dams; (iv) establishing a financially sustainable national disaster insurance system; and (v) mitigating the environmental impacts of accidental spills and release of hazardous materials in the Danube River and Black Sea Basins.1a. Project global environmental objective: The Project global environmental objective is to protect the integrity of the Danube River and Black Sea Basins by mitigating the risk of water pollution from mining accidents and reducing catastrophic and persistence erosion sources of transboundary pollution loads. In support of this objective, the Project will improve the management of tailings facilities and thereby reduce pollution from tailing dams in Romania to the Danube River and Black Sea Basins.

3. Rationale for Bank's Involvement

Although there is an enormous level of expertise and knowledge available, the country is not prepared to efficiently respond to a major disaster in terms of technical capacity and emergency management systems. In addition, the country lacks a financing strategy to cope with earthquakes. Therefore, there is a strong need to introduce a financial risk transfer mechanism. Lack of institutional capacity and scarce financial budgetary resources in Romania do not allow for implementation of necessary activities. Bank's expertise and financial assistance can leverage already undertaken as well as newly proposed initiatives, and serve as a catalytic factor for other resources from international financial institutions and bilateral donors. The creation of the framework program including range of coordinated activities financed by a number of organizations can make a real change in Romania's disaster preparedness. Over years, the Bank accumulated significant experience in designing disaster-related projects with a very strong emphasis on decentralized, community focused approach in the field of flood management, earthquake preparedness, and mitigation. The HRMEP team had previously delivered such comprehensive disaster-related projects as: Poland Flood Project (1997), Turkey Flood and Earthquake Recovery Project (1998), Turkey Marmara Earthquake Emergency Reconstruction Project (1999), Algeria Ain Temouchent Earthquake Emergency Recovery Project (2000). The proposed project draws from the international experience of internationally recognized experts in this area. There are many related, either completed or being under way projects of other donors and Bank can have a coordinating role by taking more holistic approach and consolidating risk mitigation and emergency preparedness efforts. The Bank is in a unique position among donors to retain an overall view and has ability to focus on policy, institutional capacity building, and the economic and social aspects of disaster management measures.

4. Description

It is envisaged that the project will consist of the following components and activities:

Component A: Strengthening and Upgrading the Emergency Response Capacity (US\$18 million)

Component Summary:

- Modernization of the communications and information management systems
- Enhancement of emergency response capacity at the regional level
- Integration of seismic monitoring network and the development of real-time loss estimation system
- Development of Vrancea regional earthquake scenario
- Enhancing training and public awareness programs

These activities support the overall strategies and current initiatives of the Romanian government regarding the nation's emergency response system, especially in Bucharest which has the greatest risk. In addition, they address a set of long-standing needs to modernize the infrastructure essential to prepare for and initiate a rapid, coordinated response to a range of emergencies, including earthquakes, floods, landslides and environmental accidents.

Emergency management in Romania, historically a responsibility of the military, was recently transferred to the Ministry of the Interior. As part of a comprehensive strategy to decentralize many functions, the Government has now taken a decision to move Civil Protection and the General Inspectorate for Fire Fighting to the Ministry of Public Administration. This change is effective from January 1, 2002.

Current emergency response systems are antiquated and heavily dependent upon telephonic and fax systems that have historically proven vulnerable at the time of major earthquakes and other emergencies. Linkages between critical functions, especially fire, police, and hospitals are tenuous. Following a feasibility study, the project will support the modernization of an emergency communications and information management system to enhance the capacity of each emergency management function to respond in an effective, timely and coordinated manner. The equipment available to Romanian emergency management is outdated. There is minimal capacity to conduct effective search and rescue operations following major earthquakes or to intervene in hazardous environments because of outdated emergency protective equipment for first responders. Following a feasibility study and needs assessment, the project will support the development of regional capacities to address the full range of hazards equipped with appropriate, contemporary protective equipment, training and capabilities consistent with international standards. This component should include a consideration of the most effective strategies to enhance the capacity of the emergency medical delivery system to support overall intervention strategies.

