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R2018-0175/1

June 28, 2018

Closing Date: Tuesday, July 24, 2018 at 6:00 p.m.

FROM: Vice President and Corporate Secretary

Romania - Strengthening Disaster Risk Management Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed loan to Romania for a Strengthening Disaster Risk Management Project (R2018-0175), which is being processed on an absence-of-objection basis.

Distribution:
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Report No: PAD2759

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF EUR50 MILLION
(US$ 60.48 MILLION EQUIVALENT)

TO

ROMANIA

FOR A

STRENGTHENING DISASTER RISK MANAGEMENT PROJECT
June 27, 2018

Social, Urban, Rural and Resilience Global Practice
Europe and Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective: April 30, 2018)

Currency unit =	Euro
EUR 1.00 =	US$ 1.21
US$ 1.00 =	EUR 0.83
US$ 1.00 =	RON 3.85

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Cyril E Muller
Country Director:	Arup Banerji
Senior Global Practice Director:	Ede Jorge Ijjasz-Vasquez
Practice Manager:	David N. Sislen
Task Team Leader(s):	Alanna Leigh Simpson, Elif Ayhan

ABBREVIATIONS AND ACRONYMS

Cat DDO	Catastrophe-Deferred Drawdown Option
CE	Citizen Engagement
CPF	Country Partnership Framework
DES	Department of Emergency Situations
DPL	Development Policy Loan
DRM	disaster risk management
EM-DAT	Emergency Events Database
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EU	European Union
FM	Financial Management
GDP	gross domestic product
GFDRR	Global Facility for Disaster Reduction and Recovery
GIES	General Inspectorate for Emergency Situations
GRM	Grievance Redresses Mechanism
GRS	Grievance Redress Service
HRMEP	Hazard Risk Mitigation and Emergency Preparedness Project
IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion and Results Report
IDA	International Development Association
IPF	Investment Project Financing
ISP	Implementation Support Plan
M&E	Monitoring and evaluation
MoC	Ministry of Culture and National Patrimony
MoE	Ministry of Environment
MoIA	Ministry of Internal Affairs
MoPF	Ministry of Public Finance
MoRDPA	Ministry of Regional Development and Public Administration
MTR	Mid-term Review
NCSES	National Committee for Special Emergency Situations
NDC	Nationally Determined Contribution
NMISES	National Management Information System for Emergency Situations
PCU	Project Coordination Unit
PDO	Project Development Objective
PGA	Peak Ground Acceleration
PIU	Project Implementation Unit
POM	Project Operations Manual
PPP	purchasing power parity
PPSD	Project Procurement Strategy for Development
RO-RISK	Government of Romania Risk Assessment
SDR	Special Drawing Rights
SoP	Series of Projects
SORT	Systematic Operations Risk-Rating Tool
SMISU	Sistemul de Management Informațional pentru Situații de Urgență (National Emergency Management System for Emergency Disaster and Response)
SMURD	Serviciul Mobil de Urgență (Emergency Rescue Service)
TDRF	Triple Dividend of Resilience Framework
ToR	Terms of reference
UN	United Nations
UPU/CPU	Unități / Centre de Primiri Urgențe (Emergency Care Units and Centers)
UTCB	Universitatea Tehnica de Constructii Bucuresti *(Technical University of Civil Engineering of Bucharest)*
VSL	Value of a statistical life

BASIC INFORMATION

Country(ies)	Project Name	
Romania	Strengthening Disaster Risk Management Project	
Project ID	**Financing Instrument**	**Environmental Assessment Category**
P166302	Investment Project Financing	B-Partial Assessment

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[✓] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
02-Aug-2018	31-Dec-2024

Bank/IFC Collaboration

No

Proposed Development Objective(s)

The Project Development Objective is to enhance the resilience of critical disaster and emergency response facilities and to strengthen the institutional capacities in investment planning for disaster risk reduction and climate change adaptation

Components

Component Name	Cost (US$, millions)
Improving Resilience of Disaster and Emergency Response Infrastructure	52.62
Enhancing Institutional Capacity for Risk Reduction Investment Planning	5.02
Project Management	2.84

Organizations

Borrower: Romania (through its Ministry of Public Finance)

Implementing Agency: Ministry of Internal Affairs - Department of Emergency Situations and General Inspectorate for Emerg

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	60.48
Total Financing	60.48
of which IBRD/IDA	60.48
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	60.48

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2019	2020	2021	2022	2023	2024	2025
Annual	0.40	2.00	4.00	16.50	15.00	22.10	0.48
Cumulative	0.40	2.40	6.40	22.90	37.90	60.00	60.48

INSTITUTIONAL DATA

Practice Area (Lead)	Contributing Practice Areas
Social, Urban, Rural and Resilience Global Practice	

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?	
a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Low
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Low
9. Other	
10. Overall	Moderate

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04		✓
Forests OP/BP 4.36		✓
Pest Management OP 4.09		✓
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10		✓
Involuntary Resettlement OP/BP 4.12		✓
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Conditions

ROMANIA

STRENGTHENING DISASTER RISK MANAGEMENT IN ROMANIA (P166302)

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I. STRATEGIC CONTEXT

A. Country Context

1. **Romania is one of the fastest growing economies in the European Union (EU), with growth of 7 percent in 2017.** Growth was led by private consumption (up to 9.5 percent annually), which was fueled by rate reductions in the standard value added tax (VAT), personal income tax, and corporate income tax, and by increases in the minimum and public-sector wages and pensions. Despite its fast-economic growth over the last years, Romania still faces the twin challenges of inclusion and consolidating the sustainability of its growth model through better-quality investments, higher productivity, and exports, rather than through domestic consumption alone. Investment increased by 5.4 percent, on the back of a resurge in private investment, but public investment underperformed declining by 9.5 percent.

2. **Romania is still among the poorest countries in the EU.** With more than a third of its population living on less than US$5 per day (as measured in 2005 purchasing power parity [PPP] terms), Romania has the highest share of population living in moderate poverty in the EU. While growth was broadly inclusive over the past 10 years, the 2008 financial crisis halted progress in poverty reduction and growth in income for the bottom 40 percent. Moreover, while the income of the bottom 40 percent increased by an annualized 12.6 percent between 2006 and 2008, despite the relevant measures taken by the Government to overcome the crisis effect, the income growth was negative, on average, for all households, and the incomes of the bottom 40 percent were hit by some of the largest shocks in the region from 2009 to 2013, a result of large-scale employment losses and reductions in pension benefits.[1]

3. The government's program for 2018–2020 is focused on further investments in infrastructure, health care, education, support for job creation, and small and medium enterprise development, in addition to tax and pension reforms. **The government's program reconfirms Romania's road map for achieving the Europe 2020 objectives for smart, sustainable, and inclusive growth.** It prioritizes the use of EU funds for investment in line with the European Structural and Investment Funds envelope for 2014–2020, which amounts to approximately €40 billion.

B. Sectoral and Institutional Context

4. **Geophysical and climate-related disasters pose a considerable threat for Romania's poverty alleviation efforts and its sustainable economic growth, with disaster losses growing as climate change and urbanization occur.** Romania is prone to a range of natural disasters, particularly earthquakes, floods, droughts, and extreme weather, which have resulted in significant physical, social, and financial impacts over recent decades. Since 1990, 77 severe disaster events[2] were recorded in Romania, including 44 floods, 15 extreme temperature events, 7 storms, 2 earthquakes, 1 drought, and 1 landslide, resulting in

[1] As result of the IMF/EC multilateral financing package agreed
[2] To be classified as a disaster, an event must conform to at least one of the following criteria: 10 or more dead, 100 or more affected, declaration of state of emergency, or call for international assistance (Emergency Events Database [EM-DAT]).

over US$3.5 billion of direct damage.[3,4] Disaster impacts are now increasing for several reasons, including (a) increased exposure of people and economic assets, (b) insufficient funding for risk reduction, and (c) climate change effects.

5. **Romania's vulnerability to natural disasters will be further exacerbated by climate change.** Romania's climate is predicted to change considerably over the next 50–100 years. Expected increases in air temperature vary between climate models, but increases in the annual average temperature are expected to be in the range of 0.5°C and 1.5°C by 2029, and 2.0°C and 5.0°C by 2099. Projected increases in temperature and changes in temperatures are expected to lead to more frequent and persistent heat waves, and more spatially extended droughts. The total amount of annual precipitation is projected to decrease by about 10–20 percent (depending on the climate model scenario and geography within Romania) by the end of the century. Precipitation patterns are also expected to become more irregular, with flood risk increasing as intense localized rainfall events grow more frequent (though shorter in duration). Observed and anticipated climate change impacts include the increased incidence of severe inland flooding and greater frequency of flash floods, the increased intensity and frequency of droughts, and an increased risk of soil erosion and desertification.

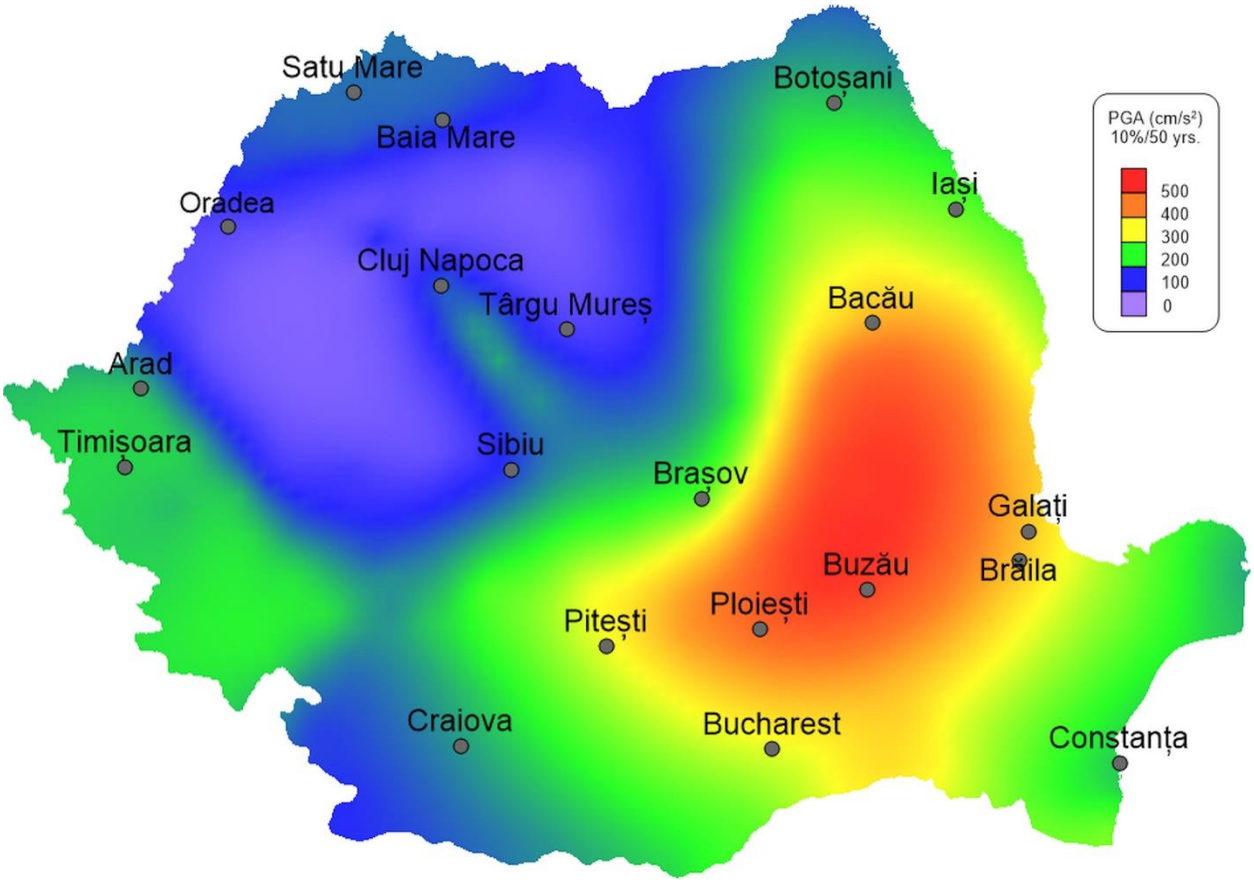
6. **Romania is one of the most at-risk countries from earthquakes in the EU, with hundreds of lives lost and tens of thousands of buildings damaged in earthquakes in the last 200 years.[5]** In each of the last five centuries, there have been on average, two earthquakes of magnitude 7+, with five earthquakes since 1802 of magnitude above 7.5. Moreover, seismic experts consider a high magnitude earthquake possible at any time. The vulnerability of the Romanian economy to earthquakes is exacerbated by the fact that more than 75 percent of the population (65 percent of the urban population) is in areas with high earthquake hazard, as is 45 percent of all critical transport, energy, water, and communication services.[6] Furthermore, 60–75 percent of Romania's fixed assets, which contribute to 70–80 percent of the country's gross domestic product (GDP), are located in seismic zones.

7. **Bucharest is one the most earthquake-prone capital cities in the EU due to its proximity to the Vrancea earthquake zone, which is capable of producing earthquakes as high as magnitude 8.1.[7]** In 1977, a moment magnitude 7.4 earthquake caused over 1,500 fatalities, left 11,321 injured, and collapsed or severely damaged 156,000 residential apartments. More than 2,274 schools and 459 hospitals were severely damaged. In 1978, a World Bank report estimated a total loss of US$2 billion (in 1978 dollars), with Bucharest accounting for 70 percent of the total (approximately US$1.4 billion). Scientists and engineers estimate that a similar event today might have direct damage costs of €7 billion to €11 billion, with economic losses exceeding €25 billion[8]. They also estimate that the fatalities could range from 700

[3] Data are from D. Guha-Sapir, R. Below, and Ph. Hoyois, EM-DAT: The CRED/OFDA International Disaster Database, Université Catholique de Louvain, Brussels, Belgium, *www.emdat.be*.
[4] More regular, lower intensity events happen on an annual basis including flash floods, smaller floods, landslides and so forth.
[5] Vulnerability to seismic risk is due to Romania's geographical location on the Vrancea subduction zone. Proximity to the fault and poor soils mean that Bucharest is one of Europe's capital cities with the highest disaster risk and one of 10 cities most vulnerable to seismic risks in the world.
[6] General Inspectorate for Emergency Situations, "Country Report: 5.1 Conditionality Romania 2016," https://www.igsu.ro/documente/RO-RISK/Raport_Final_de_tara.pdf
[7] Information from Professor Radu, Vacareanu, Technical University of Engineering Bucharest, 2017.
[8] Ranges from various reports from: Karlsruhe Institute of Technology; Technical University of Bucharest; Romanian Insurers'

to 4,500,[9] with functionality and access to housing in Bucharest reduced to 30 percent, and rising slowly to 65 percent after a year and 90 percent after two years.[10] The increased concentration of economic assets and population growth in earthquake-prone areas such as Bucharest (figure 1) means that the risk will increase over time, almost doubling by 2080, unless urgent action is taken to reduce and manage earthquake risks.

Figure 1: Probabilistic seismic hazard map for Romania[11] (10 percent probability of exceedance in 50 years)



Source: Technical University of Civil Engineering of Bucharest (UTCB), 2018

8. **Romania is also one of the most flood-prone countries in Europe,[12] with significant damage from hydrometeorological events occurring several times per decade.** In 2006, extreme floods resulted in

Professional Body (UNSAR); and World Bank. Country Risk Profiles for Floods and Earthquakes in Europe and Central Asia (2016), Washington, DC.

[9] Fatality ranges are so wide because the timing of the earthquake (day/night) significantly changes the number of people who could be inside buildings when they are damaged or collapse.

[10] Estimates are based on modeling undertaken by the Technical University of Bucharest.

[11] Probabilistic seismic hazard map established on spectral ordinates for mean return period of 475 years. The higher PGA values are associated with more intense shaking of the earth in those locations.

[12] From 1987 to 2002, Romania had the greatest area in the EU impacted by repeated floods. European Spatial Planning Observation Network, 2004.

economic damage equivalent to 1 percent of GDP. Romanian officials ordered controlled flooding of thousands of hectares of unused agricultural spaces to prevent further damage to cities across Romania. A total of 160 localities and 21,000 ha of farmland were affected; and 10,000 homes, 600 km of roads, and 300 bridges were damaged. Today, experts anticipate that a 100-year flood along the Danube River would affect more than 800,000 inhabitants, 3,550 communities, 5 percent of national highways, 700 km of major roads, more than 2,000 km of county and local roads, 100 nationally protected areas, and more than 300 cultural heritage buildings.[13] For a 1,000-year flood, more than 1.8 million inhabitants would be affected. Moreover, by 2080 (considering the change in socioeconomic and climate conditions), GDP losses from floods could quadruple (depending on the mitigation pathway selected). Across Romania, GDP losses are currently highest in Ialomita and Satu Mare Counties, followed by Arad, Teleorman, Giurgiu, and Calarasi Counties.[14]

9. **Romania is also experiencing increased frequency and intensity of landslides, wildfires, drought, and extreme heat/cold events.** Bucharest currently ranks fifth among the fastest-warming cities in the world. The frequency of wildfire events has doubled, from approximately 175 per year (1956–2005) to approximately 341 events per year in the last decade, with a 25 percent increase in burn area per event. While snowfall has decreased overall across the country, snowfall events are becoming more intense, as was seen in the 2014 event. During the 1980–2012 period, drought occurrences increased, with more than 50 percent of those years having precipitation amounts below normal. The 2011–2012 droughts resulted in a 40–60 percent decline in crop yields. Landslides are frequent in some areas, associated with snowmelt and spring rain, intense rainfall in summer, and earthquake activity. Most of the damage is related to homes and road infrastructure.

10. **The annual average risk to assets in Romania is 0.41 percent of GDP, and the well-being risk is 0.58 percent of GDP.**[15] Compared to other EU countries, Romania has high asset risk, significant risk to social well-being, and relatively lower resilience. Compared to Poland, for example, Romania faces double the risk to assets and socioeconomic activity from disasters. In Romania, 70 percent of assets of the poor are vulnerable to destruction, compared to 43 percent in Poland, and the assets of the non-poor in Romania have three times the vulnerability of comparable assets in Poland. Finally, 80 percent of the population in Romania has access to early warning, compared to 100 percent in Poland. Considering actions that could be taken, **policies aimed at reducing exposure and vulnerability of assets and improving access to early warning systems could reduce asset losses by 13 percent and well-being losses by 16 percent.** Policies aimed at increasing resilience—through access to savings, insurance, and finance, and through accelerated reconstruction arising from access to finance and streamlined processes, post-disaster support, and so on—could reduce asset losses by 2.8 percent and well-being losses by 14 percent.

11. **Romania is committed to improving disaster risk management (DRM), with improvements to the country's emergency response system a national priority.** These improvements include enhancing early warning systems and information management, modernizing equipment for search and rescue operations,[16] integrating preparedness and response procedures for medical and nonmedical emergency

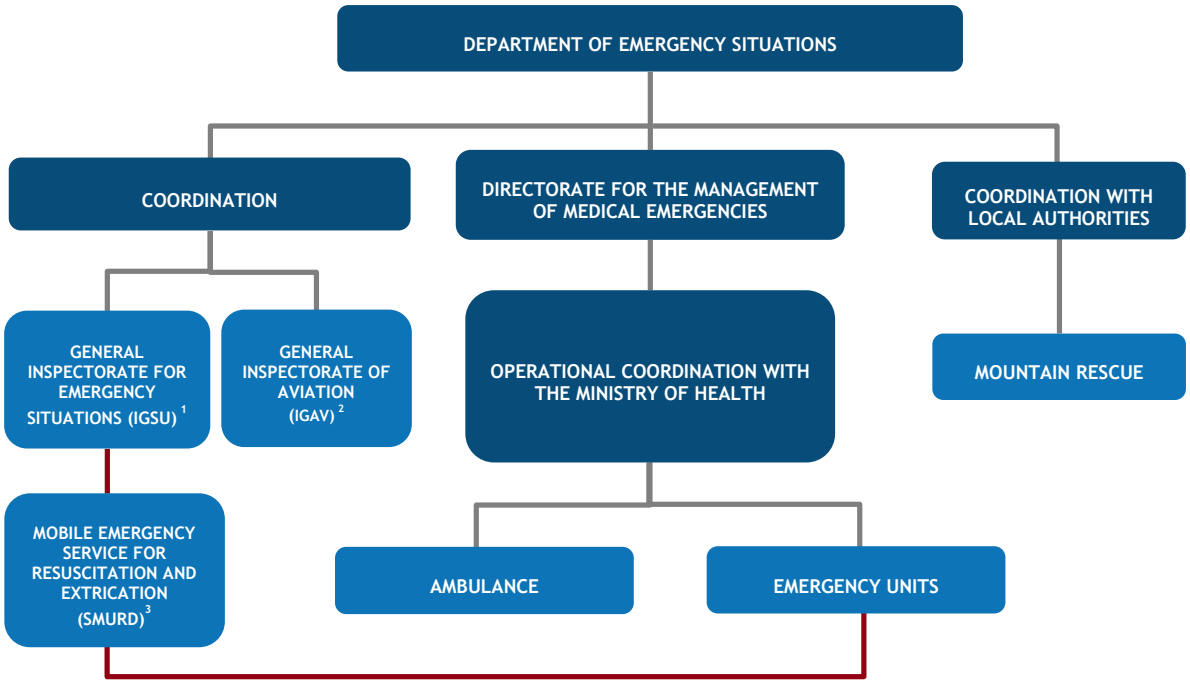
[13] Estimates are based on risk assessment conducted by the Government of Romania, known as RO-RISK (2017).
[14] World Bank: Europe and Central Asia Earthquake and Flood Risk Profiles
[15] World Bank and Global Facility for Disaster Reduction and Recovery resilience indicator.
[16] An Urban Search and Rescue Team with the GIES received accreditation in 2014 by the International Search and Rescue Advisory Group (INSARAG) for disaster response in accordance with United Nations and European Union standards.

situations, and developing information campaigns and information applications for citizens. In addition to its national public awareness campaigns, Romania's local emergency responders promote disaster risk preparedness and response at all levels with brochures, posters, and flyers. Recently, through the Ministry of Internal Affairs (MoIA) and the Department of Emergency Situations (DES), the government has actively engaged local civil society to improve preparedness and response capability and to start training volunteers to support response. In 2008, the government also introduced compulsory indemnity home insurance (Insurance Pool against Natural Disasters [PAID]) to cover losses caused by earthquakes, floods, and landslides; approximately 20 percent of homeowners are currently covered.