In addition, the project will support the integration and enhancement of the current seismic monitoring network. The principal objective of this initiative is to develop near real-time capacity to locate and provide rapid loss estimations for use by emergency management officials at the national, prefectural and municipal levels, as well as the Ministry of Public Works, Transport and Housing and the Romanian technical community. This network - which may be considered as part of the overall enhancement of the communications and information technology capacity -- will provide essential data at the time of a major earthquake, reinforce the on-going cooperation between the technical community and government agencies, and provide valuable data for future seismic code development in Romania.

In order to enhance the understanding of the potential range of effects from a major earthquake striking the Bucharest area, the project will support the development of an earthquake-planning scenario to provide officials at the municipal, county and national levels with a detailed estimate of potential impacts from a major Vrancea

earthquake in order to support specific emergency response planning. This scenario will draw upon work already completed by the ministries of Public Works, Transport and Housing, Health and Family, and Education, and investigations by the Romanian technical communities in civil engineering as well as initiatives outlined in sub-component B.1 relating to analysis of lifeline vulnerabilities. Another objective of this component would be to design and launch a program to raise the level of public awareness about measures to be taken before, during and after a major emergency to prepare residents to respond in an organized manner. The component would finance the design of a community-based disaster awareness program. In addition, based upon recommendations from emergency management officials at the national, prefectural and municipal levels, the project will support an enhanced training program for public officials responsible for managing emergencies.

Component B: Natural Disaster Risk Reduction
 (US\$121.5 million) The objective of this component is to support specific risk reduction (mitigation) activities related to three principal hazards in Romania: earthquakes, floods, and landslides.

Sub-component B.1: Earthquake Risk Reduction
 Sub-component summary:

- Cost-Benefit Assessment of Critical Facilities and Lifelines
- Investment in High-Priority Mitigation Measures

 Because of its recognition of the serious risk, the Government of Romania has taken a number of important steps to address the nation's principal seismic risk in the Vrancea earthquake zone, including carrying out a detailed inventory of at-risk structures, establishing priorities for the retrofit of pre-code, privately owned buildings in Bucharest, allocating funds and establishing a loan program to support their retrofit. There is on-going cooperation with JICA, the Japan International Cooperative Agency and the German National Research Foundation to support technical assistance in these areas. Under directives from the government, the Ministry of Public Works, Transport and Housing, the Ministry of Health and Family, and the Ministry of Education have undertaken an inventory of potentially hazardous buildings - residential structures, hospitals, schools, university structures -- throughout the nation, with particular emphasis on Bucharest, the area of highest risk. These structural surveys provide an invaluable initial database for considering alternatives for investments in seismic risk reduction. The earthquake risk reduction activities to be supported through this project are designed to build upon and enhance these efforts and to focus on critical public facilities: hospitals, schools, communications facilities, government buildings and lifelines. Building upon the inventories undertaken by the Ministry of Public Works, Transport and Housing the project will support a functional, technical and economic cost/benefit assessment of these essential facilities. Based upon these results, the project will support investment in implementing appropriate structural and nonstructural mitigation measures for the prioritized facilities. While considerable effort has been expended to make an inventory and assess buildings in the Vrancea earthquake zone, there is no comparable assessment for lifelines - transportation, communications, gas, electricity, water and wastewater facilities and systems. The project will support a comprehensive risk assessment of lifelines in the Vrancea earthquake zone including the development of cost-effective mitigation priorities and strategies. This assessment should be integrated into the overall regional earthquake-planning scenario outlined above and the investment in mitigation priorities.

Sub-component B.2: Flood Risk Reduction
 Sub-component summary:

- Construction and improvement of flood mitigation works
- Rehabilitation of critical areas of the Danube River