12. **The structure for emergency and disaster response in Romania has undergone significant changes in recent decades.** Since 1989, Romania has been going through a major transition with associated re-organization of the disaster and emergency response structure.[17] Major changes were taken in 2004 through the Government Emergency Ordinance no. 21/2004 which set up the National System of Emergency Situations Management and created the General Inspectorate for Emergency Situations by merging the Fire Brigade Military Corp and the Civil Protection Command. **In 2014 an update of the legal framework (Government Emergency Ordinance 1/2014) led to the creation of the DES, within the MoIA, which is in charge of national coordination of emergency prevention and management actions, the provision and coordination of human, material, financial and other resources needed to restore normality, including specialist first aid and emergency medical care in Emergency Care Units and Centres (figure 2).** The DES coordinates the GIES, the General Inspectorate of Aviation (with respect to medical missions), and performs the operational coordination of territorial ambulance services in counties and in Bucharest, Emergency Rooms form the Emergency Hospitals, and of public mountain rescue services.

[17] Before 1989, the National Government took full responsibility for the reconstruction work in the aftermath of disasters. The Government mobilized military and other public/private resources through top-down directives to manage large-scale damages. All related financial consequences of large-scale disasters were managed by the state.

Figure 2. Organizational Chart of the Department for Emergency Situations within the Ministry of Internal Affairs



[1] IGSU - Inspectoratul General Pentru Situații de Urgență
[2] IGAV - Inspectoratul General de Aviație
[3] SMURD - Serviciul Mobil de Urgență, Reanimare si Descarcerare

13. **The DES and the GIES have made considerable progress since their creation**, including: leading Romania's commitment to the international policy for disaster risk reduction (in line with the 2015 Sendai Framework for Disaster Risk Reduction); creation and operationalization of the multi-sector, multi-institutional National Platform for Disaster Risk Reduction that also brings together Government, civil society, private sector and academia; implementation and operationalization of the national emergency management system for emergency disaster and response (SMISU) emergency management information system that enables reporting of disaster and emergency situations and deployment of appropriate rescue and emergency services; and creation and training of volunteer emergency responders. Moreover, under the leadership of these institutions, Romania recently completed a multi-hazard risk assessment of Romania.[18] These institutions have also recently embarked on a significant program to upgrade and modernize its emergency and response equipment. In the last two years, the Department for Emergency Situations has performed a series of actions regarding communications with civil society and early-warning systems.

14. **The Ministry of Regional Development and Public Administration (MoRDPA) is responsible for seismic risk reduction and the integration of disaster and climate risks in sub-national urban, land use,**

[18] To enhance the understanding of the risks, in all their dimensions, the level of vulnerability, capacities and exposure of persons and assets, and characteristics of the hazards, Romania has recently completed a risk assessment (RO-RISK) process at the national level, which will represent the base of the whole process of understanding and risk awareness to elaborate strategies and programs for reducing and maintaining risks at an acceptable level.

and regional plans. The National Program for Local Development covers infrastructure (roads, bridges, water treatment plants, schools, hospitals, and cultural buildings) and a series of smaller programs are dedicated to sports buildings. The MoRDPA is also in charge of programs aimed at the reduction of seismic risk in the high-risk buildings in Romania, a program that has had limited success due to legislative and implementation issues. The MoRDPA is also seeking to devise an improved strategy to address seismic risk in multifamily residential buildings, as part of its broader housing reform agenda. Finally, the MoRDPA is also in charge of strengthening building codes against seismic risk for new and existing buildings, and has recently commissioned further upgrades. The MoRDPA is also responsible for supporting subnational authorities in the integration of climate and disaster risk into development and urban plans.

15. **The Ministry of Water and Forests is responsible for implementation of, and compliance with, the EU Floods Directive.** This involves (a) a preliminary assessment of flood risk in river basins and coastal zones, (b) development of flood hazard maps and flood risk maps in high-risk zones, and (c) development of flood risk management plans in these zones. These plans must include measures to reduce the potential adverse consequences of flooding for human health, the environment, cultural heritage, and economic activity, and should focus on prevention, protection, and preparedness. Romania is currently compliant with the EU Flood Directive[19], and more than €3.7 billion of investments in flood protection were identified under the flood management plans; but the level of implementation of these identified priorities remains unclear. A recent World Bank report[20] highlighted the urgent need to invest in dam storage and flood protection to reduce flood risk and increase storage for droughts. Currently, many dams are structurally unsafe and need to be operated below their original design to ensure the safety of downstream residents.

16. **The Ministry of Environment (MoE) is the authority responsible for administrating the National System for Climate Change.** The MoE is also responsible for the estimation of greenhouse gas emissions. The National Strategy on Climate Change (2005-2007) of Romania is focused on meeting its obligations and duties on climate change including adapting to the impact of climate change, reducing carbon intensity in the national economy and increasing its competitiveness. This strategy was updated to the National Climate Change Strategy for 2013-2020. This strategy refers to the effects of climate change on water safety, agriculture, energy, transport, industry, insurance, biodiversity, health, tourism, forestry, infrastructure, and recreational activities.

17. **As an EU member state and signatory to the Paris Agreement, Romania is a party to the mitigation and adaptation commitments made in the EU's collective National Determined Contribution (NDC).** Romania also adopted a National Climate Change Strategy for 2013-2020 in 2013, followed by the National Climate Change and Low Carbon Green Growth Strategy for 2016-2030 and the associated Action Plan on Climate Change for 2016-2020 in 2015. Each of these documents establishes sectoral priorities for responding to climate change, including energy, transport, agriculture and rural development, forests, biodiversity, urban Development, and water and waste management. Greater disaster preparedness, improved response capabilities, and specific investment and development actions to reduce hydro-meteorological disasters are critical to the short and long-term management of climate risks.

18. **Romania also committed to the international Sendai Framework for Disaster Reduction 2015–**

[19] *http://ec.europa.eu/environment/water/flood_risk/implem.htm*
[20] World Bank, "Romania Water Diagnostic Report: Moving towards EU Compliance, Inclusion and Water Security," 2018.

2030 at the Third UN World Conference for Disaster Risk Reduction in Sendai, Japan, in 2015.[21] The Sendai Framework is a 15-year, voluntary, nonbinding agreement that recognizes the state as having the primary role in reducing disaster risk but holds that responsibility should be shared with other stakeholders, including the local government and the private sector. It aims for the substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries.

19. **In the event of a major emergency that exceeds response and disaster management capacity at sub-national level, the National Committee for Special Emergency Situations (NCSES) can be convened**. The main piece of legislation regulating the emergency situations is the Government Emergency Ordinance no. 21/ 2004 on the National Emergency Situations Management System (NESMS, in Romanian: SNMSU - Sistemul Național de Management al Situațiilor de Urgență), as subsequently amended, and its secondary legislation and supplemented by the Government Decision (GD) (Ordinance) No. 94/2014 on certain measures for emergency situation management.

20. **The NCSES is formed of representatives of all Government ministries at the Minister or State Secretary level, including the MoIA and the MoPF, and is chaired by the Minister of Internal Affairs.** The NCSES will convene and the Chief of the DES will report on the disaster parameters. According to GD no. 94/2014, the NCSES will issue decisions with respect to actions that should be taken to respond to the disaster event calamity/emergency situations related to natural, technological, biological (such as pandemics), or radiological phenomena occurred or imminent threat of natural disaster. The decisions are voted on by all its members, according to process outlined in GD no. 94/2014. The resulting legal evidence is a Decision of the NCSES, which is signed by the President of the NCSES (currently Minister of Internal Affairs).

21. **Despite this progress in DRM across various ministries, the government does not yet have a systematic process in place to reduce the seismic risk in public buildings, especially for those that are critical for disaster response and recovery.** Public buildings at risk of significant damage or collapse include fire stations, ambulance and rescue services, civil protection command centers, city halls, and hospitals — damage to which would significantly reduce the ability to rescue and care for injured persons and to continue critical health provision and public administrative functions. Although 2,000 schools were severely damaged or collapsed in the 1977 earthquake, the education sector has not undertaken systematic seismic risk reduction interventions in preschool, kindergarten, elementary, and secondary school buildings. Moreover, critical lifeline utilities such as water, energy, communication, and transport lack comprehensive measures to quantify and reduce risks from different hazards, an issue exacerbated by decentralized government ownership and oversight of such services. Challenges around ownership clarity, regulations and institutional capacity for implementation have hindered systematic risk reduction. After decades of limited progress there is considerable institutional inertia on risk reduction.

22. **The increased incidence of natural disasters, coupled with the projected climate outlook for Romania, highlights an urgent need to enhance the country's physical, social, and financial resilience to climate and disaster risks.** This need can be met through a comprehensive disaster and climate resilience

[21] The Romanian statement at the Sendai conference is available at https://www.preventionweb.net/files/globalplatform/romania[1].pdf. The text of the Sendai Framework is available at https://www.unisdr.org/we/coordinate/sendai-framework.

program in Romania that combines several approaches:

a) Prioritizing urgent investments in risk reduction, preparedness and response, particularly in public buildings with critical functions before, during and post-disaster.
b) Accelerating policy reforms aimed at building disaster and climate resilience; and
c) Providing access to predictable post-disaster financing and enhancing the Government's capacity to manage the fiscal impacts of natural disasters.

23. This project will support progress on approach (a) above, with a parallel Development Policy Loan (DPL) with Catastrophe-Deferred Drawdown Option (Cat DDO) (P166303) focused on policy reform and access to contingent financing, and expected for approval on June 28, 2018. The Cat DDO has a policy program focused on disaster and climate resilience, including prior actions centered around: (i) Establishing the National Platform for Disaster Risk Reduction; (ii) Adopting a national emergency management system for emergency disaster and response (SMISU) which is effective nationwide; (iii) Strengthening the national building code for seismic risk reduction in existing buildings; and (iv) Developing the Ro-Risk assessment and ensuring that this data is available to the public on the Ro-Risk platform. These policy actions and the associated results will support the implementation of this IPF.

24. This project also supports the elevation and prominence of the disaster risk management within the government and society of Romania, and how critical this agenda is to ensure the resilience and sustainability of development in Romania in the long term. Romania is currently compliant with EU Directives relevant to resilience; however, these Directives are targeted to specific areas and discussions are ongoing in the EU on how to build a broader culture of ex-ante resilience to disasters and climate – from an infrastructure, people and financial perspective.[22] Therefore, the focus on accelerating resilience through concrete risk reductions in this operation will also provide a model for other EU countries and ongoing reforms.

C. Higher Level Objectives to which the Project Contributes

25. **Building disaster and climate resilience is essential to supporting the World Bank's twin goals of ending extreme poverty and promoting shared prosperity.** Disaster events can undermine hard-earned development gains, potentially trapping vulnerable groups in poverty and preventing economic growth. Therefore, activities contributing to resilience are directly linked to sustained development and allow the poorest—those most affected by such disasters—to escape cycles of poverty. As a matter of fact, a recent World Bank report entitled *Unbreakable: Building the Resilience of the Poor in the Face of Disasters*[23] demonstrates that there are multiple reasons why the poor are often hit hardest by disasters, including their inability to cope and recover and the permanent impact of disasters on their health and education. DRM interventions can therefore significantly reduce the potential impacts of disasters and protect existing development gains. Such interventions are also in line with the World Bank's corporate agenda, which adopted DRM as a priority item during the 2012 Annual Meetings in Tokyo (World Bank Sendai Statement).

[22] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017PC0772
[23] Stephane Hallegatte, Adrien Vogt-Schilb, Mook Bangalore, and Julie Rozenberg, *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters* (World Bank: Washington, DC: 2017).

26. **The proposed project is fully aligned with the objectives of the proposed Country Partnership Framework (CPF) FY19–23, to be discussed by the Board of Executive Directors in June 2018, which seeks to reduce poverty in Romania and foster sustainable income growth for the bottom 40 percent of the population.** The CPF is focused on building better public institutions and has three focus areas, the third of which — "Build Resilience to Shocks" — is relevant to this program. This focus area includes an objective to improve preparedness to natural disasters and strengthen adaptation to climate change, and this Project supports achievement of this objective through its focus on disaster-resilient, climate resilient, and energy-efficient public buildings. The project is in line with the overarching goal of the CPF as it improves public service delivery by building institutional capacity to respond promptly and effectively in emergencies. More than this, two other filters for financial operations proposed in the new CPF will be met – the operation is (i) *contributing to regional and global public goods* by integrating climate change considerations into sector priorities and (ii) *benefiting the most poor and vulnerable, including Roma*, as they would be the most affected by such disasters.

27. This project will focus on strongly on developing institutional capacity for disaster risk reduction in GIES, DES and MOIA and through the delivery of visible actions will provide a model for other government institutions in Romania who also need to reduce climate and disaster risk in their own sectors. Moreover, within GIES, DES and MOIA the project will support the broader identification of risk to their facilities and mechanisms to reduce this risk. The project will also support government to better harness the substantial technical capacity in academic and private institutions for risk assessment and risk reduction in Romania. Moreover, by ensuring that emergency facilities are resilient, the project will improve government capacity to respond effectively to disasters.

28. **This proposed Investment Project Financing (IPF) project Disaster Risk Management in Romania complements and supports the DPL with Cat DDO (P166303 – €400 million)** that is currently under preparation. The four prior actions under the Cat DDO are focused on disaster and climate risk reduction, for example, Prior Action 3 seeks to improve the regulatory environment to accelerate seismic risk reduction, and Prior Action 4 focuses on the use of risk information to more systematically reduce disaster and climate risks. Moreover, the inter-ministerial and multi-stakeholder National Platform for Disaster Risk Reduction, which is the focus of Prior Action 1, will ensure that the achievements and lessons learned under this investment project can be widely disseminated. All together the Cat DDO would help enhance enabling policy environment for the timely and smooth implementation of risk reduction investments including this IPF.

D. Series of Projects Approach (SoP)

29. **Several hazard risk mitigation projects and risk assessment in urban areas have struggled to produce desired outcomes over the last decade.** Two projects are relevant here: The first is the Hazard Risk Mitigation and Emergency Preparedness Project (HRMEP) (P075163) implemented between 2004 and 2012 as a multi-hazard and multi-sector investment operation. The project aimed to reduce disaster risks due to earthquakes, floods, landslides, and mining accidents in the Tisza basin for assets belonging to several ministries and public agencies. The second is an assessment of residential buildings in Romania carried out by MoRDPA to identify the riskiest apartment buildings. Neither the World Bank–funded investment operation nor the government-led program have fully achieved the desired outcomes. They were impeded by the scale of the risks faced, the challenges stemming from an inadequate policy and

regulation framework, and the challenge of working across many sectors and with many implementing agencies. Based on this experience, the proposed Series of Projects (SoP)[24] aims to start with a single-sector, single-agency approach that demonstrates tangible results as early as possible and builds momentum and demand for risk reduction in other sectors in Romania.

30. **The proposed project is the first one in the series and starts with the one of the most urgent needs for a well-functioning DRM system: disaster-resilient emergency response facilities that meet modern standards**. The DES and GIES have already been using EU resources very efficiently to improve Romania's emergency response capacity with modern rescue and response equipment and vehicles. The proposed first project will support improving resilience in emergency response infrastructure, primarily in fire, rescue and emergency coordination buildings.

31. **The proposed project is envisioned as the first of a series of investment operations to support long-term physical resilience to disaster and climate risks in Romania**. After the first project starts to demonstrate results, and as new risk assessments (building on RO-RISK) and facility/building data becomes available, additional projects could be developed to undertake physical risk reduction in other high priority emergency and disaster response sectors in Romania. This future planning will also be supported by progress achieved in the policy reforms targeted in the Romania Cat DDO (P166303).

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

32. **The Project Development Objective (PDO) is to enhance the resilience of critical disaster and emergency response infrastructure and to strengthen the Borrower's institutional capacities in disaster risk reduction and climate change adaptation.** This will be achieved by improving the safety and resilience of critical disaster and emergency response buildings at GIES level, developing robust data and information for national prioritization of disaster risk reduction and climate change adaptation, and improving the recipient's capacity to respond promptly and effectively in emergencies.

B. Project Beneficiaries

33. **In the aftermath of disaster, it is critical that emergency coordination centers and rescue facilities are undamaged and fully operational**, with staff uninjured, equipment undamaged, and energy, water, and communication systems functional. It is also critical that expected coverage of emergency operations—such as by fire and SMURD ambulance services and coordination centers—are not compromised by damage to one or more buildings.

34. **Emergency coordination centers under the DES and GIES have the responsibility to mobilize and direct local and national government resources to areas with the most urgent needs.** Using the National Management Information System for Emergency Situations (NMISES) and the European

[24] SoP does not imply commitment from the World Bank or from the Government of Romania on any future projects. It provides a framework for the design of future projects and any follow up projects will have separate loan agreements.

emergency number 112—the only emergency number in Romania—the DES also coordinates international support through the EU Civil Protection Mechanism,[25] alongside resources from the private sector, volunteers, and nongovernmental organizations.

35. **Fire and SMURD ambulance services represent a critical part of the government's emergency and disaster response system.** These buildings need to be modernized and strengthened to ensure that they are fully operational in any disaster and that staff can mount the most effective and timely response possible in their area of coverage and responsibility.

36. **This proposed project aims to strengthen, modernize, and make energy-efficient those emergency coordination centers and fire and SMURD ambulance services with the highest exposure to earthquakes and highest level of criticality.** The most direct beneficiaries will be the 1,700 users of the approximately 35 identified buildings (rescue personnel, emergency and disaster management staff, volunteers, and administrative staff). By ensuring that emergency, fire, and rescue services are fully operational and can respond to community needs within their area of responsibility, the project is expected to reach more than 5 million beneficiaries in the community.

37. The tentative list of high priority facilities was provided by the GIES which includes 35 buildings. As part of project preparation, the team visited facilities and identified needs for further information and data. However, the exact costing and the number of retrofitted vs reconstructed buildings may only be determined after all technical surveys are completed. To manage this risk, the project follows a framework approach and includes conservative targets. During implementation the actual costs of works contracts will be followed very closely and the cost estimations and targets will be updated as needed.

C. PDO-Level Results Indicators

38. Achievement of the PDO will be monitored and evaluated by several key indicators, including but not limited to, the following:

(a) PDO-level indicators (organized by outcomes):

Enhance the resilience of critical disaster and emergency response facilities

- Number of GIES disaster and emergency response buildings that are upgraded to be resilient
- Number of rescue personnel, emergency and disaster management staff, volunteers and administrative staff based at disaster-resilient buildings
- Number of project beneficiaries in areas covered by resilient emergency and disaster response facilities

Strengthen institutional capacities in investment planning for disaster risk reduction

- Enhanced Ro-Risk assessment supports enhanced risk reduction planning in other ministries across government
- MOIA has strengthened institutional capacity for risk reduction investment planning

(b) Intermediate Result Indicators by Components:

Component 1: Improving resilience of Disaster and Emergency Response Facilities

[25] See European Commission, "European Civil Protection Mechanism," February 15, 2018, http://ec.europa.eu/echo/what/civil-protection/mechanism_en.

- Number of technical designs completed
- Number of newly constructed GIES emergency and response buildings with resilient structures and systems
- Number of GIES emergency and response buildings retrofitted to improve structural resilience
- Number of communities reached out to via informative meetings and trainings
- Number of direct project beneficiaries
- Number of direct project beneficiaries (female)

Component 2: Enhancing Institutional Capacity for Risk Reduction Investment Planning

- Number of reports on the impacts of disasters and climate change in Romania based on Ro-Risk
- Number of Public Awareness campaigns

Component 3: Project Management

- Institutional capacity in engineering, procurement and contract management is in place
- Percentage of grievances responded to in the stipulated time

III. PROJECT DESCRIPTION

A. Project Components

39. The project will have three key components: (a) Improving Seismic Resilience of Disaster and Emergency Response Infrastructure, (b) Enhancing Institutional Capacity for Risk Reduction Investment Planning, and (c) Project Management. A brief description of the components is provided below, and more details can be found in Annex 1.

40. By building up-to-standard and safer emergency and response buildings of GIES, the project be an example of good practice on how to avoid the creation of new natural hazard risks and will serve the purpose of long-term risk reduction. Retrofitted and reconstructed disaster resilient and furnished modern facilities in GIES will also contribute to a more efficient and effective disaster and emergency response system. In addition to enhancing buildings' resilience, retrofitting/reconstruction works will also increase energy efficiency measures and would also introduce functional upgrades, which will in turn reduce gas, electricity, and water consumption, thereby also reducing the carbon footprint of the buildings subject to intervention.

41. Detailed design and rollout of key interventions will be informed by the following cross-cutting areas:

a. **Climate change**. In addition to screening the project for climate and disaster risks, civil works to improve structural performance in the scope of the project will be complemented by energy efficiency and climate change adaptation investments. The economic analysis section in Annex 4 provides a more detailed overview of specific co-benefits offered by investments in energy efficiency and climate change mitigation.

b. **Gender**. Designs to improve buildings will consider gender-sensitive design and safe bathroom, dormitory and sanitary facilities. This is important because many of the emergency response buildings were constructed before women participated in emergency and disaster response, and therefore the buildings do not have dedicated facilities for women. The gender profile of the GIES has changed to include more women in recent years, and most of the volunteers trained by GIES are now women. Designs for upgrade and new construction will carefully consider this changing demographic. The Project aims to collect gender-disaggregated beneficiary data, as during implementation gender-specific interventions may arise, depending on the needs.

c. **Universal Access and Disability.** Given the age of many buildings, it is unlikely that they were constructed with considerations of universal access and disability. All upgrades will therefore ensure that buildings are compliant with EU and Romanian regulations on universal access.

Component 1: Improving Seismic Resilience of Disaster and Emergency Response Infrastructure (€43.5 million) (US$ 52.62 million)

42. The main objective of this component is to improve the seismic safety and disaster resilience of critical disaster and emergency response buildings through investments in building infrastructure, structural strengthening, and modernization. This objective is especially important given that all buildings were constructed before 1990, that is before the modern seismic and building codes were established. Improvements will ensure that these critical buildings are fully operational before, during, and after of all types – earthquakes, floods, storms, extreme weather, and so forth – by considering the resilience of critical systems such as energy, water, and communications. Buildings will also receive energy efficiency improvements, that align with EU and Romanian regulations and that will contribute to operational savings and Romania's NDC commitments. Finally, all building renovations will achieve universal access and ensure equal access for men and women by the addition of gender-appropriate facilities.

43. About 35 buildings have been identified by DES and GIES as both paramount in the emergency and disaster response and preparedness system and at high risk of partial or complete collapse during an earthquake. These buildings include response headquarters, fire and SMURD ambulance services and command control centers; the inability of one or more of these buildings to be fully operational in an earthquake, storm, or flood event would create a significant gap in government response capacity. This subset of buildings represents a small share of the overall number of public buildings in Romania at risk from collapse or serious damage. However, this project aims to develop the systems, frameworks, and data for an eventual larger-scale risk reduction program. It will also showcase the benefit of this approach for short-term gain, such as amenity and energy efficiency improvements, as well as for long-term risk reduction and climate adaptation. It will thus provide a very visible sign of the government commitment to, and progress in, risk reduction. This is particularly important given the limited progress in Romania in risk reduction in recent decades.

44. The structural retrofitting, functional upgrading, and energy efficiency investments would include financing of (a) preparation, review and analysis of the Technical Surveys, Energy Efficiency Audits, Feasibility Studies and Technical Designs, (b) civil works for retrofitting or reconstruction of priority facilities, including improvement of their functionalities according to the relevant standard in place; and (c) supervision of construction works. This component will also finance public awareness in communities

where facilities are being retrofitted or reconstructed.

Component 2: Enhancing Institutional Capacity for Risk Reduction Investment Planning (€4.15 million) (US$ 5.02 million)

45. The objective of this component is to enhance institutional capacity to accelerate risk reduction through improved understanding of disaster and climate risks in Romania, with a focus on developing risk reduction programs and investment strategies to guide future risk reduction investments. Three key activities are targeted under this component:

a. Enhance Ro-Risk for risk reduction planning: The national risk assessment (Ro-Risk) will be updated through the collection and use of higher resolution data of hazard and exposure, improved vulnerability modeling and more robust data of the financial and economic impacts of disasters. This new data and information will be shared with other ministries through the National Planform for Disaster Risk Reduction and online Ro-Risk platform to support and enable MoIA and other ministries to develop risk reduction programs.
b. Risk reduction investment plan for emergency and disaster response facilities: Using Ro-Risk, and through the collection of facility level data of facilities under GIES, this activity will develop a package of evidence-based priority investments to enhance the resilience of emergency and disaster response facilities. It will also enhance the capacity of DES and GIES to design risk reduction programs.
c. Public Awareness: There is an urgency to reduce disaster and climate risks in Romania and this requires significant public awareness and ownership. Moreover, citizens can take substantial action to reduce risk where they reside, work and otherwise spend time. This activity will include national communication campaigns and workshops.

46. The component will support the above-mentioned activities, that are of critical importance for emergency response and disaster risk management, which belong to or are under the mandate of Department of Emergency Situations.

Component 3: Project Management (€2.35 million) (US$ 2.84 million)

47. The component will support all costs related to project implementation, such as staff salaries (for non-civil servants), external specialists and consultants for the DES/GIES project units for technical issues, procurement, prioritization of sub-projects, management of social and environmental safeguard issues, financial management (FM), monitoring and evaluation (M&E), project reporting, and so on. The project management component will also support incremental operational expenses of the project coordination and implementation units, as well as goods, consulting services, non-consulting service, training, audit.

48. This component will focus on strengthening MoIA/DES/GIES capacity in operations management and staff capacity for the entire program. The component will invest in the operational expenses and staff capacity-building costs that are needed for timely and efficient implementation of the project. The project will be implemented by the GIES. This component will help strengthen the DES/GIES capacity by hiring experts in procurement, FM, disbursement, M&E, and environmental and social safeguards.

B. Project Cost and Financing

49. **The total project cost is €50 million (US$60.48 million) and will be financed through an IPF loan.** The implementation period for this project is six years. Indicative breakdown of costs per component is provided in table 1.

50. **Counterpart Funding**. The Government will contribute to the project through government staff seconded to the Project Coordination Unit (PCU) and the Project Implementation Unit (PIU) in functions including but not limited to the following: Project Coordinator, Project Manager, Assistant Manager, Financial Management, Procurement Specialist, Environmental and Social Safeguards, Technical Experts, and M&E Expert. The amount of staff time estimated over the implementation period is a minimum of €300,000.

51. Separate Loan Agreements will be prepared to cover each IPF, if any, under financing terms and conditions applicable at the time of approval of each subsequent project.

Table 1: Summary of Program Components and Financing (EUR)

Project Components	Project Cost	IBRD or IDA Financing	Counterpart Funding (In -kind)
Component 1: Improving Seismic Resilience of Disaster and Emergency Response Infrastructure	43.5	43.5	
Component 2: Enhancing Institutional Capacity for Risk Reduction investment planning	4.15	4.15	
Component 3: Project Management	2.35	2.35	0.3
Total Costs	50.0	50.0	
Total Project Costs	50.0	50.0	
Front End Fees	*Will be paid from Government Budget*		
Total Financing Required	50.0		

52. As the Project aims to demonstrate results in risk reduction via single-sector, single-agency approach; the total numbers building to be included in the first of the SoP is relatively small compared to the needs and similar other investment operations. This is set as a main design principle. However, this brings certain level of risk in managing the project budget. Even small fluctuations in exchange rates or market prices can distort the original cost estimates. Therefore, the actual costs would be very closely

monitored for reconstruction and retrofitting and the contract packages materialize and adjustments would be made as necessary.

C. Lessons Learned and Reflected in the Project Design

53. **The proposed program builds on the World Bank's prior experience implementing DRM investments in Romania.** Approved in 2004, the US$144 million HRMEP (P075163) sought to reduce the environmental, social, and economic vulnerability to natural disasters and catastrophic accidental spills of mining pollutants through (a) strengthening the institutional and technical capacity for disaster management and emergency response by means of upgraded communication and information systems; (b) implementing specific risk reduction investments for floods, landslides, and earthquakes; (c) improving the safety of selected water retention dams; and (d) improving on a pilot basis the management and safety of tailings dams and waste dump facilities. At closing in 2012, a total of 44 important public structures throughout Romania had been retrofitted and upgraded to norms and regulations of the time, institutional strengthening and capacity building had been undertaken, including a review of the building code, with a specific focus on the applicable earthquake design requirements; two pilot programs that made use of innovative and cost-effective design methods for seismic retrofitting had been implemented; an energy sector risk assessment study on the vulnerability of the gas, electricity, and oil lifeline facilities had been prepared; and a handbook for professional training of Romanian structural specialists had been handed over to the MoRDPA.

54. **Based on the lessons learned from the experience of HRMEP, the proposed program will be driven by five key principles agreed with the Government:** (a) strong project ownership and committed champions for action at senior and technical levels; (b) immediate "no-regret" actions initiated in one sector while parallel communication of risks and sharing of best practices takes place in other high risk sectors; (c) maximum clarity around roles and responsibilities for seismic strengthening of assets; (d) design of intervention for maximum impact (with single interventions yielding multiple benefits, such as seismic safety and disaster resilience, energy efficiency and improved amenities); and (e) effective and continuous communication between MoIA, DES and GIES and project beneficiaries.

55. In addition, the proposed interventions under this program will represent the first wave of physical investments to reduce the disaster and climate risk to critical public buildings.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

56. The implementing agency for the project will be the MoIA. Overall project coordination will be undertaken by the DES through a PCU, and project implementation will be undertaken in a dedicated PIU located within the GIES (IGSU). An organization chart is provided in figure 3.

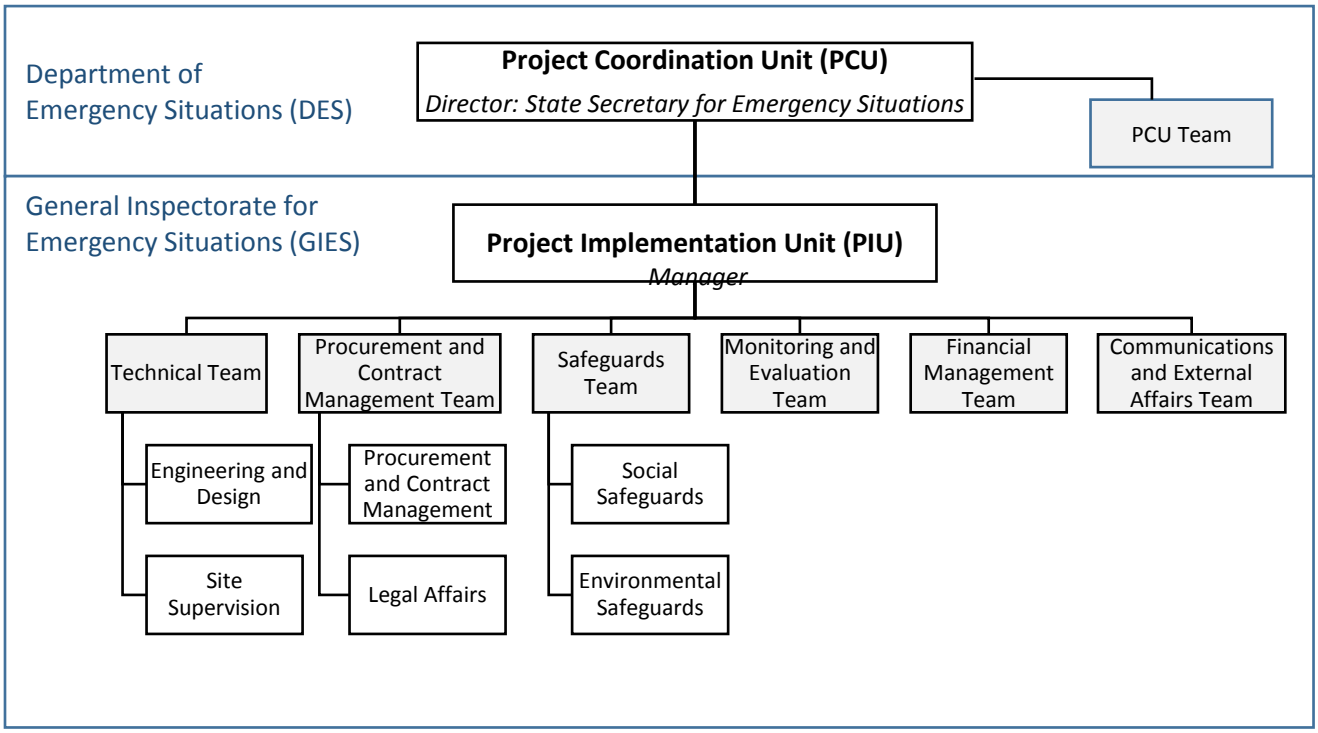
57. The DES coordinates the General Inspectorate for Emergency Situations (IGSU on the organisation chart), and the General Inspectorate of Aviation (with respect to medical missions); it also performs the operational coordination for ambulance services in counties and in Bucharest, for UPU/CPU, and for public

mountain rescue services. In this regard, it is well positioned to provide project coordination, especially in the context of a SoP where future projects may focus on other emergency services. Moreover, DES is responsible for overarching DRM public policy and government commitments to the Sendai Framework for Disaster Risk Reduction as well as disaster and emergency response. The DES also has a record of strong and stable leadership with a forward-looking vision and an impressive track record of organizational reform and project implementation

58. The GIES was formed in 2004 by merging the Civil Defense Command with the General Inspectorate of Military Firefighters, and is responsible for the National Operational Center and sub-national command and response centers. The GIES has been successful in the last several years in managing and implementing EU funds for urgently needed upgrades in rescue equipment. The emergency and disaster response buildings targeted for intervention under Component 1 are under the administration of the GIES.

59. The project will be primarily implemented and managed by civil servants, and will use the existing staff capacity. Component 3 will provide support additional capacity as may be needed for procurement, FM, environmental and social safeguards, and M&E. The MoIA will implement the project through a PCU to be established under the DES. This PCU will be responsible for overall coordination and oversight, as well as relations with and reporting to the World Bank on project activities and progress. In turn, all day-to-day implementation activities – including procurement, financial management, social and environmental safeguards, and M&E – will be performed by the PIU at the GIES, which is also under MoIA. The PCU at the DES and PIU at the GIES will establish adequate channels for reporting to one another on project implementation. The project organizational arrangements are shown in Figure 3.

Figure 3: Organizational Chart of the implementation arrangements



Results Monitoring and Evaluation

60. The PDO focuses on supporting Romania to build resilience into emergency and disaster response buildings. This is measured through the first and second PDO indicators. Long-term sustainability requires meaningful expansion and strengthening of the risk reduction programs in Romania (including quality learning environment) and linking that to sustainable financing through externally or internally funded investment plans. The intermediate outcome indicators related to M&E and capacity building will measure sustainability within the project.

61. The PIU will collect data for results indicators from the field through its M&E unit, and monitor the quality of data collection, and evaluate results (including through specialized consultants). Consequently, the PIU will review and verify the data and evaluate results before including these results in progress reports to be sent to the World Bank biannually. If deemed necessary by the ministry, the PIU will receive support from externally hired M&E specialists to ensure high-quality monitoring and reporting up to the standards of the World Bank.

62. Results framework and monitoring is presented in Section VII. A baseline is provided for July 1, 2018, and an end of the project target is provided for December 31, 2024. There are three intermediate targets for most indicators corresponding to July 1, 2020; July 1, 2022 and July 1, 2024.

C. Sustainability

63. In 2015, the Government of Romania committed to achieving the ambitious goals under the international Sendai Framework for Disaster Risk Reduction, including meeting indicators related to substantially reducing disaster mortality, reducing the numbers of people affected by disasters, reducing damage to critical infrastructure, and minimizing disruption to basic services by increasing their resilience. The progress made by the DES and GIES in the last year is testament to this commitment. Moreover, through the Department of Regional Development and Public Administration, the Government recently commissioned upgrades to the building codes related to the seismic resistance of existing buildings. These regulations will eventually guide improvements to public and private buildings in Romania.

64. This project will support the Government in establishing an efficient and effective system for the retrofit of existing public buildings, which, in the medium and long-term, could be expanded to other emergency and disaster response buildings, as well as to buildings in the education, health, and public administration sectors. This system will be able to support projects that use World Bank, other International Financial Institutions (IFI), or the EU funds, thereby improving long-term sustainability.

65. It is expected that the maintenance issues will be minimal in the short term. The maintenance and repair works of the subject buildings to be undertaken in the medium to long term, are expected will be under the responsibility of the GIES.

66. In addition to physical durability and prolonged lifespan of buildings, sustainability also relates to agreement among members converging opinions of the public and high-level decision makers about the need for retrofitting versus reconstruction. In a similar vein, temporary evacuation of buildings to be retrofitted or reconstructed and diversion of staff and equipment to interim facilities both need to be carefully managed to ensure the buy-in of communities. To this end, the communications aspect of the project will focus on properly communicating the structural and non-structural benefits of retrofitting, reconstruction, and awareness-raising.

67. The project will support energy efficiency improvements in buildings to be retrofitted or reconstructed. Increased energy efficiency will not only help local administrations and (eventually), the GIES reduce overall operations and maintenance costs, but will also support climate change adaptation and sustainability.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

68. **The overall risk is rated as Moderate.**

69. ***Political and Governance*** **risks are rated as Substantial.** In recent years there has been high political volatility and a politicized environment, which has created a challenge for ongoing policy reforms. However, the government has demonstrated a commitment to progress key reforms and institutional building for disaster risk management in recent years – including those specific to this operation. This operation and the Series of Projects approach, together with the Cat DDO operation (P166303), will support continued attention to the important issue of resilience and strong ownership amongst

stakeholders.

70. ***Institutional Capacity for Implementation and Sustainability*** **is proposed as Moderate.** Staff in the Department for Emergency Situations and General Inspectorate for Emergency Situations have experience on past EU projects and a recent track record of strong disbursement. However, they do not have experience working on World Bank projects or with World Bank procurement, safeguards and so forth. They also do not have experience in the retrofitting or reconstruction of buildings within GIES and will need to develop this engineering expertise through time. However, this capacity does exist within Romania and indeed there is very strong expertise in this regard. Therefore, the project will focus on ensuring this broader technical expertise can be harnessed through project implementation. Therefore, this is rated as Moderate and through implementation the World Bank team will provide necessary training and support to ensure implementation remains on track.

71. ***Macroeconomic*** **risks are rated as Moderate.** Romania has one of the highest economic growth rates in the EU, but fiscal policy has turned expansionary since 2016. A series of tax relaxation measures, coupled with increases in spending for public wages and pensions, has put pressure on the budget deficit. The budget deficit was maintained at under 3 percent of GDP both in 2016 and 2017, and the government has pledged to do the same in 2018, but a slowdown in economic growth and/or additional public spending increases would reduce the fiscal space available for capital expenditures. However, the project should not be affected by an eventual reduction in the public investment spending, given its priority for the government, overall size, and projected disbursement profile.

72. **The project has some limited potential negative social effects, which need to be recognized up front and managed closely**. These are reflected in the proposed **Moderate** rating for ***Environment and Social***. To ensure buy-in of communities, care and attention must be paid to the intensive civil work nature of the Project (i.e. temporary evacuation of buildings to be retrofitted or reconstructed and diversion of staff and resources to interim facilities). Negligence of such social impacts could jeopardize the program if not well managed. To this end, the project will include a proper communications and grievance redress mechanism to promptly and fully share information with communities and to respond to disputes that may arise during implementation. All these measures will help minimize the social and financial externalities that could be faced by site-specific stakeholders and neighboring populations.

73. ***Environmental risk*** **is currently estimated to be** ***Moderate*** **because of the scope and nature of civil works required to retrofit and reconstruct the buildings**. The potential environmental impacts of the proposed program will be limited to the impacts of simple construction works, which are easy to foresee and mitigate and are temporary – that is lasting only during the planned period for the project.

74. **Ratings for** ***Stakeholders*** **and** ***Technical Design of Project*****.** The project design is deliberately simple and efficient, focusing on a single agency and single sector. The Government has also recently established the National Platform for Disaster Risk Reduction which brings together stakeholders from government, academia, the private sector and non-government organizations which to create an efficient system for addressing ex-ante risk reduction and mainstreaming DRM principles across priority sectors. Government has also accelerated its engagement with volunteers and non-governmental organizations in recent months.

Systematic Operations Risk- Rating Tool (SORT)	
Risk Category	**Rating**
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project	Low
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Low
OVERALL	**Moderate**

VI. APPRAISAL SUMMARY

A. Economic and Financial (if applicable) Analysis

75. Preliminary calculations indicate that with €43.5 million of funding, around 35 emergency and disaster response buildings can be reconstructed or retrofitted over an estimated 5-year investment/implementation period[26]. This corresponds to more than 50,000 m^2 of floor space, providing protection to more than 1,700 building occupants (first responders, administration staff, volunteers etc.), and ensuring that more than 5 million residents have continued emergency response during an earthquake or other disaster. While current costs suggest that the financing available can cover 35 buildings, the results framework refers to 25 buildings to allow for fluctuations in construction costs, exchange rates, or other uncertainties.

76. The World Bank *Triple Dividend of Resilience Framework* (TDRF) identifies three types of benefits from risk reduction and disaster mitigation projects, consisting of (1) avoided losses; (2) unlocked development potential arising from stimulated innovation and bolstered economic activity in a context of reduced disaster-related background risk for investment; and (3) enhanced synergies of the social, environment and economic co-benefits of disaster risk management investments, even if a disaster does not take place for many years.[27]

77. **First Dividend of Resilience – Avoided Losses:** Calculations show that for the two scenario earthquake events assessed, the avoided direct damage to the emergency response buildings ranges from €12.4 million to €23.9 million. Additionally, avoided losses from saved equipment, tools, furniture,

[26] For the cost benefit analysis, the investment period refers to the period after project effectiveness and the works under Component 1 have been initiated.

[27] T. M. Tanner, R. Reid, E. Wilkinson, S. Rajput, S. Surminski, and J. E. Rentschler, "The Triple Dividend of Resilience: Realizing Development Goals through the Multiple Benefits of Disaster Risk Management," World Bank, Washington, DC, 2015

computers and other supplies housed in the emergency response buildings is estimated to range from at €2.2 million to €4.1 million. Additional avoided damages are realized as the fully functional fire services can provide fire suppression after an earthquake to buildings within their service area, resulting in an additional €10.8 million to €26 million in avoided direct damages from fire suppression. Thus, a total of avoided damage ranging between €25.4 million and €54 million is expected from this project.

78. **Lives Saved:** The buildings under the project host more than 1,700 occupants during daytime shifts and provide fire and rescue services and emergency and disaster coordination for more than 5 million residents. The project is expected to result in more than 1,200 lives saved due to earthquake resistant emergency response buildings and fully functional services that can undertake rescue in the surrounding areas in the event of a disaster. Based upon €559,488 per person as estimated value of a statistical life, the value of lives saved would be equal to €671 million (day time). Additionally, since the total project investment is €50 million, the average value to save a life is €41,000, which compares favorably with the assumed value of a statistical life of €559,488.

79. **Second Dividend of Resilience – Unlocking Development Potential:** Data and research are very rare in this connection. As a benchmark the Hallegatte framework has been applied.[28] This approach estimates the value of concurrent economic development being equivalent to 8 times the value of avoided asset losses at the lower end of the spectrum, and 15 times at the higher end. Since, emergency response facilities constitute only a small part of an overall earthquake hazard mitigation program; it is assumed that the economic development benefits associated with response building investments would be approximately equal to the value of the avoided assets losses at the lower end, and three times as high at the higher end. This logic allows the use a weighted factor of 2 to multiply the avoided asset losses (and related benefits), to yield between €44 and €94 million in benefits due to triggered economic development.