Rehabilitation of about four existing large dams and upgrading their safety. Upgrading flood forecasting and flood dissemination systems. The main objective of this component is to reduce risk of flood damage which is presently about \$100 million per year and could be as much as \$200 million for a 100-year flood event. The main damage presently is coming from unprotected streams. In addition there are several structures and facilities that have a high risk of failure, and it is proposed to reduce the risks of failure of these structures. The Danube dike and several unsafe major dams fall into this category of structures. A further reduction in damage risks could come about due to more advanced flood warning and dissemination system. An advanced warning and dissemination system will lower reducible damage. The project will support construction of flood mitigation works consisting of bank protection, dike improvement and new dikes, detention basins and other works to raise the protection levels for agricultural areas (25% probability of protection) as well as important urban areas (1% probability of protection). These works will be constructed in the catchment areas with the largest flood damage i.e. Somes/Tisa, Siret, Cris Negru, Olt and Barzava Basins. Another key activity to be included in this sub-component is rehabilitation of the critical areas of the Danube River where bank erosion threatens the safety of dikes. Most of these are in the Danube catchment's areas. Moreover, it is critical to rehabilitate about four existing large dams and to upgrade their safety to the required standards so that the dams can operate to the design standards to achieve all the flood control, water supply and hydropower benefits. Also, included under this sub-component will be a technical assistance to study about 1,260 smaller dams and to determine the risk of failure and prioritize the dams for rehabilitation according to their risk of failure. This activity will also support preparation of flood plain maps and institutional systems for developing emergency preparedness systems for dam break failure. Finally, the sub-component will support upgrading the flood forecasting and flood dissemination systems for those basins for which investments are being placed. The flood forecasting systems will be upgraded for the technical input forecasting, decision support systems (DSS) for structural operations and for dissemination to the communities. The upgrading will involve the improvement of communications (levels of security), installation of monitoring systems for village level and standardization of models for forecasting. Most of this sub-component will be covered under the US TDA funding and the US ExIm Bank for country-wide flood forecast, and by PHARE for Tisza basin. Bank assistance will be limited to areas at lower administrative level (village level). The Bank will assist the government to ensure that the systems implemented by various donors will be compatible. This component when implemented effectively will reduce flood damage risk substantially which in turn is expected to substantially reduce the levels of flood damage.

Sub-component B.3: Landslide Risk Reduction

Sub-component summary: Technical assistance to define and map the key areas of landslides. Pilot slide protection measures in selected five priority areas. This component will focus on measures to reduce landslide risks. The areas most affected by landslide risks are in the South Western portion of the Carpathian Mountains. The occurrence of landslides particularly affect 500,000 ha (active landslides) and has an impact on all types of buildings, public utility networks, blocking riverbeds and roads. The main causes of these landslides are due to heavy rainfalls, earthquakes, and rapid thawing of ice and snow. The project will support technical assistance to define and map the key areas of

landslides and mechanisms that cause them. The mapped areas would be gazetted to avoid future construction. Since much of the landslide and slumping appears to be caused by deforestation and removal of stabilizing vegetation, high-risk areas will be identified to discourage clear cutting and introduce stabilization measures. The sub-component will also assist Romania in developing standard engineering and other methods to reduce the risk of failure of existing housing or structures, road slides, and public utility failure. Based on selection of five priority areas, pilot slide protection measures will be applied to existing housing, road or highway slide slopes, or public utility facilities.

Component C: Risk Reduction of Water Pollution in Maramures Region (GEF US\$ 5 M)

Component summary:

- Risk assessment/risk-based prioritization methodology and capacity building.
- Baseline monitoring capability and capacity building
- Demonstration of mine and tailing dam reclamation
- Integration of mine and dam tailing disaster response into component A

This component has two objectives in supporting risk reduction of water pollution from mining accidents and more significantly persistent pollution from erosion of mine tailings: (i) to improve the management of tailings facilities and thereby reduce erosion and spill pollution from tailing dams in the Maramures; and (ii) to assist the Government of Romania in protecting the integrity of surface waters in the Maramures region and ultimately Romania, to reduce catastrophic and persistent erosion sources of regional and trans-boundary pollution loads; and in harmonizing with EU environmental directives COM (2000) 664 on "Promoting Sustainable Development in the EU Non-Energy Extractive Industry" . In support of these objectives, the project will integrate mine spill response and flood warning capability as outlined under component B.2 on enhancing current flood warning and monitoring systems; component A on the development and implementation of emergency preparedness plans, and on enhancing prevention, mitigation and preparedness capabilities of local authorities, communities at risk and mining enterprises. Current risk assessments have addressed general risk categories such as risk to surface water resources. A toxicity based-risk assessment that also addresses fate and transport mechanisms for specific contaminants, specific receptors and specific exposure pathways must now be addressed. By providing these capabilities the government may prioritize high risk sites and select those response activities that provide the highest level of human and environmental protection at the lowest cost. Baseline monitoring capability and capacity building activity will include establishment of ambient water quality baselines and baselines of streams altered by persistent sources of mine and other anthropogenic sources of contaminants. These baseline values and methods would meet international standards and serve as benchmark values in evaluating spill response and remediation/reclamation activities. Baseline values also serve as a standard for establishment of analytical methods and reporting methods so that data collected by all international entities is comparable. For example, a standard elevation is needed so that response activities on the Tisza can be coordinated. Monitoring capability is needed by the regulatory agency as well as the response agency in a timely manner to confirm reported compliance values and to provide timely response information. Mobile lab capability and training in environmental sampling, sample handling, analysis and data quality control is anticipated. The project will support demonstration of mine and tailing dam reclamation to reduce persistent surface erosion and potential for catastrophic release introduction of contaminants into surface waters contributing to the Tisza and Danube. Based on the outcome of the risk