80. **Third Dividend of Resilience – Mitigation Co-Benefits**: Although data paucity is a problem in this category of benefits as well, energy efficiency improvements in existing public buildings are in the positive list of co-benefits related to mitigation of climate change and yield savings on lighting, water and heating investments. Under the project, more than 51,000 m^2 of emergency and disaster response facilities will be rebuilt or structurally strengthened and refurbished. If one-third of buildings are reconstructed to 2020 energy efficiency targets and two-thirds refurbished to a "moderate energy efficiency target" then energy consumption and associated cost and emissions will be more than halved. Assuming monthly energy costs of €1.2 per m^2, this equates to a total saving of more than €8 million in energy costs over a 20-year planning horizon.

81. **Summary:** At full development and over the 20-year planning horizon, the project yields an IRR of 14.6 percent, with B/C ratio of 1.73 for the first earthquake scenario considered[29], and an IRR of 9.1 percent, with B/C ratio of 1.30 for the second earthquake scenario evaluated[30]. These results represent

[28] Hallegatte, Stéphane. 2012. A Cost Effective Solution to Reduce Disaster Losses in Developing Countries: Hydro-Meteorological Services, Early Warning, and Evacuation. Policy Research Working Paper; No. 6058. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/9359 License: CC BY 3.0 IGO

[29] Annual exceedance probability of earthquake hazard at 39 percent in 50 years, and a corresponding earthquake with magnitude of approximately 7.5

[30] Annual exceedance probability of earthquake hazard at 10 percent in 50 years, and a corresponding earthquake with magnitude of approximately 7.9

an acceptable investment prospect. It is also noteworthy that the project's efficiency parameters in both earthquake scenarios are highly sensitive to the VSL estimate and the number of lives saved, which play a vital role in rendering the project feasible in economic terms.

Summary of CBA results

EQ Scenario	Benefit-Cost Ratio	NPV (€)	IRR (%)	Payback Period (Years)
1	1.73	27,169,574	14.6	11
2	1.30	11,016,795	9.1	15

B. Technical

82. **The MoIA, through the DES and GIES, has provided a tentative list of 35 buildings to be considered for financing in this project (Annex 5A).** At the current stage, the exact number of buildings and their retrofitting and/or rehabilitation needs under the project are yet to be identified. The World Bank team, in consultation with DES/GIES, recommends that a prioritization framework be applied to these 35 buildings for ranking according to a brief set of objective criteria, such as the building's level of seismic risk, and importance in the emergency management system.

83. **To speed up the retrofitting or reconstruction process within the project, the GIES will prepare the necessary technical documents for a first batch of five to six buildings, ranked high on the prioritization list.** This will be done before the project starts and will use Government funds. Technical documents for the other buildings will be prepared using World Bank financing once the project starts.

84. The overall process – from preparation of technical documentation to subsequent construction for each building – is as follows: (a) preparation of the technical surveys, energy efficiency audits, and feasibility studies; (b) review and approval of the feasibility studies by the client; (c) preparation of technical detailed design documents, including the site-specific Environmental and Social Management Plan (ESMP); (d) review and approval of the technical detail design by the client; (e) application for building construction permit; and (f) construction.

85. The following agreed prioritization framework is to be applied:

a. A data sheet has been developed by the World Bank team, which needs to be completed by the GIES for each building. The data sheet requests core building structural and functional information, which is relevant for the building prioritization process (the data sheet is provided in Annex 5B).
b. The prioritization approach proposed by the World Bank team, in consultation with DES and GIES, includes developing a weighted ranking system of the 35 buildings based on seismic risk and the building's strategic importance in the emergency management system (prioritization approach is provided in Annex 5D).

86. The World Bank team and MoIA have agreed that when defining each building's need for upgrading according to normative documents, the DES and GIES should also consider the building's future

functionality requirements, including full operational capacity in case of design earthquake,[31] as well as electrical, mechanical systems, gender aspects, environmental and social safeguards, universal access, and so on. It should also be noted that buildings found to be in flood-prone and landslide-prone areas (based on the information to be provided in the data sheets) will be excluded from the project.

87. **The MoIA, by way of the GIES, will initiate the development of necessary technical documents for the first batch of buildings to be launched – that is, those ranked the highest in the prioritization process – utilizing the government's own funds**. Before the technical documents can be considered acceptable and the tendering of the services can proceed, the terms of reference (ToR) for such technical services will need to be reviewed by the World Bank technical team for clearance. The World Bank team already recommends that the DES/GIES consider the following requirements in the scope of the technical services:

a. The fundamental requirements of seismic assessment for existing buildings and the fundamental requirements of seismic design for retrofitted buildings solutions must take into consideration ground motion with 20 percent probability of exceedance in 50 years (225-year mean return period) for the life safety requirement;
b. The retrofitted and/or rehabilitated buildings must be fully operational after the design earthquake. This goal can be achieved by using the seismic action with 225-year mean return period for life safety requirement, amplified by the importance and exposure factor of 1.4, as requested by the Romanian seismic design code in force.

88. **If technical surveys for a select number of buildings have been already completed by the GIES, they will need to be shared with the World Bank technical team for review and potential recommendations for updates**. Once technical surveys are completed, the subsequent feasibility studies must include a minimum of two solutions based on the technical survey recommendations, energy efficiency audit, and level of upgrading of the building. It is important that energy efficiency improvements are clearly demonstrated for each rehabilitated building. The proposed feasibility solutions – including the cost variations, and decisions on whether to retrofitting and upgrade the existing building or demolish it and construction of a new one – will be subject to review of the World Bank technical team. The final decision on the solution to be promoted under the project will be made by the MoIA, through the /GIES; the solution will be subject to the World Bank's review and No-Objection to be financed under the project.

C. Financial Management

89. **The FM assessment of GIES – the entity responsible for the fiduciary function of the project – has been carried out for staffing, budgeting, accounting, internal controls, flow of funds, financial reporting, and external audit. The assessment concluded that the FM arrangements are acceptable.** The findings of the assessment are detailed in Annex 2. The FM procedures applicable to the project, including internal control, will be detailed in the Project Operations Manual (POM). The FM risk is assessed as Moderate.

90. **The project will rely extensively on the existing statutory budgetary accounting and internal**

[31] The amplitudes of the ground motion defined by the seismic code used to check the compliance of the seismic response with the criteria assigned to ultimate limit state.

controls policies, procedures and systems. GIES finance and accounting function is well-represented and will be trained on the Bank's fiduciary procedures and supplemented as needed during project implementation. The pre-financing mechanism will be used for the project as applicable to all Bank-funded investment operations in Romania, whereby the eligible expenditures are pre-financed from the State Budget and then claimed by the Ministry of Public Finance (MoPF) for reimbursement from the loan. The funds will be transferred to the MoPF account opened with the National Bank of Romania and will be used according to the Romanian legislation on public debt. Adequacy and timeliness of the budgetary allocations are critical success factors for project implementation. Semi-annual cash-based financial reports will be required to be prepared in the pre-agreed formats and submitted to the Bank within forty-five days after the end of each reporting period. The project financial statements will be subject to annual audit by independent auditors acceptable to the Bank, in accordance with agreed terms of reference. The annual audit reports will be due to submission to the Bank within six months after the end of audited period.

D. Procurement

91. **Applicable Procurement Arrangements:** Procurement under the project will be carried out in accordance with the World Bank Procurement Regulations for Investment Project Financing (IPF) Borrowers – Procurement in IPF of Goods, Works, Non-Consulting and Consulting Services, issued in July 2016, revised in November 2017 (hereinafter referred to as "Procurement Regulations") and with the latest Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits.

92. **Capacity Assessment:** An assessment of the capacity of GIES to implement procurement was carried out by the Bank team in February 2018 and recorded in the Procurement Risk Assessment and Management System. Given the risks identified and the results of the assessment, procurement risk is considered Substantial. The findings of the assessment are detailed in Annex 2.

93. **Project Procurement Strategy for Development (PPSD):** Based on the project requirements, operational context, economic aspects, technical solutions and market analysis, a PPSD has been developed for the project by GIES with the support from the Bank team. The Bank reviewed the document and provided comments. A summary of the PPSD is provided in Annex 2.

E. Social (including Safeguards)

94. **The project is aimed at supporting reconstruction, retrofitting and rehabilitation of high priority GIES public buildings used for emergency response purposes**. A total of 35 buildings from 22 counties are considered for investments in building infrastructure and structural strengthening under the project. The social screening exercise carried out for buildings selected for the project support reveal that the proposed constructions/rehabilitation of the buildings are confined to the lands belong to respective state agencies and no additional land will be required. No public residential buildings selected for reconstruction under the project and hence, there will be no resettlement of individuals or households (temporary or permanent) anticipated. Also, there are no any interventions planned in protected areas or locations that hinder livelihood activities that cause economic displacement or other impact associated with situations of restricted access to natural resources for local communities. Based on initial social

screening and reviews, the potential minor impacts such as construction induced temporary access restrictions, road diversions, and road safety issues could be managed under the provisions of OP 4.01 (Environmental Assessment) policy and therefore OP 4.12 (involuntary Resettlement) policy is not triggered for the project.

95. **Accordance to Bank policy (OP 4.01), an Environment and Social Management Framework (ESMF) has been developed to mitigate potential environment and social risks associated with the project**. The ESMF elaborates the procedures including an establishment of site specific Grievance Redresses Mechanism (GRM) and Social Management Plans to mitigate potential risks at site level. ESMF is developed based on the findings of environment and social screening process and site level public consultations with the workers/ neighboring communities of the buildings selected for the project support.

96. **The Program was also presented for discussion and consultations with the public and civil society on 16 April 2018 and with the Roma Sounding Board on 4 April 2018**. Issues were raised on how to improve awareness and action on disaster preparedness and early warnings, especially for vulnerable populations. Moreover, concerns were raised on the lack of visible progress to reduce the number of "Red Dot" or Class 1 seismic risk structures in Bucharest, and overall how to improve resilience to natural hazards across the country. Based on the preliminary information and consultations, a Roma filter has been prepared under the project (Annex 6 - Roma filter). This Program was seen as a positive step forward to raise and sustain visibility on DRM in Romania.

97. **Overall the proposed project is expected to generate significant positive social impacts at the level of each targeted site/community**. The rehabilitation and/or renewal of buildings that are of major importance for the communities who are prone to risk their lives and livelihoods during disasters as well to benefit the persons working in these facilities with better protected workplace and safety equipment. The proposed improvements also aimed at giving due consideration in rebuilding the facilities in a way that truly translates into full inclusion and participation of persons with disabilities.

98. **The capacity to manage social and environmental safeguards among the agencies responsible for disaster risk management is low**. Hence, as part the project management assistance, a series of capacity building training relevant to social and environment safeguards is planned and will be executed systematically during eth course of the project.

99. **Citizen Engagement (CE).** Strengthening the Government ability to scale up civil society engagement, community resilience and gender aspects of DRM is critical. The project aims at developing a citizen engagement strategy and plan which emphasizes that all types of stakeholders including poor and vulnerable communities, support civil society organizations and other agencies are consulted and informed on the areas that the project could contribute to reduce disaster related vulnerabilities. The citizen engagement strategy of the project is aimed at (a) fostering a participatory and inclusive process during the planning and implementation; (b) outlining a stakeholder engagement / Civil Society Partnership framework based on feedback from the consultation process conducted during the project preparation stage; (c) developing a set of CE indicators that captures the expectations stakeholders and Banks' corporate requirements. In taking this Strategy forward, GIES will undertake further consultations to develop a concrete workplan and indicators to monitor progress towards the strategy objectives.

100. **Gender.** Furthermore, GIES will integrate gender and disability dimensions in planning project interventions and promote women's empowerment and socially inclusive approaches to resilience building. The experience of preparedness and disaster response program show that women are a critical social category and they could significantly contribute in planning and broader community resilience capacity. Thus, project will promote gender dimensions into the project and actions such as gender disaggregated impact assessments, consultations and appropriate designing of new buildings and facilities to cater their requirements and safety aspects.

F. Environment (including Safeguards)

101. **The project will not finance any activities with significant or irreversible environmental impacts and triggers OP 4.01 with classification as Environmental Category "B".** The main project interventions refer to the rehabilitation and limited new construction of GIES buildings all over the country. While the environmental and social impacts of the project will be largely positive by reducing the risk of damage and collapse of the selected buildings as a result of earthquakes, some adverse impacts may be generated from construction activities, and these may include: increased pollution due to construction waste; generation of dust, noise, and vibration due to the movement of construction vehicles and machinery; risks due to improper disposal of construction waste, or minor operational or accidental spills of fuel and lubricants from the construction machinery; improper reinstatement of construction sites upon completion of works. All these potential environmental impacts are readily identifiable, small in scale, and minimal in impact and can be effectively prevented, minimized, or mitigated by including into the work contracts specific measures to be taken by contractors under close supervision of compliance by GIES-PIU.

102. **Effective measures have been put in place under the project to address and closely monitor the safeguards issues**. An Environmental and Social Management Framework (ESMF) for the project consistent with Environmental Assessment (EA) requirements for both Romania and the World Bank was prepared by GIES and found satisfactory by the World Bank. The ESMF has been discussed at the public consultations meeting, posted on the MoIA's website, distributed to the GIES local units involved in the project and sent to the Bank's website. The ESMF will be incorporated into the POM. Site-specific Environmental and Social Management Plans (ESMPs), based on the ESMF, will be prepared for each site where construction works will be implemented. Issues to be addressed through this ESMF and ESMPs instruments include proper waste management and disposal of construction debris (including asbestos), proper waste water treatment; heating and fuel system assembly, dust and noise control, sensitivity of designs to cultural settings, and cultural heritage/chance finds procedures. In practice, these issues will be addressed through a series of local permits detailed in the environmental framework review, through contractor site supervisor oversight, through the local municipality requirements, and through the unit (GIES-PIU) in the MoIA responsible for the buildings rehabilitation.

103. **The project will not finance Category-A activities or activities that target natural habitats or protected sites, and will prohibit those activities that can cause a significant loss or degradation of any significant natural habitat.** The environmental screening process will check for the presence of physical cultural resources. In addition, cultural heritage/chance find procedures will be included in all works contracts.

104. **During project implementation, GIES-PIU will have overall supervision responsibility for ensuring that the measures indicated in the ESMF/ESMPs are being properly performed.** GIES-PIU in collaboration with the local branches of the selected buildings and the Romanian local Environmental Protection Agencies will perform the environmental monitoring during both, construction and operation phases, as specified in the monitoring plan of the ESMPs. Appropriate training on Bank safeguards will be provided to local officials, contractors and community representatives.

G. Other Safeguard Policies (if applicable)

105. The project also triggers OP/BP 4.11, Physical Cultural Resources to include procedures and responsibilities for managing works in culturally and historically significant areas and accidentally discovered or chance find cultural artifacts to ensure that Cultural Heritage assets will not be adversely affected by World Bank-financed projects. The ESMF includes requirements for the borrower and contractors, as will be reflected in further the site-specific ESMPs and the POM. These refer to specific measures necessary to be taken for complying with Romanian laws and procedures related to the physical cultural resources, and with the World Bank's requirements for managing impacts on cultural property.

106. Romania has a well-developed cultural heritage protection system with responsibility for monitoring and enforcement vested in the Ministry of Culture and National Patrimony (MoC). Law (No. 422 of 2001) governs the protection of historical monuments, setting forth departmental roles and responsibilities. The Ministry/Regional Directorates of Historic Monuments must approve all technical documentation for buildings that are officially listed or located in cultural protected areas, and can call specialists as members of a Consultative Board, as needed. Designers, contractors and site supervision engineers working on an investment project that involves an historic monument must be pre-certified and listed by the MoC. 125 designers are listed in Romania for this purpose.

107. If any cultural assets are found during construction (excavation) works ("chance finds"), the measures outlined in the Law 422/2001 will be undertaken, including the setting up of a protection zone in compliance with the Law 422/2001, reporting to the local offices of MoC, and obtaining a special permit for the execution of works in connection with the found cultural assets.

H. World Bank Grievance Redress

108. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service*.
For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

Project Development Objective(s)

The Project Development Objective is to enhance the resilience of critical disaster and emergency response facilities and to strengthen the institutional capacities in investment planning for disaster risk reduction and climate change adaptation

PDO Indicators by Objectives / Outcomes	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets			End Target
					1	2	3	
Enhance the resilience of critical disaster and emergency response facilities								
Number of disaster and emergency response facilities that are upgraded to be resilient			Number	0.00	0.00	5.00	13.00	25.00
Number of rescue personnel, emergency and disaster management staff, volunteers and administrative staff with access to disaster resilient buildings			Number	0.00	0.00	600.00	900.00	1,000.00
Number of project beneficiaries in areas covered by resilient emergency and disaster response facilities			Number (Thousand)	0.00	0.00	500.00	2,000.00	3,000.00
Strengthen institutional capacities in investment planning for disaster risk reduction								
Enhanced Ro-Risk assessment supports enhanced risk reduction planning in other ministries			Text	Ro-Risk Assessment (2018 version)				Ro-Risk data is being used by at least two ministries for disaster risk management decision making.
MOIA, through DES and GIES, has strengthened institutional			Text	GIES has started a process to				GIES is systematically

PDO Indicators by Objectives / Outcomes	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets			End Target
					1	2	3	
capacity for risk reduction investment planning				collect data on vulnerable buildings and has a prioritization method for assessing which buildings should be strengthened for greater resilience.				collecting data on emergency and disaster response assets and their potential vulnerability to disasters, and has developed a plan for future resilience actions.

Intermediate Results Indicators by Components	DLI	CRI	Unit of Measure	Baseline	Intermediate Targets			End Target
					1	2	3	
C1.Improving resilience of Disaster and Emergency Response Facilities								
Number of technical designs completed			Number	0.00	12.00	35.00	35.00	35.00
Number of newly constructed emergency and response buildings with resilient structures and systems			Number	0.00	0.00	3.00	10.00	10.00
Number of emergency and response buildings retrofitted to improve structural resilience			Number	0.00	0.00	5.00	15.00	15.00
Number of communities reached out to via informative meetings and trainings			Number	0.00	5.00	15.00	20.00	20.00
Number of direct project beneficiaries			Number	0.00	0.00	300.00	600.00	1,000.00
Female Project Beneficiaries			Number	0.00	0.00	100.0	180.0	200.00

						0	0	
C2. Enhancing Institutional Capacity for Risk Reduction Investment Planning								
Number of reports on the impacts of disasters and climate change in Romania			Number	0.00	0.00	1.00	2.00	3.00
Public Awareness Campaigns			Number	0.00	3.00	7.00	9.00	10.00
C3. Project Management								
Institutional capacity in engineering, procurement and contract management is in place			Yes/No	N	Y	Y	Y	Y
Percentage of grievances responded to in the stipulated time			Percentage	0.00	100.00	100.00	100.00	100.00

Monitoring & Evaluation Plan: PDO Indicators	
Indicator Name	Number of disaster and emergency response facilities that are upgraded to be resilient
Definition/Description	Buildings are upgraded to [structural and service] standards for full operation in all types of disaster events, through stronger structures and more resilient communications, electricity, water and mechanical systems.
Frequency	Progress towards this indicator will be monitored annually.
Data Source	Progress reports that articulate the status of works on target buildings.
Methodology for Data Collection	Procurement actions, disbursement data, photos of works, site visits to buildings under construction and where construction is completed, supervision reports etc.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator. The World Bank team will undertake site visits during Implementation Support Missions during implementation.

Indicator Name	Number of rescue personnel, emergency and disaster management staff, volunteers and administrative staff with access to disaster resilient buildings
Definition/Description	Personnel in critical disaster and emergency response facilities occupy structurally strengthened buildings with resilient access to water, communication, electrical systems in the event of any type of disaster (earthquake, storm, flood, drought, landslide, extreme heat/cold etc).
Frequency	Progress towards this indicator will be monitored annually.
Data Source	Baseline was determined through data collection at each facility during project preparation. Progress reports that articulate the status of works on target buildings will enable the calculation of the number of people now occupying safe and resilient facilities.
Methodology for Data Collection	Procurement actions, disbursement data, photos of works, site visits to buildings under construction and where construction is completed, supervision reports etc. Data sheets on the number of people (staff, rescue personnel, volunteers, etcs) using the buildings, pre- and post- building improvements.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator. The World Bank team will undertake site visits during Implementation Support Missions during implementation.

Indicator Name	Number of project beneficiaries in areas covered by resilient emergency and disaster response facilities
Definition/Description	This refers to the number of people who benefit from fully functional and uninterrupted emergency and response facility that could continue to provide rescue, coordination, fire fighting services in the aftermath of earthquake, storm, flood, landslide, extreme heat and cold and so forth. The numbers refer to the communities usually serviced by the facility, and does not include the expanded service area that might be required in the event of a large disaster.
Frequency	Progress towards this indicator will be monitored annually.
Data Source	Baseline is determined by people within the service area of a resilient fire and rescue facility or command center, using readily available data on population. Procurement actions, disbursement data, photos of works, site visits to buildings under construction and where construction is completed, supervision reports etc, will be used to establish when a new resilient facility is established.
Methodology for Data Collection	Review of progress reports.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator. The World Bank team will undertake site visits during Implementation Support Missions during implementation.

Indicator Name	Enhanced Ro-Risk assessment supports enhanced risk reduction planning in other ministries
Definition/Description	The Romanian Risk Assessment (Ro-Risk) provides fundamental data and information on the risks from natural hazards and climate change to different sectors and locations in Romania. Increasing the resolution of the data in Ro-Risk and its accuracy will support other ministries to plan risk reduction plans for their sector.
Frequency	Progress towards this indicator will be monitored annually.
Data Source	Terms of Reference for new analysis, meeting minutes of expert working groups, meeting minutes of National Platform for Disaster Risk Reduction, new analysis, new Ro-Risk report, and new data and information uploaded to Ro-Risk platform.
Methodology for Data Collection	Reports and information provided by GIES.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator.

Indicator Name	MOIA, through DES and GIES, has strengthened institutional capacity for risk reduction investment planning
Definition/Description	GIES has institutional capacity in place to collect data on existing emergency and disaster response assets, assess their risk of damage from disaster, and prioritize future actions to reduce these risks through forward looking investment plans.
Frequency	Progress towards this indicator will be monitored annually.
Data Source	Data sheets and reports
Methodology for Data Collection	Reports from GIES.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports.

Monitoring & Evaluation Plan: Intermediate Results Indicators	
Indicator Name	Number of technical designs completed
Definition/Description	This indicator follows the number of retrofitting or reconstruction designs completed for the disaster and emergency response facilities.
Frequency	This indicator will be monitored bi-annually.
Data Source	Technical surveys, request for proposals for selection of consultants to prepare the designs and actual technical designs.
Methodology for Data Collection	Collation of data mentioned above.
Responsibility for Data Collection	GIES will be responsible for data collection. GIES will communicate this through bi-annual progress reports and annual reports.

Indicator Name	Number of newly constructed emergency and response buildings with resilient structures and systems
Definition/Description	Where technical survey's determine that its technically and financially unfeasible to retrofit emergency response facilities, new buildings will be constructed on the existing facility site.
Frequency	Progress towards this indicator will be monitored bi-annually.
Data Source	Technical surveys, site visit reports, procurement actions, disbursement data, photos of works, site visit reports, supervision reports, progress reports,and where construction is completed documentation of the final building etc.
Methodology for Data Collection	Collation of data and information from reports, procurement actions etc.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator. The World Bank team will undertake site visits during Implementation Support Missions during implementation.

Indicator Name	Number of emergency and response buildings retrofitted to improve structural resilience
Definition/Description	These are buildings for which retrofitting is technically and financially feasible and where it makes the most sense for the government, direct beneficiaries and serviced community.
Frequency	Progress towards this indicator will be monitored annually.
Data Source	Technical surveys, site visit reports, procurement actions, disbursement data, photos of works, site visit reports, supervision reports, progress reports, and where construction is completed documentation of the final building etc.
Methodology for Data Collection	Collation of the data mentioned above
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator. The World Bank team will undertake site visits during Implementation Support Missions during implementation

Indicator Name	Number of communities reached out to via informative meetings and trainings
Definition/Description	Communities who are in the vicinity of, or serviced by, emergency response facilities that are under this project will receive information on disasters and the Project interventions through meetings, communication campaigns and training events.
Frequency	Progress towards this indicator will be monitored bi-annually.
Data Source	Communication materials, notice of meetings, meeting attendee lists, meeting minutes, progress reports
Methodology for Data Collection	Collection of information by GIES
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator.

Indicator Name	Number of direct project beneficiaries
Definition/Description	Direct project beneficiaries include professional and volunteer rescue personnel, administrative staff, emergency and disaster coordinators and visitors to the buildings (for training, awareness etc).
Frequency	Progress towards this indicator will be monitored bi-annually.
Data Source	Progress reports on the completion of buildings targeted under this project and data sheets articulating the number of personnel occupying buildings. Baseline collected during project preparation.
Methodology for Data Collection	Progress reports.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator. The World Bank team will undertake site visits during Implementation Sup port Missions during implementation.

Indicator Name	Female Project Beneficiaries
Definition/Description	Direct female project beneficiaries include profession and volunteer rescue personnel, administrative staff, emergency and disaster coordinators and visitors to the buildings (for training, awareness etc). Under this Project, female project beneficiaries will have access to dedicated female facilities such as bathrooms.
Frequency	Progress towards this indicator will be monitored annually.
Data Source	Reports on completed buildings including data on the number of new facilities for women (such as bathrooms) and the number of female rescue personnel, administration staff, volunteers and so forth. Baseline data was collected during project preparation.
Methodology for Data Collection	Reviewing project reports and building data sheets.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator.

Indicator Name	Number of reports on the impacts of disasters and climate change in Romania
Definition/Description	Under this project, new disaster and climate assessments will be developed and completed in Romania. The data and information produced will be shared on the government information platforms with other ministries and the public, and will also inform investment strategies for risk reduction.
Frequency	Progress towards this indicator will be monitored bi-annually.
Data Source	TORs, expert working group meetings, new data on disaster risks, reports and completed assessments.
Methodology for Data Collection	Reports.
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator.

Indicator Name	Public Awareness Campaigns
Definition/Description	Number of national awareness campaigns and workshops
Frequency	Annual reporting.
Data Source	Reports, meeting invitations and minutes, awareness campaigns.
Methodology for Data Collection	Information collected by GIES
Responsibility for Data Collection	GIES will be responsible for data collection.

Indicator Name	Institutional capacity in engineering, procurement and contract management is in place
Definition/Description	This refers to sufficient implementation capacity within the PCU established under DES and the PIU under GIES, including hiring of experts consultants as needed to fill identified gaps
Frequency	Monthly for Year 1, then quarterly for Year 2 and then bi-annually for remainder of Project.
Data Source	Reports, organizational charts and TORs
Methodology for Data Collection	
Responsibility for Data Collection	GIES will be responsible for data collection and compilation of the progress reports. GIES will provide annual reporting on the status of this indicator. The World Bank team will undertake site visits during Implementation Support Missions during implementation.

Indicator Name	Percentage of grievances responded to in the stipulated time
Definition/Description	This indicator is to ensure that an appropriate grievance redress system is in place within the first 3 months of the project effectiveness.
Frequency	Quarterly for Year 1, and then Bi-annually
Data Source	Reports from GRM
Methodology for Data Collection	
Responsibility for Data Collection	GIES will be responsible for data collection.

ANNEX 1: DETAILED PROJECT DESCRIPTION

COUNTRY: Romania
Disaster Risk Management Project

Project Components

1. The Project will have three components: (a) Improving Resilience of Disaster and Emergency response infrastructure, (b) Enhancing Institutional Capacity for Risk Reduction Investment Planning, and (c) Project Management.

Component 1: Improving Seismic Resilience of Disaster and Emergency Response Infrastructure (€43.5 million)

2. The main objective of this component is to improve the seismic safety and disaster resilience of critical disaster and emergency response buildings through investments in GIES facilities, structural strengthening, and modernization. This is especially important given that most buildings were constructed before 1990, before the current seismic and building codes were established. Improvements will ensure that these critical buildings are fully operational before, during, and post-disaster for all types of disasters – earthquakes, floods, storms, extreme weather, and so forth – by considering the resilience of critical systems such as energy, water and communications. Buildings will also receive energy efficiency improvements, aligned with EU and Romanian regulations which contribute to operational savings and Romania's NDC commitments. Finally, all building renovations achieve universal access and ensure equal access for men and women by the additional of gender appropriate facilities (e.g. bathrooms for women).

3. About 35 buildings have been identified by the Government as paramount in the emergency and disaster response and preparedness system and which are also at high risk of partial or complete collapse during an earthquake (Annex 5A). At the current stage, the exact number of buildings and their retrofitting and/or rehabilitation needs under the project are yet to be identified. The World Bank team, in consultation with DES and GIES, applied a prioritization framework (Annex 5C) to these 35 buildings for ranking according to a set of objective criteria, such as the building's seismic risk and importance in the emergency management system.

4. These buildings include emergency coordination and response headquarters, fire and SMURD ambulance services. The inability of one or more of these buildings to be fully operational during an earthquake, storm or flood event, creates a significant gap in government response capacity. This sub-set of buildings represents a small contribution to the overall number of public buildings in Romania at risk from collapse or serious damage. However, this project aims to develop the systems, frameworks, and data for an eventual larger-scale risk reduction program. It will also showcase the benefit of this approach for short-term gain, such as amenity and energy efficiency improvements, and long-term risk reduction and climate adaptation and will provide a very visible sign of the government commitment to, and progress in, risk reduction. This is particularly important given the limited progress in Romania in risk reduction in recent decades.

5. The World Bank team and MoIA have agreed that when defining each building's needs for upgrading according to current normative documents, the DES/GIES should also consider the building's future functionality requirements, including full operational capacity in case of design earthquake, storm or other adverse natural hazard, as well as electrical and mechanical systems, gender aspects, environmental and social safeguards, universal access, and so on. It has also been noted that buildings found to be in flood and landslide-prone areas (based on the information to be provided in the data sheets) will be excluded from the project.

6. The fundamental requirements of seismic assessment for the existing buildings and the fundamental requirements of seismic design for the retrofitting solutions must be performed with consideration of the ground motion with 20 percent probability of exceedance in 50 years (225 years mean return period) for life safety requirement. The retrofitted and/or rehabilitated buildings must be fully operational after the design earthquake. This can be achieved by using the seismic action with 225 years mean return period for life safety requirement, amplified by the importance and exposure factor of 1.4, as requested by the Romanian seismic design code in force.

7. The overall process from preparation of technical documentation to subsequent construction for each building is – as follows: (a) preparation of the technical surveys, energy efficiency audits, and feasibility studies; (b) review and approval of the feasibility studies by the client; (c) preparation of detailed technical design documents, including the site-specific ESMP; (d) review and approval of the technical detail design by the client; (e) application for building construction permit; and, (f) construction.

8. This component includes structural retrofitting, functional upgrading and energy efficiency investments and will include the financing of (i) preparation, review and analysis of the Technical Surveys, Energy Efficiency Audits, Feasibility Studies and Technical Designs, (ii) civil works for retrofitting or reconstruction of priority facilities, and (iii) supervision of construction works. This component will also finance non-structural activities focused on communications and public awareness. Specifically, two sub-components are identified:

Component 1.1: Reconstruction, retrofitting and modernization of Buildings

Component 1.2: Communication

Subcomponent 1.1: Reconstruction, retrofit and modernization of Buildings

9. The subcomponent will support reconstruction of buildings where the cost of retrofit and modernization approaches replacement cost of the building (expected to about one-third of buildings). Replacement buildings will be constructed to address the increasing risk of extreme weather events and to ensure continuity of energy and water supplies, and communication in any disaster event. Modernization will consider current and medium term operational needs. An example building covered under this component is the Mizil Emergency and Response Building which serves 130 communities and 120,000 people (Building 2 in Annex 5A). The building was originally constructed in 1908 (apparently as horse stables), is unsafe from a seismic and storm perspective and has ongoing obvious maintenance issues, including a leaking roof. Moreover, this building relies on wood stoves for heating and does not have back up communications and water. Given these circumstances, it is far more efficient and cost-effective to demolish and reconstruct the building.

10. The subcomponent will also support retrofitting of buildings, as per the recommendations of technical surveys and considering current and future functionality (expected to about two-thirds of buildings). Retrofitting of buildings is also expected to contribute to improved resilience of buildings, particularly in terms of addressing the increasing risk of earthquakes and extreme weather events and ensuring continuity of energy supply, water supply, and communication. An example building under this component is the Emergency Response Facility in Pitesti (Building 16 in Annex 5A), a building that provides emergency coordination for 600,000 people (more than 300 calls to the response center per 24-hour period) and has fire and rescue response facilities that serve 300,000 people. This building was constructed in 1978, but all technical designs were completed prior to the 1977 earthquake and therefore the building was constructed without consideration of the heightened assessment of seismic risk. The building was a candidate for energy efficiency improvements but was rejected from the program due to its failure to meet current seismic resistance standards. However, there is significant potential to strengthen, modernize and undertake necessary energy efficiency improvements to this building, without the need to reconstruct.

11. This subcomponent will also cover all goods, works and consulting services associated with technical surveys, feasibility studies, energy efficiency audits, technical design, and supervision.

12. The buildings to be retrofitted are expected to continue using their existing furnishing, and other endowments, but supplementary furnishings and other endowments may be considered on a needs basis.

Subcomponent 1.2: Communications

13. Information disclosure is the key to raising community awareness and backstopping physical investments in seismic safety, given the – admittedly temporary – impacts of these investments on the daily routine of staff and, volunteers, serviced communities and on the immediate surroundings of the buildings subject to intervention. To this end, the subcomponent will help carry out communications activities to ensure that the physical investments are properly communicated to staff and broader communities. These activities will focus on organizing: (a) informational meetings targeting staff and surrounding communities on the long-term benefits of retrofitting and reconstruction; (b) disaster risk awareness meetings; and (c) public awareness campaigns supported by various communication tools, including billboards, posters, brochures, and social media. The project also entails a proper communications and grievance redress mechanism to promptly and fully inform communities and to respond to disputes that will serve as a safety net to mitigate adverse social effects that may arise during implementation.

Component 2: Enhancing Institutional Capacity for Risk Reduction Investment Planning (€4.15 million)

14. The objective of this component is to enhance institutional capacity to accelerate risk reduction through improved understanding of disaster and climate risks in Romania, with a focus on developing risk reduction programs and investment strategies to guide future risk reduction investments. Three key activities are targeted under this component:

a. Enhance Ro-Risk for risk reduction planning: The national risk assessment (Ro-Risk) will be updated through the collection and use of higher resolution data of hazard and exposure, improved vulnerability modeling and more robust data of the financial and economic impacts of

disasters. This new data and information will be shared with other ministries through the National Planform for Disaster Risk Reduction and online Ro-Risk platform to support and enable MoIA and other ministries to develop risk reduction programs.

b. Risk reduction investment plan for emergency and disaster response facilities: Using Ro-Risk, and through the collection of facility level data of facilities under GIES, this activity will develop a package of evidence-based priority investments to enhance the resilience of emergency and disaster response facilities. It will also enhance the capacity of DES and GIES to design risk reduction programs.

c. Public Awareness: There is an urgency to reduce disaster and climate risks in Romania and this requires significant public awareness and ownership. Moreover, citizens can take substantial action to reduce risk where they reside, work and otherwise spend time. This activity will include national communication campaigns and workshops.

15. The component will support the above-mentioned activities, that are of critical importance for emergency response and disaster risk management, which belong to or are under the mandate of Department of Emergency Situations.

Component 3: Project Management (€2.35 million)

16. This component will focus on strengthening MoIA/DES/GIES capacity in operations management and staff capacity for the entire program. The component will invest in the operational expenses and staff capacity-building costs that are needed for timely and efficient implementation of the project. The project will be implemented by the GIES. This component will help strengthen the DES/GIES capacity by hiring experts and/or consultants in procurement, FM, disbursement, M&E, and environmental and social safeguards.

17. Learning and M&E will be given special emphasis, and the component will support all activities related to data collection, implementation assessments, and evaluations to ensure outcome targets are met. The incremental costs for respective M&E arrangements will be covered by this component. This component will also cover consultancy services and specific activities for capacity building, equipment, and software to implement the project and to monitor and evaluate the results.

18. Responsibility for coordinating M&E rests with the PIU. If deemed necessary, staffing may be increased to help manage the project and to support establishment of an adequate M&E framework and system. M&E will include activities related to data collection, implementation assessments, and evaluations to ensure outcomes are met.

19. Evaluation and learning aspects will be covered with conduct of Mid-Term Reviews (MTRs) and drafting of the Implementation Completion and Results Report (ICR). The project may also be subject to joint annual reviews.

ANNEX 2: IMPLEMENTATION ARRANGEMENTS

COUNTRY : Romania
Strengthening Disaster Risk Management in Romania

Project Institutional and Implementation Arrangements

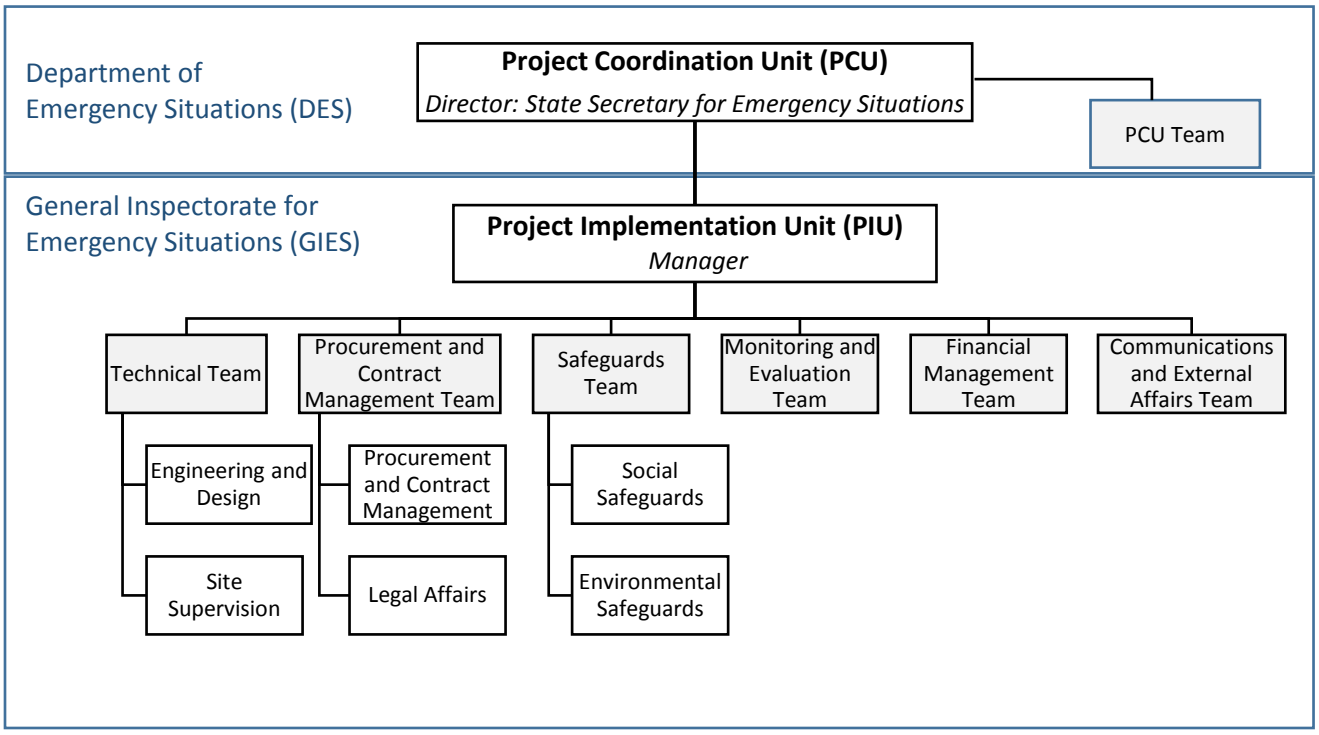
1. The World Bank will enter into a Loan Agreement with the MOPF. The Implementing Agency for the Project will be the MoIA through DES and GIES.

2. A Project Coordination Unit will be established in the Department of Emergency Situations, with the PCU Director position filled by the State Secretary for Emergency Situations (Figure A2.1). Staff from the DES will provide a supporting secretariat to the PCU. Functions of the PCU include overall project monitoring, semi-annual reporting to World Bank and strategic coordination with the World Bank and Ministry of Public Finance for the Project. The PCU will act as the steering body for the project and will be responsible for intervening when there are issues beyond day-to-day topics that could jeopardize timely and efficient implementation of the Project.

3. A Project Implementation Unit (PIU) will be established with GIES for all legal aspects associated with the implementation of the project, including fiduciary and procurement activities. The PIU will also be responsible for daily monitoring and evaluation, contract management, safeguards, and provision of technical expertise in architecture, engineering, construction, permits, supervision and so forth. All communication related to implementation issues such as procurement, financial management, and safeguards will be made directly with the World Bank task team on a day-to-day basis.

4. The PIU will implement the project in accordance with a Project Operations Manual (POM) which will be prepared in consultation with the World Bank and will set forth the rules, methods, guidelines, specific development plans, standard documents, and procedures for carrying out the Project. The POM will include, among other things, (a) the detailed description of all project activities supported under the Loan Agreement, their sequencing, and a prospective timetable and benchmarks for the activities, (b) the prioritization methodology, (c) the Environmental and Social Management Framework (ESMF), (d) the procurement and financial management arrangements for the Project, (e) coordination arrangements governing the day-to-day execution of the Project, and (f) project M&E and reporting arrangements.

Figure A2.1. Project Implementation Arrangements



Financial Management (FM)

5. **Overview**. The financial management (FM) systems and framework existent at GIES are adequate to support the implementation of the project. The project will rely on the institutional and procedural setup established by GIES, which will be responsible for carrying out the FM function of the project, including budgeting and planning, staffing, accounting, flow of funds, internal control, auditing, and financial reporting. The FM and disbursement arrangements will be described in a section of the POM that will be prepared prior to Loan Effectiveness.

6. **Risk analysis**. The FM residual risk is assessed as moderate after application of mitigation measures. GIES technical and authorizing staff is not familiarized with the implementation of Bank-funded projects and training and support will be provided by the Bank on the applicable FM and disbursement procedures. There is a substantial systemic risk of insufficient and/or untimely budgetary allocations for pre-financing project activities from the State Budget. This could be mitigated through timely elaboration of realistic budgetary estimates aligned to the procurement and project implementation plans and close coordination among key stakeholders.

7. **Budgeting and planning**. The GIES has adequate planning and budgeting capacity and the project budget will follow the established procedures for approval, budget formulation and execution, reporting and monitoring. Annual budgets will be entered into the commitments and reporting system and used for periodic comparison with actual results as part of the interim reporting.

8. **Staffing**. The GIES accounting unit is adequately staffed with experienced and qualified persons.

They have extensive experience in budgetary accounting and financial arrangements of EU funds, but they are not familiar with World Bank procedures, and additional training will be needed during project implementation as part of overall assistance provided by the Bank team. It may be necessary to supplement the unit's staff with additional staff, since the workload is expected to increase significantly when the project starts.

9. **Accounting**. GIES applies the existing Romanian budgetary accounting policies, procedures, and systems. The accounting records are maintained on an accrual basis, as per the prescribed chart of accounts, and denominated in Romanian Lei (RON). GIES has a reliable computerized accounting system in place, and will maintain detailed accounting records for each project it implements.

10. **Flow of funds and disbursement**. As detailed below, the project will use the pre-financing mechanism that is applicable to Bank-funded operations in Romania. Accordingly, GIES (as implementing agency) will pre-finance eligible expenditures from State Budget and then MoPF (on behalf of the Borrower) will claim reimbursement of funds from the loan based on the documentation prepared by GIES to reflect project eligible payments. The Treasury will make monthly budgetary openings as requested, and the project will receive its allocations in title number 65, as per the existing budgetary structure and classification. No Designated Account will be used.