assessment, three to four sites would be selected to demonstrate mine and mine tailing dam stabilization, safe handling and disposal of dangerous wastes (used of constructed wetlands), and runoff protection techniques. Equipment requirements, manpower and technical requirements and costs would be carefully recorded for use in final risk reduction/cost benefit analysis. One area of concern is the availability of suitable soil cover. Development of local capability and cottage industry in compost production for sale to the mining industry has a high potential for success. Recent research has also shown that wood chip/organic compost is very effective in controlling erosion. These techniques could then be incorporated into mine closures currently being planned under the Mine Closure and Social Mitigation Project (MCSMP). Finally, mine and dam tailing disaster response activities will be integrated into Component A regarding emergency preparedness. This includes monitoring capability and risk-based response. This component expands upon the capabilities developed under component A by providing specific capability in responding to mine and tailing dam releases. This would also include utilization of the monitoring equipment discussed earlier for emergency planning and response and mobilization of appropriate response assets. The disaster exercise program developed in component A would be developed to address specific surface water releases. The exercise would include notification of international response agencies and assets and demonstrate the establishment and operation of an "Incident Command Structure". Monitoring capability established in the baseline monitoring activity would be used to assess risk and evacuation measures.

Component D: Risk Transfer through Disaster Insurance (US\$ 100 million)

Component summary:

- Technical assistance and business feasibility studies
- Reinsurance premium
- Contingent line of credit in support of the Pool's claim paying capacity

The primary objective of the Disaster Insurance component is to develop a sustainable national risk transfer program that would:

- (i) provide adequate earthquake insurance coverage to the Romanian homeowners;
- (ii) reduce the government financial exposure to natural disasters by transferring most of earthquake risk to international reinsurers and capital markets;
- (iii) give a boost to the development of the domestic insurance industry by offering additional reinsurance capacity for high severity risks to the local insurers.

The low insurance penetration make a strong case for the creation of a well-capitalized privately managed national disaster insurance pool in Romania that would be similar to the Turkish Catastrophe Insurance Pool (TCIP) in Turkey. If created, such a pool would be set up as a specialized single-source provider of earthquake and (possibly, at a later stage) flood insurance coverage for the Romanian homeowners. Since the success of such a program would hinge on its ability to pool risks nationwide, it would be of paramount importance to make such earthquake insurance compulsory for all registered residential dwellings in Romania. The example of Turkey suggests that while affordability of the insurance premium may be an issue for low-income groups, an annual premium of USD15-20 per average size dwelling (an equivalent of a 3 bedroom apartment in Romania) up to USD15,000 in sum insured per dwelling would be affordable for the majority of population. However, it is feasible to arrange for some targeted government subsidies of the insurance premiums for selected income groups, as long as they are limited to a well-defined narrow segment of the population and are fully budgeted for by the government. While the government support (in the form of regulatory initiatives, a public information campaign and capital support) for the creation of such a program will be essential, the

involvement of the local insurance sector in administering such a program is key to its success. It is envisaged that the program will have no public sector employees, with all of the business functions outsourced to the insurance industry. Given the low capitalization of the Romanian insurance industry, the local insurers would be expected to cede up to 100 percent of the risk to the pool, which in turn would reinsure itself in international reinsurance and capital markets with the aim of gradually increasing its retention of risk by building surplus funds. It is feasible however that overtime, in addition to the sales commissions for the distribution of policies, the selected local insurers would be allowed to increase their retentions of risk up to 5-10 percent. The TA and feasibility studies subcomponent will finance (US\$ 5 million) technical assistance to the government and the local insurance sector in preparing the launch of the Romanian Catastrophe Insurance Pool (RCIP). The subcomponent will include:

- actuarial studies to determine rates for earthquake insurance coverage in different parts of the country;
- vulnerability assessments of the Romanian housing stock and lifelines;
- modeling of the expected RCIP's risk exposures and capitalization requirements;
- preparation of policy terms and conditions;
- preparation of operations guidelines and RCIP business plan;
- preparation of the TOR for IT systems;
- a review of the existing legislation and preparation of the earthquake insurance law;
- training of the RCIP staff;
- a study tour for the RCIP staff and the government to learn about international experience in the area of catastrophe risk transfer;
- preparation of GIS based hazard maps;
- preparation of the RCIP's reinsurance tender
- acquisition of IT systems and software for the RCIP

Reinsurance Premium. In the first several years of the RCIP's operation, its claims paying capacity will rely mainly on international reinsurance. Since the reinsurance industry requires reinsurance premiums to be paid upfront at a time of the reinsurance placement (the reinsurance premium is a rate insurance companies are charged that reflects an expectation of their loss or risk by the reinsurer which in exchange for a premium will assume a part of the risks of the insurers), the subcomponent will finance the costs of the RCIP's first year reinsurance program. As the pool's surplus quickly builds up (in the absence of large earthquakes), it is expected that the RCIP would be in the position to cover the costs of reinsurance premium in the second year of its operations. In the past, the Bank successfully financed the procurement of \$850 million reinsurance placement for the Turkish Catastrophe Insurance Pool (TCIP). Contingent Capital Facility. The proposed contingent capital facility will support the RCIP's claim paying capability and will bring credibility to its efforts to place reinsurance. The facility would be made available to the RCIP by the government under a special sub-loan agreement and could be called only to pay claims according to the pre-agreed terms. By making the facility available to the RCIP, the government will also reduce its dependence on international reinsurance markets. While the RCIP can in principle substitute the facility with additional reinsurance and thus avoid additional borrowing under the subcomponent, it is highly advisable to include the facility in the project to avoid potential problems with the placement of reinsurance in the first several years of the pool's operations.

Component E: Project Management and Monitoring (US\$4 million) The component will finance the costs of creation and maintenance of the central PCU and the small support units to be established in the respective ministries responsible for the related components.

5. Financing

Total (US\$m)

BORROWER \$30.00

IBRD \$150.00

IDA

GLOBAL ENVIRONMENT - ASSOCIATED IBRD FUND \$5.00

FOREIGN MULTILATERAL INSTITUTIONS (UNIDENTIFIED) \$65.00

Total Project Cost \$250.00

6. Implementation

The multi-sectoral character of the project will require involvement and cooperation between a number of Ministries and governmental agencies. The support units will be established in the respective Ministries responsible for the related components (e.g., Ministry of Public Administration, Ministry of Public Works, Ministry of Waters and Environment, and Ministry of Industry, etc.). The support units should be focusing on procurement-related aspects of project implementation. At the same time, it is necessary to establish a coordinating and monitoring body to oversee activities of these units. Due to its central function, the Project Coordination Unit (PCU) is proposed to be located at the National Commission for Disaster Protection, under the Prime Minister's Office. The PCU would have general overview of the project activities, including responsibilities with regard to financial management, disbursement and monitoring. Furthermore, the PCU would provide comprehensive reports on the progress of implementation to the Government of Romania and the Bank. During the early phase of project preparation, the Bank team will review the implementation requirements and capacities, and will further define the various roles and responsibilities of the concerned agencies. The recommended structure is based and builds on the already existing disaster response system in Romania with the National Commission for Disaster Prevention at the Prime Ministry's level, and sectoral commissions set up in the line ministries.