11. **Internal controls and audit**. An adequate system of internal controls and procedures is observed at GIES and the project will rely on the existing public sector internal control framework. This framework includes the use of prescribed templates and checklists to ensure that required procedures are performed, and necessary authorizations and approvals from various technical units are obtained before the payment is done. The FM verifications include checking mathematical accuracy of the invoice, confirming legal conformity of the invoice, matching the invoice to the relevant contract, matching invoice to goods received notes or other evidence of completion of work, account numbers, and so forth. The internal audit function in MoIA is fairly well-represented and includes EU-funded projects in the scope of its annual work program. As it continues to develop, increased reliance will be placed on its activities to also cover internal audit aspects for the Bank-funded project.

12. **Financial reporting**. Semi-annual cash-based Interim Financial Reports (IFRs) will be prepared by GIES to report project expenditures pre-financed from the State Budget, based on the format agreed. The reports will be due for submission within 45 days after the end of each quarter.

13. **External audit**. The project financial statements will be subject to annual audit by independent auditors acceptable to the Bank and in accordance with the agreed terms of reference. The audited financial statements together with auditor's opinion and management letter will be due for submission within six months after the year end. The cost of the project audits will be financed from the loan. Within a month after their formal acceptance by the Bank, audited financial statements and audit reports will be publicly disclosed in a manner acceptable to the Bank.

14. The Supreme Audit Institution (Romanian Court of Accounts) is not yet fully familiar with the Bank's procurement and FM guidelines and procedures. It is planned that its capacity in this regard will be further strengthened. The Court will continue to carry out regular financial and compliance audits of the Ministry and GIES, under its larger mandate. The Bank will be informed about any issues raised by the Court related to the project, and will review and assess if these will require follow-up actions that should be addressed

by the counterparts to strengthen the FM arrangements for this project.

Disbursements

15. Loan proceeds will be used to reimburse the State Budget pre-financing of the project eligible expenditures. The table below describes the types of the expenditures that will be financed under the Loan, and the applicable IBRD Loan eligibility percentage.

Category	Amount of the Loan Allocated (expressed in Euro)	Percentage of Expenditures to be financed (inclusive of Taxes)
(1) Works, goods, non-consulting services, consultants' services (including project audits), training, and operating costs for the PCU and PIU	50,000,000	100%
TOTAL AMOUNT	50,000,000	

16. The project budget will be included in a specific line in the GIES budget. Each month, MoPF will provide GIES through MoIA with pre-financing for the project eligible expenditures. GIES will report to MoPF (in EUR and RON) on the eligible expenditures incurred monthly and will provide periodically to MoPF statements of expenditures to report on the amounts spent for project purposes. Based on the documents received, MoPF will request periodic reimbursements from the loan, sending to the Bank applications for withdrawals, as per the instructions included in the Disbursement and Financial Information Letter. The funds requested will flow from the Bank to the MoPF's EUR-denominated account opened with the National Bank of Romania, as reimbursement for the pre-financing used for project eligible expenditures. These funds will be used for the purposes specified in the Romanian legislation on public debt.

Procurement

17. **Capacity Assessment:** The team assessed the risks that may negatively affect the ability of GIES to carry out procurement processes. The key issues, risks and mitigation measures concerning procurement for implementation of the project are detailed in the table below:

Identified Risk	Proposed Mitigation Measure	Responsible Party	Timeframe
No knowledge of Bank procurement procedures and no previous experience with Bank-funded operations	Bank procurement team to provide procurement training for GIES which will cover the approach to procurement, Procurement Regulations and the Systematic Tracking of Exchanges in Procurement (STEP) Bank team will also make available any information on relevant external training courses and will encourage the GIES staff	Bank Team	Shortly after project approval Throughout project implementation period

	to attend Bank to carry out regular implementation support visits and otherwise support and guide the IA throughout the project implementation period		Throughout project implementation period
The detailed structure and task assignment for the PIU has not been finalized yet and while important skills, such as procurement and FM, exist in GIES, these need to be enhanced	GIES to: (i) hire a qualified and experienced Procurement Specialist to enhance their procurement capacity; and (ii) to employ technical experts to enhance their capacities where expertise is lacking	GIES	After effectiveness
Lack of practical guidance on the steps of the procurement process. The IA does not have internal manuals, including the Project Operational Manual (POM), which would guide staff in carrying out procurement	IA to: (i) develop a POM which would include a detailed chapter on steps in the procurement cycle, roles and responsibilities of IA staff in the procurement process; and (ii) to assign qualified staff to ensure that the procurement plan is implemented, monitored and updated in a proper and timely manner	GIES/Implementing Agency	After project approval
Complex prior internal control procedures established by the national legislation and which generally cause significant delays in the procurement process	To the extent possible, IA to establish certain business standards with respect to internal approval procedures and closely monitor that these standards are respected	Implementing Agency	At early stages of project implementation
Insufficient and/or delayed allocation of budget funds	GIES to accurately estimate the annual budgets and allocation of funds to obtain the required allocation of funds to avoid delays in contract implementation. MoIA will give priority to this project in the budgetary allocation process, within the total expenditures ceiling provided to it by the MoPF	GIES	Throughout project implementation period

18. **Project Procurement Strategy for Development (PPSD):** Based on the project requirements, operational context, economic aspects, technical solutions and market analysis, a PPSD has been developed for the project with the support from the Bank team. The PPSD identifies the following types of activities: (a) civil works contract to improve the seismic safety and disaster resilience of critical disaster and emergency response buildings through investments in building infrastructure, structural strengthening and modernization (approx. US$47 million); (b) consulting services for detailed design of

works, construction supervision, energy audits, technical surveys, etc. (approx. US$9 million). For the procurement of civil works, the estimated cost per package ranges from US$0.5 million to US$3.5 million. The PPSD showed that there is a lot of potential contractors in Romania for this type of works, nature and size, and open competition approaching the national market was found to be the most suitable choice. Nevertheless, foreign contractors are still allowed to participate if they consider doing so. The project does not foresee contracts estimated to cost above US$20 million for which open competition approaching the international market would be required. For consulting services including civil works designs, construction supervision, technical surveys, feasibility studies, etc. the estimated cost per packages ranges between US$0.3 million to US$2.3 million with major assignments being the construction supervision and optimization of the decision-making processes in the field of disaster prevention. For construction supervision the PPSD suggests that several contracts are signed given that the civil works contracts are scattered all over the country. Procurement of goods will be limited to small value contracts to procure equipment necessary for the functioning of the PIU.

19. Although the market research demonstrates that there is a significant number of potential consultants in the country for the types of services needed, the participation of reputable and qualified international consultants will be beneficial to the project implementation. Therefore, the Bank recommends that the project approaches both national and international markets for larger value contracts which are critical for the project. However, irrespective of the market approach, the PPSD suggests that for all contracts, including those for which national approach is foreseen, either the Bank's Standard Procurement Documents or other procurement documents agreed by the Bank are used. For procurement approaching the international market, Bank's Standard Procurement Documents shall be used.

20. **Procurement Plan:** As part of the PPSD, GIES developed a Procurement Plan which will be consistent with the project implementation plan. The PP provides information on procurement packages, selection methods, procurement approach and evaluation methods to be adopted for each contract to be financed under the project. Any updates to the PP shall be subject to Bank's prior review. STEP will be used to prepare, clear and update the Procurement Plan and conduct all procurement transactions for the project. Accordingly, all the procurement activities under the project will be entered into, tracked and monitored online through the system. Once approved by the Bank, the PP will be published on the Bank's website.

21. **Procurement Prior Review Thresholds:** The Procurement Prior Review Thresholds were set by the Bank based on the project procurement risk level. All contracts at or above the set thresholds are subject to international advertising and the use of the Bank's Standard Procurement Documents. The thresholds will be specified in the procurement plan (PP). While currently BAFO, procurement processes involving contract negotiations, competitive dialogue and sustainable procurement are not foreseen under the project, these will be subject to the Bank's procurement prior review, irrespective of the contract value, if the decision is taken during project implementation to apply them.

22. **Record Keeping:** All documentation with respect to each procurement will be retained by GIES according to the requirements of the Legal Agreement. GIES will furnish such documentation to the Bank upon request for examination by the Bank or by its consultants/auditors. Documents with respect to procurement subject to post review will be furnished to the Bank upon request.

23. **Bank's procurement oversight:** The Bank will exercise its procurement oversight through a risk-based approach comprising prior and post review and independent procurement reviews, as appropriate. Procurement supervision visits will be carried out at least twice per year. These will include special procurement supervision for post-review on procurement processes undertaken by the GIES to determine whether they comply with the requirements of the Legal Agreement. The post review will be conducted with an initial sampling rate of 15 percent which could be adjusted periodically during project implementation based on the project performance.

Environmental and Social (including safeguards)

24. **Environmental Safeguards Category**. The project is categorized as Environmental Category B-partial assessment, due to the nature of the proposed civil works.

25. **Establishment of Environmental and Social Expertise within GIES-PIU**. Technical Specialists within GIES-PIU will be responsible for full coordination and supervision of the environmental plans and risk mitigation measures undertaken within the project. The Specialists will work in close coordination with supervision project coordination staff and technical staff in courts and will: coordinate environmental training for staff, designers and local contractors; disseminate existing environmental management guidelines and develop guidelines in relation to issues not covered by the existing regulations, in line with the Bank and EU standards for implementation, monitoring and evaluation of mitigation measures; ensure that contracting processes for construction works and supply of equipment include reference to appropriate guidelines and standards; and conduct periodic site visits to inspect and approve plans and monitor compliance.

26. **For the civil works, no resettlement or land acquisition will be necessary and no social safeguards policies are triggered**. The sites selected for the development of project subprojects are publicly owned and not used for agricultural or businesses purposes, by formal or informal users. Negative social impacts of project activities are expected to negligible.

27. **GIES-PIU will follow the mechanism of development and execution of environmental documents in line with the requirements of environmental legislation, good international practice and the World Bank OP 4.01.** An Environmental and Social Management framework (ESMF) has been developed and individual (site-specific) Environmental and Social Management Plan (ESMP) will be produced for each subproject, including detailed sections "Environmental protection" (as needed), the state of environmental appraisal, the activities ensuring environmental mitigation measures, institutional framework for preventative arrangements, environmental monitoring program.

28. **GIES-PIU will create monitoring arrangements for environmental and social aspects of the approved subprojects during the whole project lifecycle**. During project implementation, GIES-PIU will have overall supervision responsibility for ensuring that the measures indicated in the ESMF/ESMPs are being properly performed. The GIES-PIU in collaboration with the local authorities of the selected buildings, will perform the environmental monitoring during both, construction and operation phases, as specified in the monitoring plan of the ESMPs. Each ESMP will be monitored by a specialized supervision and project management consultant, as part of the overall supervision services for each site, during construction stage. Thus, each periodic monitoring report, will include a specialized chapter dedicated to Environmental and Social Supervision and Performance, which shall include the results of the field

supervisors screening and review procedures and a description of any operations not currently in compliance with environmental requirements.

29. Appropriate training on Bank safeguards will continue to be provided under the project to local officials, contractors, and community representatives.

30. Communities and individuals who believe that they are adversely affected by a WB supported project may submit complaints to existing institutional redress mechanism including the MoIA's Public Relations Department or the WB's Grievance Redress Service (GRS). To address a request or complaint to GIES or DES territorial units rely on either a direct address to the institution or an online form to be completed (request or complaint) on the institution's website. In either case, these type of requests or complaints are treated under the Law No. 544/2001 Regarding the free access to public information. There are no other Grievance Redress Mechanisms (GRM) available at the level of GIES/DES units on the websites of those units.

31. The GRS ensures that complaints received are promptly reviewed to address project-related concerns. The proposed project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond.

Monitoring and Evaluation

32. A detailed Results Framework for this operation is provided in Section VII: Results Framework and Monitoring. Progress on results and implementation will be monitored on a routine basis throughout the implementation of the project. Learning from M&E data from each phase will provide critical information for the development of the subsequent phases. Data on progress toward achieving the PDO and intermediate indicators will be collected through the PIU.

33. A guideline on collecting and evaluating indicators and appropriate reporting templates is included in the POM. The progress on meeting these indicators and on evaluation of the data will be described in the semi-annual progress reports to be submitted by the PIU to the World Bank. In a clear and tangible manner, the Progress Reports will demonstrate the progress made during the reporting period against the Results Framework and the identified target values identified. The PIU is responsible for submission of progress reports semi-annually. The World Bank team will conduct and issue an MTR will be conducted and a final ICR.

34. The PIU will collect data for results indicators from the field, monitor the quality of data collection, and evaluate results. Consequently, the PIU will review and verify the data and evaluate results before including these results in reports to be sent to the World Bank. If deemed necessary by the MoIA, the PIU may receive support from externally hired M&E specialists to ensure high-quality monitoring and reporting that meets the standards of the World Bank.

35. Project implementation progress will be monitored by the World Bank through implementation support missions to be conducted every six months throughout the life-span of the project. Outputs and

outcomes will be reviewed during project supervision to evaluate progress using data compiled by the PIU. M&E will measure project performance according to the targets in Results Framework and the provided progress reports will assess the progress based on timely delivery of targets, the management of contractors, and inclusion of and outreach to external stakeholders.

ANNEX 3: IMPLEMENTATION SUPPORT PLAN

COUNTRY: Romania
Disaster Risk Management Project

Strategy and Approach for Implementation Support

1. Experience under comparably sensitive and challenging projects have shown that previous operations have shown that higher than normal supervision and support are required for specific World Bank responsibilities, including the transfer of knowledge that the World Bank has gained over the past decade in similar operations.

2. Implementation support will be provided by the World Bank team, consisting of staff with relevant competencies in operations, procurement, finance, safeguards, and technical content on disaster risk management and seismic risk reduction. The World Bank team will undertake periodic field missions/implementation support missions every six months throughout the project's implementation as allowed by security status.

3. To enable the World Bank to honor its corporate commitments – regarding fiduciary and safeguards responsibility, oversight and implementation support, and M&E of project implementation, outcomes, and results – the World Bank will maintain close contact with the PIU. The PIU will manage day-to-day implementation of the project and produce and transmit to the World Bank all data, reports, and information required to follow project implementation progress, detect deviations and problems, and identify and respond to problems and bottlenecks – including procurement transactions and FM requirements, verification of construction sites and assets acquired under the project against the specifications. The PIU will also report to the World Bank on the progress and status of project implementation and contract administration against agreed or contractual timetables and schedules.

4. The PIU will also report to the World Bank on compliance with the triggered environmental and social safeguards policies. The PIU will receive support from the World Bank to prepare relevant environmental and social documents and instruments applicable to the project, support the World Bank in conducting due diligence processes, and monitor the timely preparation of environmental and social assessments and management instruments, which must be required to be completed and approved by the World Bank before any physical activity or works commence in the field. The PIU will also ensure that a functioning grievance redress mechanism is in place and maintained for each building.

5. The Implementation Support Plan (ISP) for the project has been developed based on the specific nature of the project activities, factoring in the existing capacity of the implementing agency and the project's risk profile in accordance with the Systematic Operations Risk-Rating Tool. This ISP reflects the assessments conducted by the World Bank during project preparation and will be regularly reviewed and revised as required.

6. The ISP includes frequent review of implementation performance and progress. The World Bank team will monitor progress on several fronts, including (a) indicators as defined in the results framework; (b) central and county-level project implementation; (c) independent verification of project activities; (d) proper fiduciary management of all activities carried out by the PIU; (e) reconciliation of payments with

contracts; and (f) monitoring of key legal covenants.

7. Implementation support missions, including field visits, will concentrate on the overall implementation of project activities at all levels. Field visits will serve to verify compliance with the approved POM. Support will be provided by the World Bank, in collaboration with other experts, to ensure that activities are implemented in an efficient and cost-effective fashion in accordance with the PDO. The World Bank team will also facilitate knowledge exchange and mobilize appropriate global expertise.

8. **Client relations.** Task team leaders will (a) coordinate World Bank implementation support to ensure consistent project implementation as specified in the legal documents and (b) follow up with senior representatives of the ministry (where appropriate) to gauge progress in achieving the PDO and address implementation bottlenecks as they arise. In addition, the task team leader will ensure regular exchanges of information and coordination with other key stakeholders, including bilateral and multilateral donors.

9. **Financial Management.** The World Bank's FM specialist will also provide timely and effective support. The project will be monitored as part of the broader implementation support and supervision on a risk-based approach through (i) *desk reviews* of audit reports and management letters, interim financial reports, and status of action plans agreed with the counterparts following visits or audit findings, if any; and (ii) *on-site reviews* of the continuous adequacy of the project FM arrangements. These will include monitoring and reviewing the status of implementation of any agreed actions and issues identified by the auditors, as well as other issues related to project accounting, reporting, budgeting, internal controls, and flow of funds. Special emphasis will be placed on the adequacy of the budgetary allocations to pre-finance project expenses. A walkthrough review of a sample of transactions will be also conducted during the on-site monitoring reviews. The Implementation Status and Results Report will include an FM rating of the project. To the extent possible, mixed on site supervision missions will be undertaken together with procurement, M&E, and safeguards colleagues.

10. **Procurement.** Implementation support will include prior procurement reviews. The World Bank's procurement specialist will carry out at least two missions per year to provide support to the implementation of procurement activities and as the need arises. This support will include the set-up and functioning of the Procurement Plan, the implementation of procurement activities listed in the Procurement Plan and training as needed. In addition to carrying out random ex-post review of procurement activities, the procurement specialist may lead thematically focused missions depending on the procurement needs and as agreed to by the ministry.

11. **Safeguards.** The World Bank team's social and environmental safeguards specialists will provide technical support and oversight throughout project implementation and will take responsibility for initiating the timely preparation of required safeguards instruments (ESMF, ESMPs). Semiannual inputs from the environmental and social specialists will be required throughout the project, and formal implementation support missions and field visits will ensure that the safeguards processes are adhered to in a fashion acceptable to the World Bank.

12. **Mid-Term Review (MTR).** An MTR will be carried out after 3 years of project implementation. In preparation for the MTR, an independent review of implementation progress will be carried out, including audits. Results will provide input to any potential revisions or restructuring at the time of the MTR. The

MTR will review (among other things) the Results Framework, Systematic Operations Risk-Rating Tool, country ownership, stakeholder participation, FM, procurement processing, and sustainability aspects.

13. **Implementation Completion and Results Report (ICR).** To satisfy accountability needs and provide lessons from completed operations, an ICR will be drafted by the World Bank and the Borrower within six months of project completion. ICRs are tailored to enhance development effectiveness through a continuous process of self-evaluation, lesson learning and application, knowledge sharing, and accountability for results. The lessons learned from ICRs improve the quality and effectiveness of World Bank operations, while Borrower/stakeholder participation in the ICR process informs later designs, preparation, and implementation.

14. The World Bank team and additional consultants will directly support project implementation with technical assistance as needed. During the first year of the project, it is foreseen that frequent missions to essential areas will be needed to support the ministry in initiating activities, given the nature of the project. These implementation support missions will provide an opportunity for the preparation of subsequent projects, as per the SoP approach.

Implementation Support Plan and Resource Requirements

15. The following ISP reflects the preliminary estimates of the skill requirements, timing, and resource requirements over the life of the project. Given the need to maintain flexibility over project activities from year to year, the ISP will be reviewed annually to ensure that it continues to meet the implementation support needs of the project.

16. Tables A.3.1 and A.3.2 indicate the level of inputs that will be needed from the World Bank to provide implementation support for the proposed project.

Table A3.1. Implementation Support Plan

Time	Focus	Skills Needed	Partner Role
First 12 months	• Provide support to ○ Successful start of project ○ FM systems ○ Functioning ○ Procurement ○ Practices on World Bank norms ○ Establishment of M&E system • Monitor implementation of project activities.	All skills	• Task team to support smooth start-up • Ensure safeguards on track • Support PIU
12 - 48 months	• Ensure adequate implementation support of all aspects of project • Monitor implementation of project activities, including site visits • Provide support to final evaluation and ICR	All skills	• Ensure safeguards are on track • Support PIU • Provide technical assistance

Table A3.2 Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task Team Leader	48	12	International or Field-based Staff
DRM Specialist	90	12	International or Field-based staff
Technical Specialist	12	3	International or Field-based staff

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Environmental Specialist	12	Local travel as needed	Field-based staff
Social Specialist	12	Local travel as needed	Field-based staff
Economist (M&E)	12	Local travel as needed	Field-based staff
Procurement Specialist	60		Field-based staff
Financial Management Specialist	24		Field-based staff
DRM Analyst	90	Local travel as needed	Field-based staff
Consultant for Safeguards	90	Local travel as needed	Short Term Consultant
Consultant for Communications	90	Local travel as needed	Short Term Consultant

ANNEX 4. ECONOMIC ANALYSIS

A. Approach and Methodology

1. A cost-benefit analysis was performed to inform project design. This analysis aims to estimate the ERR (economic rate of return), NPV (net present value) and cost-benefit ratios of the intervention based on a set of assumptions. It is conjectured that two earthquake (EQ) scenarios are expected and jointly considered for the analysis. The first, EQ scenario 1, has a higher probability with an annual exceedance probability of earthquake hazard at 39 percent in 50 years, and a corresponding earthquake with magnitude of approximately 7.5. The second, EQ scenario 2, has an annual exceedance probability of earthquake hazard at 10 percent in 50 years, and a corresponding earthquake with magnitude of approximately 7.9. Human life has been valued as part of the analysis and the concept of Value of a Statistical Life (VSL) was used.

2. The cost-benefit analysis uses the World Bank's *Triple Dividend of Resilience Framework* (TDRF) as a basis. The TDRF identifies three types of benefits from risk reduction and disaster mitigation projects, consisting of: (i) avoided losses; (ii) unlocked development potential arising from stimulated innovation and bolstered economic activity in a context of reduced disaster-related background risk for investment; and (ii) enhanced synergies of the social, environment and economic co-benefits of disaster risk management investments, even if a disaster does not take place for many years.[32]

3. A recent World Bank Policy Paper[33] identifies the key variables in a cost-benefit analysis for risk reduction efforts (i.e., retrofitting and reconstructing critical infrastructure) and states that calculation of the benefits and costs of such projects involves estimates and assumptions covering the following six elements: (a) strengthening and retrofit costs, (b) building replacement costs, (c) the risk of a natural disaster (and of the scale of that disaster), (d) the risk of damage if a natural disaster occurs, (e) the cost of that damage in both financial and human terms (loss of life, casualties, amount of damage and service interruption for public facilities etc.), and (f) the discount rate. Consistent with the above approach, the table below contains the assumptions and parameters used in the analysis.

4. The CBA analysis focused on assessing the IRR for Component 1 (Improving Seismic Resilience of Disaster and Emergency Response Infrastructure) investments, which account for 87 percent of the overall project. Additionally, due to limitations in readily available data, the CBA calculations account solely for the avoided losses component (Benefit (1) of the TDRF, whilst Benefits (2) and (3) are discussed but are not used in the final calculations.

32 . M. Tanner, R. Reid, E. Wilkinson, S. Rajput, S. Surminski, and J. E. Rentschler, "The Triple Dividend of Resilience: Realizing Development Goals through the Multiple Benefits of Disaster Risk Management," World Bank, Washington, DC, 2015
[32] Hallegatte, Stéphane. 2012. A Cost-Effective Solution to Reduce Disaster Losses in Developing Countries: Hydro-Meteorological
[33] Charles Kenny, *Why Do People Die in Earthquakes?*, The World Bank (WSP 4823)

Data and Parameters used for Cost-Benefit Analysis (CBA)

Description	Units	Cases	
		(1) Without Project	(2) With Project
Earthquake Hazard, peak ground acceleration	cm/s^2	Defined for all 35 buildings using site dependent ground motion parameters	
Exceedance Probability of EQ Hazard, in 50 years	Percent	39% in 50 years[1] 10% in 50 years[2]	
Project Investment (Component 1)	Euro Million	0	43.5
Number of staff (day time)	persons	1,727	2,322
Number of permanent staff	persons	1,257	1,297
Total area of GIES buildings	m^2	51,025	56,870
Number of GIES equipment	piece	120	
Estimated base value of GIES buildings and equipment	Euro Million	50.3	
Number of persons in the areas served by GIES buildings	persons	5,139,790	
Avoided fatalities in collapsed buildings	persons	0	461[1] 1,227[2]
Avoided fatalities from fire suppression	persons	0	1,108[1] 2,623[2]
Value of a Statistical Life (VSL)	Euro*	559,488	
Value of avoided fatalities from collapsed buildings	Euro Million	0	257.9 [1] 686.4 [2]
Value of avoided fatalities from fire suppression	Euro Million	0	620.1[1] 1,467.4[2]
Aggregated value of avoided losses	Euro Million	0	903.6[1] 2,207.9[2]
Avoided direct damage to GIES Buildings	Euro Million	0	12.4[1] 23.9[2]
Avoided content losses to GIES buildings	Euro Million	0	2.3[1] 4.1[2]
Avoided direct damage from fire suppression	Euro Million	0	10.9[1] 26.0[2]
Planning Horizon	years	N/A	20
Discount Rate	percent	N/A	5%

1/ EQ scenario 1
2/ EQ scenario 2
* Exchange rate of 1 US$ = 0.86 Euros

B. Discussion and Background on Key Data and Parameters

5. **Earthquake Hazard and its annual exceedance probability:** The 35 buildings under Component 1 are scattered across Romania, and the seismic hazard at the different project sites is controlled by more than one seismic source. Therefore, the seismic hazard used in the economic and financial analysis in this annex is defined in terms of site dependent ground motion parameters (peak ground accelerations (PGA)). The Cost Benefit Analysis presented hereinafter is based on a probabilistic seismic hazard analysis which assumes two scenario earthquakes:

a. *EQ scenario 1:* PGA values occurring on the project sites with 39 percent probability of exceedance in 50 years, and collectively corresponding to a 100 year mean return period (MRP). The PGA values with a 100 years MRP have a probability of exceedance of 9.5 percent in 10 years, of 18.1 percent in 20 years, of 25.9 percent in 30 years, or of 39% in 50 years. In terms of moment magnitude of an earthquake generated by Vrancea intermediate-depth seismic source, the mean recurrence interval of 100 years corresponds to M_W=7.5…7.6.

b. *EQ scenario 2:* PGA values occurring on project sites with 10 percent probability of exceedance in 50 years, and collectively corresponding to a 475 year mean return period (MRP), as recommended by Eurocode 8 (EN 1998-1, CEN, 2004). The PGA values with a 475 years MRP have a probability of exceedance of 2.1 percent in 10 years, of 4.1 percent in 20 years, of 6.1 percent in 30 years, or of 10 percent in 50 years. In terms of moment magnitude of an earthquake generated by Vrancea intermediate-depth seismic source, the mean recurrence interval of 475 years corresponds to M_W=7.9…8.0.

6. **Project investment**: This annex is based on the investments envisaged under Component 1 of the project. The planned investments amount to €43.5 million.

7. **Number of staff (day time), number of permanent staff, total area of GIES buildings, number of GIES equipment:** These data were obtained from the DES and GIES through the data sheets completed for each building being considered under the project.

8. **Value of GIES Assets (buildings and equipment):** The total floor area of the buildings listed by GIES is approximately 56,870 m^2. Using the best estimates available at project appraisal, the average cost per m^2 of existing GIES buildings (value of structural and non-structural building components) is estimated at €600 per m^2. Therefore, the value of the GIES buildings is estimated at €34,122,000. In addition, the value of the equipment and tools housed within the buildings is estimated at €16,252,416, which results in an aggregate amount of €50,374,416 for the value of the GIES buildings and equipment. The value of land was excluded in these calculations.

9. **Discount Rate:** The World Bank recommends that state-of-the-art economic analysis should link social discount rates to long-term growth prospects of the country where the project takes place[34]. Given reasonable parameters for the other variables in the standard Ramsey formula, this yields a discount rate of 5 percent which has been used for the present analysis.

10. **Value of Lives Saved:** To account for the intrinsic value of life and assign a numerical estimate to the value of avoided fatalities due to the project intervention, the concept of Value of a Statistical

[34] The projected, long-term real consumption growth rate is estimated at approximately 4.9 percent.

Life (abbreviated as VSL), is used[35]. Due to the scarcity of reliable VSL estimates applicable for the project, the "benefits transfer" method[36], is used to value the lives potentially saved by the Project (i.e. avoided fatalities). The calculation for the "benefits transfer" involves selecting a reference country with relevance to the Romanian case, and using the most recent VSL estimates to make adjustments. The VSL estimate of the Environmental Protection Agency of the USA is equal to US$ 9.7 million. Adjustment of the USA-based VSL estimate is required using the ratio of the GDP per capita in Romania compared to that of the USA. According to the 2016 data[37], the GDP per capita are US$ 9,522 and US$ 57,683 for Romania and USA, respectively. This adjustment implies the multiplication of the VSL in USA by the ratio of GDP per capita in Romania and the USA. Moreover, considering the potential overestimation in the resulting VSL estimates when VSLs are being transferred from high-income to lower-income countries, an income elasticity of 1.5 is employed to arrive at a calibrated VSL. This is accomplished by raising the ratio of the GDPs in the two countries to the power of 1.5, which in turn yields the calibrated VSL estimate of US$ 650,567, or €559,488[38] for Romania. The underlying calculus is summarized in the table below.

VSL Calculation for Romania

Parameter Description	Designation or Formula	Units	Values
VSL per EPA Calculations	VSL_{USA}	US$	9,700,000
Romania GDP/Capita 2016	Y_{RO}	US$	9,522
USA GDP/Capita 2016	Y_{USA}	US$	57,683
Income Elasticity of VSL	E	None	1.5
VSL Estimate - Calibrated	$VSL_{RO} = VSL_{USA} * \{(Y_{RO}/Y_{USA})\}^{E}$	US$	650,567

11. **Number of persons in the served areas:** Population exposure is characterized by the number and geographical distribution of persons in each census unit. The number of persons in the served areas for this analysis was obtained by combining the area served by each GIES building with the statistical information on population within each census unit[39] that belongs to the served areas. Based on this, the number of persons in the areas served by GIES buildings is estimated as amounting to 5,139,790.

12. **Avoided fatalities in building collapse:** The buildings belonging to census areas served by the GIES units considered in the Project are classified in typologies according to the quality and level of seismic design, as well as the type of structural system used. To evaluate the avoided fatalities in building collapse, the casualty model[40] is employed to determine the percentage of occupants trapped when the buildings collapse. The model considers a series of factors that are applied to the population exposed under different building typologies. Additionally, to evaluate the number of life threatening cases needing immediate medical attention, the number of trapped survivors in collapsed buildings that subsequently lose their life is determined in two cases: (i) GIES buildings not operational (no

[35] VSL reflects people's willingness to pay for reductions in their risks and reflect to a much higher degree the intrinsic value of life
[36] Cropper and Sahin, The World Bank (Mortality and Morbidity in the Context of Disaster Risk, *http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-4832*
[37] *https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=US-RO*
[38] Exchange rate of 1 US$ = 0.86 Euros
[39] Census data of 2011
[40] Coburn, A., Spence, R., 2002. Earthquake Protection. Second Edition, John Wiley and Sons Ltd., Chichester, England

project), and (ii) GIES buildings fully operational (implementation of the project). The difference between the number of trapped survivors in collapsed buildings that subsequently lose their life in Cases (1) and (2) represent the number of avoided fatalities. Overall, the number of avoided fatalities from building collapse is estimated at 461 and 1,227 persons for EQ scenarios 1 and 2, respectively.

13. **Avoided fatalities from fire suppression**: To obtain the avoided fatalities due to the suppression of fire spreading following an earthquake, the number of residents living in buildings fully burnt by the fires following earthquakes is estimated in two cases: (i) GIES buildings are not operational (no project) and (ii) GIES buildings are fully operational (implementation of the project). The difference between the number of residents living in buildings fully burnt by the fires following earthquakes in case 1 and case 2 represents the avoided fatalities in buildings located in the areas served by GIES buildings due to the suppression of fire spreading. Overall, the number of avoided fatalities due to the implementation of Component 1 is estimated at 1,1081 and 2,623 persons for EQ scenarios 1 and 2, respectively.

14. **Avoided direct damage to the 35 GIES Buildings:** Avoided direct damage is expressed as the total cost for repairing or replacing the 35 GIES buildings damaged by the earthquake scenarios used in this analysis. It is calculated as the difference between the total cost for repairing or replacement of a GIES building determined under the current state (no project) and the strengthened/retrofitted case after the implementation of the project. An average value of GIES buildings replacement cost of 800 Euro/m^2 is used as a best estimate, and by multiplying this value with the average value of total repair cost ratio (expressed as percentage of building replacement cost), the average value of avoided direct damage to the 35 GIES buildings is obtained. Overall, the average value of avoided direct is calculated at €12,452,418 for EQ scenario 1 with 100 years MRP, and €23,888,336 for EQ scenario 2 with 475 years MRP.

15. **Avoided content losses to GIES buildings**: Building content is defined as equipment, tools, furniture, computers and other supplies that is not integral to the building structure. The avoided content losses to GIES buildings is expressed as the cost of content damage to the 35 GIES buildings damaged by for each EQ scenario and it is calculated as the difference between the cost of content damage considering the current condition of the GIES building (base case) and the cost of content damage after the implementation of Component 1. Overall, the average value of avoided content losses is estimated at €2,262,761 for EQ scenario 1 with 100 years MRP, and €4,101,204 for EQ scenario 2 with 475 years MRP.

16. **Avoided direct damage from fire suppression in the areas served by GIES buildings:** The approach considered the number of post-earthquake fire ignitions and estimated the spread of the initial fire ignitions with and without fire suppression. The number of fully burnt buildings is obtained by adding the number of buildings initially ignited by the fires following earthquakes with the number of buildings fully burnt because of the spreading of the initial ignitions. The value of total replacement cost of fully burnt buildings is then calculated. For both EQ scenarios, the average replacement cost of the buildings in the areas served is considered 600 Euro per m^2 as the best available estimate, and the following estimates for avoided damages are obtained: (i) €10,880,675 for EQ scenario 1 with 100 years MRP and €26,049,184 for EQ scenario 2 with 475 years MRP.

17. **Second Dividend of Resilience – Development:** Data and research are very rare in this

connection. As a benchmark, the Hallegatte framework has been applied [41] which deals with hydro-met related hazards, investments and benefits. This approach estimates the value of concurrent economic development being equivalent to 8 times the value of avoided asset losses at the lower end of the spectrum, and 15 times at the higher end. Since, emergency response facilities constitute only a small part of an overall earthquake hazard mitigation program; it is assumed that the economic development benefits associated with emergency and response building investments would be approximately equal to the value of the avoided assets losses at the lower end, and three times as high at the higher end. This logic allows us to use a weighted factor of 2 to multiply the avoided asset losses (and related benefits), to calculate benefits due to the triggered economic development aspect even when the disaster never strikes.

18. **Third Dividend of Resilience – Mitigation Co-Benefits:** Although data paucity is a problem in this category of benefits as well, energy efficiency improvements in existing public buildings are in the positive list of co-benefits related to mitigation of climate change and yield savings on lighting, water and heating investments. Under the project, more than 51,000 m^2 of emergency and disaster response facilities will be rebuilt or structurally strengthened and refurbished. If one-third of buildings are reconstructed to 2020 energy efficiency targets and two-thirds refurbished to a "moderate energy efficiency target" then energy consumption and associated cost and emissions will be more than halved[42]. Assuming monthly energy costs of €1.2 per m^2, this equates to a total saving of more than €8 million in energy costs over a 20-year planning horizon.

C. Results and Discussion

19. **Cost Effectiveness:** A one-third reconstruction, two-thirds retrofit of buildings was assumed. The effective floor area for reconstruction and retrofit was estimated as more than 50,000 m^2. These buildings host more than 1,700 occupants during daytime shifts and provide fire and rescue services and emergency and disaster coordination for more than 5 million residents. **This project is expected to directly save more than 1,200 lives through earthquake resistant buildings and fully functional services that can undertake rescue in the event of a disaster.** Since the total project investment is €50 million, on average it costs €41,000 to save a life and this compares favorably with the assumed calibrated VSL of €559,488.

20. **Interpretation of Efficiency Parameters and Sensitivity Analysis:** Calculations were performed using excel sheets to estimate the standard project efficiency parameters for the base case scenarios and others. The undiscounted value of the project cost is €43.5 million, whereas the undiscounted value of benefits amounts at €903.6 million for EQ scenario 1 and €2,207.9 million for EQ scenario 2. Applying a discount rate of 5% for a planning horizon of 20 years, the discounted values of cost and associated benefits amount to €37.3 million, €64.5 million (EQ Scenario 1) and €48.3 million (EQ Scenario 2), respectively. The values of Benefit-Cost Ratio (BCR), Net Present Value (NPV), Internal Return Rate (IRR) and Payback Period for both EQ scenarios are reported in the table below

Summary of main CBA indicators

[41] Hallegatte, Stéphane. 2012. A Cost-Effective Solution to Reduce Disaster Losses in Developing Countries: Hydro-Meteorological Services, Early Warning, and Evacuation. Policy Research Working Paper; No. 6058. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/9359 License: CC BY 3.0 IGO

[42] *https://ec.europa.eu/energy/sites/ener/files/documents/ener-buildingseedro_en.pdf*

EQ Scenario	Benefit-Cost Ratio	NPV (€)	IRR (%)	Payback Period (Years)
1	1.73	27,169,574	14.6	11
2	1.30	11,016,795	9.1	15

21. Under both EQ scenarios, the calculated IRR, NPV, B/C and payback periods represent an acceptable investment prospect.

22. When buildings (assets) were dropped off the analysis, the IRR was reduced to 12.7 percent (EQ scenario 1) and 7.1 percent (EQ scenario 2), suggesting that the role of assets in the model is not an indispensable (non-vital) since analysis without assets still yields an acceptable investment endeavor (please see table below: sensitivity analysis). However, when the aspect of lives saved were eliminated in the analysis, the resulting IRR declined to below zero in both EQ scenarios indicating an infeasible investment idea. Therefore, an important feature of this analysis is that the project will not be able to meet efficiency criteria unless the value of lives saved is explicitly taken into account.

Sensitivity Analysis Results for EQ scenario 1 (MRP = 100 years)

Case	B/C Ratio	NPV (€)	IRR (%)	Payback Period (Years)
Base case	1.73	27,169,574	14.6	11
Case without benefits from avoided asset losses	1.57	21,431,050	12.7	12
Case without benefits from lives saved	0.07	-34,707,009	N/A	N/A

Sensitivity Analysis Results for EQ scenario 2 (MRP = 475 years)

Case	B/C Ratio	NPV (€)	IRR (%)	Payback Period (Years)
Base case	1.30	11,016,795	9.1	15
Case without benefits from avoided asset losses	1.15	5,637,316	7.1	17
Case without benefits from lives saved	0.01	-36,778,456	N/A	N/A

Worksheet for Cost Benefit Calculations

No.	Name of the building	Score	Area, sq.m.	Value of bldg. replacem. new (Euro)	Value of equipments (Euro)	Total value (Euro)	Investment cost (Euro) COST	Avoided direct building losses (Euro)	Avoided direct equipm. losses (Euro)	Avoided life losses (Euro)	Avoided fire losses (Euro)	Total avoided losses (Euro) BENEFIT	Undisc. BCR	Year COST	Year BENEFIT	Discount. COST (Euro)	Discount. BENEFIT (Euro)
2	ISUJ Prahova, Mizil	2.0	2,020	1,616,000	795,899	2,411,899	1,300,000	1,500,702	370,796	13,665,492	437,825	15,974,815	12.29	1	2	1,238,095	14,489,628
4	ISUJ Galati, Tecuci	1.8	885	708,000	399,166	1,107,166	700,000	664,199	187,771	18,267,280	497,799	19,617,048	28.02	1	2	666,667	17,793,241
8	ISU Bucuresti Ilfov, Obor	2.4	4,218	3,374,400	1,241,000	4,615,400	3,400,000	2,662,783	500,913	35,793,238	280,256	39,237,190	11.54	1	2	3,238,095	35,589,288
12	Baza pentru Logistică a IGSU	2.4	574	459,200	30,000	489,200	500,000	184,813	6,262	-	-	191,075	0.38	1	2	476,190	173,311
16	ISUJ Arges	2.6	1,872	1,497,600	75,000	1,572,600	1,300,000	156,707	4,191	4,671,724	476,761	5,309,382	4.08	1	2	1,238,095	4,815,766
22	ISUJ Satu Mare, Carei	2.2	1,440	1,152,000	6,500	1,158,500	1,200,000	76,864	231	-	304,879	381,974	0.32	1	2	1,142,857	346,462
5	U.M.0543 TECUCI	1.4	529	423,200	-	423,200	450,000	397,018	-	6,364,175	506,143	7,267,337	16.15	2	3	408,163	6,277,799
1	ISUJ Vrancea	2.0	2,260	1,808,000	140,000	1,948,000	1,800,000	1,138,634	45,297	38,590,677	175,490	39,950,098	22.19	2	3	1,632,653	34,510,397
6.1	ISUJ Galati, Beresti	2.0	255	204,000	2,000	206,000	300,000	175,001	864	1,258,848	434,916	1,869,629	6.23	2	3	272,109	1,615,056
6.2	ISUJ Galati, Beresti	2.2	152	121,600	2,000	123,600	200,000	60,878	520	1,258,848	-	1,320,246	6.60	2	3	181,406	1,140,478
10	ISU Bucuresti Ilfov, Vitan	2.2	2,273	1,818,400	1,200,000	3,018,400	1,700,000	731,848	250,480	46,717,239	313,167	48,012,734	28.24	2	3	1,541,950	41,475,205
13	Baza pentru Logistică a IGSU,	2.2	1,664	1,331,200	30,000	1,361,200	1,200,000	535,766	6,262	-	-	542,028	0.45	2	3	1,088,435	468,224
20	ISUJ Covasna, Tg. Secuiesc	2.2	978	782,400	-	782,400	750,000	532,331	-	1,594,540	149,436	2,276,308	3.04	2	3	680,272	1,966,361
21	ISUJ Caras-Severin, Moldova Noua	2.2	1,098	878,400	140,822	1,019,222	900,000	108,780	9,276	13,987	363,401	495,444	0.55	2	3	816,327	427,983
9	ISU Bucuresti Ilfov, Pregatire	2.4	1,840	1,472,000	20,000	1,492,000	1,300,000	96,343	661	-	-	97,003	0.07	3	4	1,122,989	79,805
19	ISUJ Ialomita	2.4	1,719	1,375,200	150,000	1,525,200	1,200,000	532,878	30,157	16,882,547	307,061	17,752,644	14.79	3	4	1,036,605	14,605,144
27	ISUJ Constanta, Mangalia	2.4	515	412,000	-	412,000	500,000	183,207	-	153,859	174,705	511,772	1.02	3	4	431,919	421,036
11	ISU Bucuresti Ilfov, Damaroaia	2.6	1,106	884,800	1,100,000	1,984,800	900,000	592,951	383,558	23,078,876	257,967	24,313,352	27.01	3	4	777,454	20,002,654
15	ISUJ Vaslui	2.6	1,140	912,000	75,000	987,000	900,000	122,598	5,447	951,129	-	1,079,175	1.20	3	4	777,454	887,840
15	ISUJ Vaslui	2.6	1,793	1,434,400	2,638,000	4,072,400	1,300,000	192,823	191,603	951,129	1,283,537	2,619,093	2.01	3	4	1,122,989	2,154,735
17	ISUJ Argeş, Bradu	2.6	1,299	1,039,200	15,000	1,054,200	1,000,000	314,659	2,360	2,559,657	258,810	3,135,486	3.14	3	4	863,838	2,579,572
3	ISUJ Vrancea, Pompieri Adjud	2.6	397	317,600	-	317,600	400,000	182,460	-	3,776,543	378,178	4,337,181	10.84	3	4	345,535	3,568,210
33	ISUJ Bihor, Salonta	2.6	1,252	1,001,600	55,000	1,056,600	950,000	15,966	449	-	362,910	379,326	0.40	4	5	781,567	297,211
34	ISUJ Arad, Ineu	2.6	315	252,000	5,000	257,000	300,000	5,068	52	-	394,526	399,646	1.33	4	5	246,811	313,133
18	ISUJ Călărasi	2.8	2,892	2,313,600	37,500	2,351,100	2,200,000	198,042	1,650	14,322,890	205,456	14,728,038	6.69	4	5	1,809,945	11,539,803
28	ISUJ Constanta, Port	2.8	1,675	1,340,000	77,029	1,417,029	1,200,000	52,399	1,533	307,718	36,325	397,975	0.33	4	5	987,243	311,824
14	ISUJ Arges, Campulung Muscel	2.8	970	776,000	855,000	1,631,000	800,000	228,905	131,058	713,347	323,720	1,397,031	1.75	4	5	658,162	1,094,610
35	ISUJ Alba, Aiud	2.8	1,282	1,025,600	100,000	1,125,600	950,000	15,419	787	-	278,331	294,538	0.31	4	5	781,567	230,778
7	ISUJ Buzau, Ramnicu Sarat	3.0	1,044	835,200	-	835,200	800,000	137,537	-	23,260,709	357,400	23,755,646	29.69	4	5	658,162	18,613,170
23	ISUJ Brasov, Bod	3.0	1,468	1,174,400	7,500	1,181,900	1,100,000	251,867	839	-	394,957	647,663	0.59	4	5	904,973	507,461
30	ISUJ Botosani	3.0	2,279	1,823,200	5,400,000	7,223,200	1,700,000	65,311	108,672	951,129	195,808	1,320,920	0.78	5	6	1,331,994	985,691
24	ISUJ Brasov,Fagaras	3.0	1,658	1,326,400	5,000	1,331,400	1,200,000	145,030	282	55,949	212,138	413,399	0.34	5	6	940,231	308,485
25	ISUJ Sibiu, Medias	3.0	1,602	1,281,600	75,000	1,356,600	1,200,000	39,275	1,163	13,987	141,960	196,386	0.16	5	6	940,231	146,546
30	ISUJ Botosani	3.2	2,990	2,392,000	1,300,000	3,692,000	2,100,000	68,573	18,640	1,580,553	193,562	1,861,329	0.89	5	6	1,645,405	1,388,952
32	ISUJ Cluj, Turda	3.2	1,936	1,548,800	15,000	1,563,800	1,400,000	22,460	109	41,962	231,184	295,716	0.21	5	6	1,096,937	220,668
26	ISUJ Teleorman, Zimnicea	3.4	1,728	1,382,400	-	1,382,400	1,500,000	44,335	-	83,923	255,487	383,745	0.26	5	6	1,175,289	286,357
31	ISUJ Harghita, Toplita	3.8	2,900	2,320,000	120,000	2,440,000	2,200,000	12,642	328	-	363,109	376,079	0.17	5	6	1,723,758	280,636
29	ISUJ Dolj, Bailesti	4.0	852	681,600	140,000	821,600	700,000	5,343	549	55,949	333,469	395,310	0.56	5	6	548,468	294,986
			56,870	45,496,000	16,252,416	61,748,416	43,500,000	12,452,418	2,262,761	257,937,905	10,880,675	283,533,759				37,330,842	242,208,504