7. Sustainability

The key factor critical for sustainability of the project benefits is an understanding and commitment on the part of Romanian authorities both at central, and local levels, to the need for introduction of measures included in the HRMEP project. In fact, most of these measures were demanded and predefined by the Romanian counterparts. Realization of the risks involved if the recommended activities are not implemented and sustained, constitutes the strongest incentive for the executing institutions and other stakeholders to promptly initialize the outlined activities and to continue their support and sustain the benefits deriving from the project. Capacity building in the area of risk mitigation and emergency preparedness is critical part of the project, targeting governmental entities, public institutions and local communities. By the end of the project, these stakeholders will be able to implement the necessary measures and further replicate the internationally endorsed practices. The created structures, like the disaster insurance pool will have the mechanisms for self-financing (via re-insurance, accumulated premiums, and contingent capital facility) that will ensure their operations beyond the time frame of the project. Material support provided by the project in form of infrastructure, retrofitted key public buildings, modernized communication, monitoring and forecasting systems, etc. will be in place to make effective use of the acquired skills. The

existing level of scientific and technical expertise in Romania provides assurance that benefits of the project are not only sustained but even further advanced in the future.

8. Lessons learned from past operations in the country/sector

Bank experience with disaster assistance to the number of countries worldwide has shown that mitigation activities, intended to reduce the impact of future disasters are crucial for decreasing a burden on state budget usually resulting from such event. The proposed project introduces the mitigation and disaster management instruments as main project activities. The previous Bank operations were mostly designed as a response to disasters with a main objective to contribute to the reconstruction and recovery efforts. E.g., the Bank had three post-disaster operations in Romania following floods in 1975 and earthquake in 1977. Two complementary flood recovery projects financed procurement of industrial assets (mostly equipment and spare parts) damaged by the floods, provided support to affected farms, and small portion of the loan financed installation of flood warning system (\$2.8 million). The Post-Earthquake Construction project financed imports of special machinery, and their parts for the construction industry. The recent Bank's ECA Disaster Management Strategy indicates that the ECA region needs to shift its focus from disaster response to more proactive approach. Considering region's vulnerability to natural disasters, a new approach has to be introduced. The Strategy formulates the following objectives: (i) to promote, advocate and support comprehensive risk mitigation activities on the regional, national and local level, (ii) to strengthen the institutional capacity for disaster management, and (iii) to assist in minimizing environmental, social and economic impacts of catastrophic events through disaster mitigation, emergency preparedness, and risk transfer. The HRMEP project fully applies this approach by concentrating its support on mitigation and preparedness measures. Implementation of other disaster-related projects proves that the design should be to the possible extend decentralized, with involvement of local communities, and take into account local implementation capacity. The proposed project implementation structure is based on existing structures and takes into account Romania's capacity demonstrated in other Bank projects. At the preparation stage, a social assessment will be conducted and its findings will be further incorporated in the project design.

9. Program of Targeted Intervention (PTI) N

10. Environment Aspects (including any public consultation)

Issues : The project does not involve significant environmental issues. Apart from the flood protection infrastructure, the retrofitting of critical public facilities, and the demonstration projects on mine and tailing dam reclamation, which will address past environmental degradation from the mining sector, no additional structures of significant size are envisaged under the project. Specific physical investments will be defined during the course of the project preparation. On the basis of available information, it is not expected that the project will require land acquisition or result in involuntary resettlement. Further confirmation will be obtained during the preparatory phase. An environmental assessment will be undertaken by the borrower during the project preparation process in accordance with World Bank environmental

safeguard policies and Romanian environmental impact assessment regulations. An Environmental Management Plan will be developed to ensure activities to be supported by the project will be closely monitored during the implementation phase.

11. Contact Point:

Task Manager
Christoph Pusch
The World Bank
1818 H Street, NW
Washington D.C. 20433
Telephone: (202) 473-2494
Fax: (202) 614-0696

12. For information on other project related documents contact:

The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-5454
Fax: (202) 522-1500
Web: [http:// www.worldbank.org/infoshop](http://www.worldbank.org/infoshop)

Note: This is information on an evolving project. Certain components may not be necessarily included in the final project.

This PID was processed by the InfoShop during the week ending April 12, 2002.