ANNEX 5. PRIORITIZATION METHODOLOGY OF GIES BUILDINGS

1. The Ministry of Internal Affairs (MoIA), Department of Emergency Services (DES), General Inspectorate for Emergency Services and the World Bank Team[43] have developed a methodology for prioritization of the emergency response facilities to be included under the Disaster Risk management Project (P166302), which will be implemented by MoIA, through DES and the GIES with a total budget of €50 Million. Component 1 of the Project is dedicated for "Improving seismic resilience of disaster and emergency response infrastructure" and has a proposed allocation of €43.5 million. This component aims to improve the seismic safety of critical disaster and emergency response buildings through investments in building infrastructure and structural strengthening. Improvements will also consider resilience of the building and critical systems such as energy, water and communications to other natural hazards and achieving universal access and gender standards.

2. The MoIA, through DES/GIES, has provided a tentative list of 35 buildings to be considered for financing in this project. The Bank team, in consultation with DES/GIES, developed a prioritization framework be applied to these 35 buildings to have a ranking according to a brief set of objective criteria, such as seismic risk, and importance of the building in the emergency management system. The list of the 35 buildings is provided in Annex 5A.

3. The following agreed prioritization framework was applied, focusing on the following aspects:

(a) A data sheet, developed by the Bank team, was completed DES/GIES for each building. The data sheet requested core building structural and functional information, which is relevant for the building prioritization process (building data sheet is provided in Annex 5B). DES/GIES filled-up the building data sheets in due time and the information was provided to the WB team, as agreed.

(b) The prioritization approach developed by the Bank team, in consultation with DES/GIES, employs a weighted ranking system of the 35 buildings based on seismic risk and building's strategic importance in the system of emergency situations' management (prioritization approach is provided in Annex 5C).

(c) The information on the 35 buildings provided in the building data sheets was fed in the prioritization approach to get the ranking of the buildings (Annex 5D).

4. To speed up the retrofitting or reconstruction process within the project, GIES will prepare the necessary technical documents for a first batch of six buildings, ranked high on the prioritization list. This will be done using Government funds, before the project starts. The six selected buildings are highlighted in Annex D. Technical documents for the other buildings will be prepared using Bank financing once the project starts. The Bank team is supporting DES/GIES in preparing draft ToRs for Technical Surveys of Prioritized Buildings for review and no-objection.

5. The MoIA, by way of DES/GIES, shall initiate the development of necessary technical documents for the first batch of buildings to be launched - ranked the highest in the prioritization process to be undertaken – utilizing Government's own funds. For the technical documents to be

[43] The World Bank team also includes the UTCB Team. Earthquake data and analysis for the prioritization has been carried out by the UTCB Team.

considered acceptable, the Terms of Reference of such technical services will need to be reviewed by the World Bank technical team for clearance, before proceeding with procurement of the services. The World Bank team already recommended the DES/GIES consider the following requirements in the scope of the technical services:

a. The fundamental requirements of seismic assessment for the existing buildings and the fundamental requirements of seismic design for the retrofitting solutions must be performed with consideration of the ground motion with 20% probability of exceedance in 50 years (225 years mean return period) for life safety requirement;

b. The retrofitted and/or rehabilitated buildings must be fully operational after the design earthquake. This can be achieved by using the seismic action with 225 years mean return period for life safety requirement, amplified by the importance and exposure factor of 1.4, as requested by the Romanian seismic design code in force.

6. The World Bank team and MoIA have agreed that when defining the needs of upgrading of each building per current normative documents, DES/GIES should also consider the future functionality requirements, including full operational capacity in case of design earthquake, electrical, mechanical systems, gender aspects, environmental and social safeguards, universal access, etc. It has also been noted that buildings identified to be in floods and landslide-prone areas (based on the information provided in the data sheets) are excluded from the initial prioritization process.

ANNEX 5A. LIST OF ESTIMATED 35 BUILDINGS PROVIDED BY DES/GIES

No.	Name of the building	Address	Area		Year of construc
			Built Area,	Total Floor	
1	Sediul Inspectoratului pentru Situații de Urgență al Județului Vrancea și Detașamentul de Pompieri Focșani	Strada Dornișoarei, nr.10, Municipiul Focșani, JudeţulVrancea	221	567	1950
			651	1303	1950
2	Detașamentul de Pompieri Mizil	Strada Ștefan cel Mare, nr.6, Orașul Mizil, Județul Prahova	804	804	1908
3	Secția de Pompieri Adjud	Strada Islaz, nr.2, Orașul Adjud, JudeţulVrancea	397	397	1975
4	Secția de Pompieri Tecuci	Strada 1 Decembrie 1918, nr. 27A , Municipiul Tecuci, Județul Galați	376	376	1893
			353	353	1893
			247	247	1893
5	Unitatea Militară 0543 Tecuci	Strada Fundatura Militari, nr. 2, Orașul Tecuci, Județul Galați	529	529	1897
6	Garada de Intervenție Berești	Strada Drumul Taberei, nr. 2, Orașul Berești, Județul Galați	255	255	1929
			152	152	1950
7	Detașamentul de Pompieri Râmnicu Sărat	Strada Crângul Mieilor, nr. 85, Oraș Râmnicu Sărat, Județul Buzău	348	1044	1994
8	Detașamentul de Pompieri Obor	Bulevardul Ferdinand I, nr. 139, Sector 2, București	1061	2938	1934
			427	1631	1934
9	Centrul de Pregătire al Pompierilor	Șoseaua Gării Cațelu, nr.57, Sector 3, Bucuresti	460	1840	1999
10	Detașamentul de Pompieri Vitan	Strada Breaza, nr.79, Sector 3, București	1303	2273	1951
11	Detașamentul de Pompieri Dămăroaia	Strada Piatra Morii, nr.23-25, Sector 1, București	553	1106	1971
12	Sediul Bazei pentru Logistică din cadrul Inspectoratului General pentru Situații de Urgență	Bulevardul Iuliu Maniu, nr. 63, Sector 6, București	287	574	1961
13	Sediul 2 al Inspectoratului General pentru Situații de Urgență	Strada Ceasornicului, nr. 19, Sector 1, Bucureștii	782	1664	1946
14	Detașamentul de Pompieri Câmpulung Muscel	Strada Ion Mihalache, nr.20, Municipiul Câmpulung, Judeţul Argeș	485	970	1961
15	Sediul Inspectoratului pentru Situații de Urgență al Județului Vaslui și Detașamentul de Pompieri Vaslui	Strada Castanilor, nr. 9, Municipiul Vaslui, Județul Vaslui	250	750	1976
			621	1242	1976
16	Sediul Inspectoratului pentru Situații de Urgență al Județului Argeș și Detașamentul de Pompieri Pitești	Strada Traian, nr.26, Municipiul Pitești, Judeţul Argeș	443	1329	1978

17	Detaşamentul de Pompieri Bradu	Strada Staționarului, nr.3, Comuna Bradu, Judeţul Argeș	1299	1299	1964
18	Sediul Inspectoratului pentru Situații de Urgență al Județului Călărași și Detașamentul de Pompieri Călărași	Strada Bucureşti, nr. 344, Municipiul Călăraşi, Județul Călărași	512	2476	1986
19	Sediul Inspectoratului pentru Situații de Urgență al Județului Ialomița și Detașamentul de Pompieri Slobozia	Strada Lacului, nr. 23, Municipiul Slobozia, Județul Ialomiţa	573	1146	1970
20	Secția de Pompieri Târgu Secuiesc	Strada Ady Endre, nr. 13, Municipiul Târgu Secuiesc, Județul Covasna	326	652	1905
21	Secția de Pompieri Moldova Nouă	Strada Nicolae Bălcescu, nr. 99, Oraş Moldova Nouă, Judeţul Caraş-Severin	549	1098	1976
22	Secția de Pompieri Carei	Strada Independenţei, nr. 28, Municipiul Carei, Județul Satu Mare	480	480	1900
23	Pichetul de Pompieri Bod	Strada Tudor Vladimirescu, nr. 52, Comuna Bod(Sat Bod), Judeţul Braşov	600	1468	1951
24	Detașamentul de Pompieri Făgăraș	Strada Luncii, nr. 2, Oraşul Făgăraș, Județul Brașov	829	1658	1976
25	Detașamentul de Pompieri Mediaș	Strada Pompierilor, nr. 5, Municipiul Mediaș, Județul Sibiu	482	1602	1970
26	Detașamentul de Pompieri Zimnicea	Strada Republicii, nr. 44, Orașul Zimnicea, Județul Teleorman	864	1728	1978
27	Detașamentul de Pompieri Mangalia	Șoseaua națională Constanța-Mangalia, Municipiul Mangalia, Județul Constanța	515	515	1935
28	Detașamentul de Pompieri Constanța-Port	Poarta nr. 5, Incinta Port, Municipiul Constanța, Județul Constanța	335	1,675	1976
29	Secția de Pompieri Băilești	Strada Independenței, nr.16, Municipiul Băilești, Județul Dolj	434	852	1988
30	Sediul Inspectoratului pentru Situații de Urgență al Județului Botoșani și Detașamentul de Pompieri Botoșani	Strada Uzinei, nr. 3, Municipiul Botoșani, Județul Botoșani	606	2392	1983
			1093	1196	1983
31	Garada de Intervenție Toplița	Strada Gării, nr. 4, Municipiul Toplița, Județul Harghita	1227	2657	1970
32	Detașamentul de Pompieri Turda	Strada Calea Victoriei, nr. 1, Municipiul Turda, Judeţul Cluj	968	1936	1959
33	Detașamentul de Pompieri Salonta	Strada Calea Aradului, nr. 39, Municipiul Salonta, Județul Bihor	631	661	1920
34	Detașamentul de Pompieri Ineu	Strada Mihai Eminescu, nr. 35, Oraș Ineu, Județul Arad	295	315	1924
35	Detașamentul de Pompieri Aiud	Strada Cuza Vodă, nr. 33, Municipiul Aiud, Județul Alba	522	1282	1920

ANNEX 5B. BUILDINGS' DATA SHEET

Name of the building *Numele clădirii*		
Neighbour buildings *Clădiri învecinate*	☐Independent building *clădire independentă* ☐Part of a building agregate *parte dintr-un ansamblu de clădiri*	
Section number (if a building has two or more different sections, one form should be completed for each section.) *Numărul tronsonulu (dacă o clădire are mai multe tronsoane, se completează câte un formular pentru fiecare tronson)*		
Functionality *Destinația clădirii*		
Redundancy *Redundața (funcțiunile clădirii pot fi suplinite de alte clădiri în cazul avarierii grave)*		☐Yes ☐No
Owner and administrator *Proprietar și administrator*		
Address *Adresa*		
Location is exposed to flood or landslide hazard *Amplasamentul este expus inundațiilor sau alunecărilor de teren*		☐Fact ☐Estimate ☐Yes ☐No
Number of floors (above ground) *Numărul de etaje (Suprateranе)*		
Built area (footprint of the building) *Aria construită a clădirii*		☐Fact ☐Estimate
Total floor area *Aria totală (desfășurată) a clădirii*		☐Fact ☐Estimate
Number of underground floors *Numărul de subsoluri*		
Year of construction *Anul construcției*		☐Fact ☐Estimate
Type of partition walls *Tipul pereților de compartimetare și închidere* (Masonry, adobe, dry-walls, prefabricated concrete panels, glass, other / *Zidărie, paiantă, gips-carton, pereți prefabricați de beton, sticlă, altul)*	☐Fact ☐Estimate	

Type of structural system *Tipul sistemului structural* (Unreinforced masonry, masonry with concrete elements, monolithic concrete structure, prefabricated concrete structures, steel, wood, other/ *Zidărie simplă, zidărie cu elemente de beton, strucură din beton monolit, structură din beton prefabricate, oțel, lemn, altul)*	☐Fact ☐Estimate	
Type of flooring system *Tipul planșeului* (Concrete, wood, steel, composite *Beton, lemn, oțel, compozit)*	☐Fact ☐Estimate	
Number of personnel per shift, by gender *Numărul de personae care lucrează în clădire într-un schimb, pe sex*		☐Fact ☐Estimate Female: *femei* Male: *Bărbați*
Number of shifts: *Numărul de schimburi*		
Number of trucks (fire trucks, ambulances, etc.) *Numărul mașinilor (mașini de pompieri, ambulanțe)*		
Number of served people *Populația deservită de clădire*		☐Fact ☐Estimate
Cultural heritage *Monument istoric*		☐Yes ☐No
Nonstructural upgrades *Intervenții asupra componentelor nestructurale* (Repairing of partition walls, flooring system, building envelope, roof, plumbing, electrical system, heating system, others *Reparații pereți de compartimentare, pardoseli, anvelopa clădiri, acoperiș, instalații sanitare, instalații electrice, ystem de încălzire, altele)*	☐Fact ☐Estimate Year(s): Description of upgrades:	

Structural upgrades *Intervenții asupra structurii* (Extended works on structural system, local interventions on structural elements *Intervenții de ansamblu asupra sistemului structural, intervenții locale asupra elementelor structurale*)	☐Fact ☐Estimate Year(s): Description of upgrades:
List of available technical documents about the building *Lista documentelor tehnice disponibile referitoare la clădire (de exemplu, expertize tehnice, proiectul original, cartea construcției, relevee, documente cadastrale etc.)*	
Photos of all facades *Fotografii ale tutuor fațadelor*	

ANNEX 5C. PRIORITIZATION METHODOLOGY

Seismic hazard of building site and seismic vulnerability and exposure/importance of building are included in the prioritization matrix. The following parameters are considered for prioritization:

1) Seismic hazard – design horizontal peak ground acceleration according to the seismic design code in force in Romania, P100-1/2013
2) Year of construction of building: before 1900, between 1901-1939 (prior to November 10, 1940 Vrancea earthquake), between 1940-1977 (prior to March 4, 1977 Vrancea earthquake), after 1977
3) Structural system: URM+FF, URM+RF, RM+RF, RC+RF or S+RF (URM: unreinforced masonry, RM: reinforced masonry, RC: reinforced concrete, S: steel, FF: flexible floors, RF: rigid floors)
4) Importance in the disaster management system (relative score for the proposed buildings)

The values of parameters 1, 2, 3 were decided by the UTCB (Technical University of Bucharest) team based on the data sheet of each. The value of parameter 4 was decided by DES/GIES staff. Buildings exposed to flood or landslide risk are not included in the project.

The prioritization matrix is presented hereinafter:

Parameter				
Seismic hazard - design horizontal peak ground acceleration, a_g	≥0,35g	0,3g or 0,25g	0,20g	≤0,15g
Score	1	2	3	4
Year of construction	<1900	1901-1939	1940-1977	>1977
Score	1	2	3	4
Structural type	URM+FF	URM+RF	RM+RF	RC+RF or S+RF
Score	1	2	3	4
Importance in the disaster management system	High importance at national level	High importance at regional level	High importance at local level	Regular importance at local level
Score	1	2	3	4
Total score:				

The weighting factors of the four parameters are as follows: a) seismic hazard – 0.2; b) year of construction – 0.2; c) structural type – 0.2; d) importance in the disaster management system – 0.4. The final score is the weighted average of the values of the four parameters. The buildings with low scores have high priority for technical surveys. The buildings with high scores have low priority for technical surveys.

ANNEX 5D. RANKING OF THE 35 BUILDINGS

No.	Name of the building	Address	Year	PGA	Structure	Importance	Score	Surveyed 2016, 2017	First batch	Comments
			Weighting factor							
			0.2	0.2	0.2	0.4				
1	ISUJ Vrancea Sediul Inspectoratului Județean și Detaşamentul de Pompieri Focşani	Str. Dornişoarei, nr. 10, Focşani	3	1	2	2	2			
2	ISUJ Prahova Detaşamentul de Pompieri Mizil	Str.Ștefan cel Mare, nr.6, Mizil	2	1	1	3	2	x	X	Surveyed 2003, demolition decision
3	ISUJ Vrancea Secţia Pompieri Adjud	Str. Izlazul, nr. 2, Adjud	3	1	3	3	2.6			
4	ISUJ Galați Sediu Secţia de Pompieri Tecuci	Str. 1 Decembrie 1918, nr. 27A, Tecuci	1	1	1	3	1.8	x	X	Surveyed 2016, must be updated
5	U.M.0543 TECUCI Depozitul de Rezerve Proprii TECUCI	Str.Fd.Militari, nr.2, Tecuci, Jud.Galaţi	1	1	1	2	1.4			
6.1	ISUJ Galați Garda de Intervenţie Bereşti	Str. Drumul Taberei nr. 2, Bereşti	2	1	1	3	2			
6.2	ISUJ Galați Garda de Intervenţie Bereşti	Str. Drumul Taberei nr. 2, Bereşti	3	1	1	3	2.2			

			Weighting factor							
			0.2	0.2	0.2	0.4				
No.	Name of the building	Address	Year	PGA	Structure	Importance	Score	Surveyed 2016, 2017	First batch	Comments
			Weighting factor							
			0.2	0.2	0.2	0.4				
7	ISUJ Buzău Detașamentul de Pompieri Rîmnicu Sărat	Str. Crângul Meiului, nr. 85, Rîmnicu Sărat	4	1	4	3	3			
8	ISU București Ilfov Detașamentul de Pompieri Obor	Str. B-dul. Ferdinand I, nr. 139, Sector 2, București	2	2	4	2	2.4	x	X	Surveyed 2014, new survey under development
9	ISU București Ilfov Centrul de Pregătire al Pompierilor	Șos. Găriii Cățelu, nr. 57, sector 3	4	2	4	1	2.4			
10	ISU București Ilfov Detașamentul de Pompieri Vitan	Str. Breaza, nr. 79, Sector 3, București	3	2	2	2	2.2			
11	ISU București Ilfov Detașamentul de Pompieri Dămăroaia	Str. Piatra Morii, nr. 23-25, Sector 1, București	3	2	4	2	2.6			
12	Baza pentru Logistică a IGSU Sediul Baza pentru Logistică a IGSU	B-dul. Iuliu Maniu, nr.63, București,	3	2	3	2	2.4	x		
13	Baza pentru Logistică a IGSU Sediul 2 al IGSU	Str. Ceasornicului, nr.19, sector 1, București	3	2	2	2	2.2			
14	ISUJ Argeș Detașamentul de Pompieri Câmpulung Muscel	Str.Ion Mihalache, nr.20, Câmpulung Muscel	3	2	3	3	2.8	x		

			Weighting factor							
			0.2	0.2	0.2	0.4				
No.	Name of the building	Address	Year	PGA	Structure	Importance	Score	Surveyed 2016, 2017	First batch	Comments
			Weighting factor							
			0.2	0.2	0.2	0.4				
15.1	ISUJ Vaslui Sediul Inspectoratului Județean și Detaşamentul de Pompieri Vaslui	Str. Castanilor, nr. 9, Vaslui	3	2	4	2	2.6	x		
15.2	ISUJ Vaslui Sediul Inspectoratului Județean și Detaşamentul de Pompieri Vaslui	Str. Castanilor, nr. 9, Vaslui	3	2	4	2	2.6			
16	ISUJ Argeș Sediul Inspectoratului Județean și Detaşamentul de Pompieri Pitești	Str.Traian nr.26, Pitești	3	2	4	2	2.6	x	X	Surveyed 2016, must be updated
17	ISUJ Argeş Detaşamentul de Pompieri Bradu	Str. Staţionarului, nr. 3, Bradu	3	2	2	3	2.6			
18	ISUJ Călărași Sediul Inspectoratului Județean și Detaşamentul de Pompieri Călărași	Str. Bucureşti nr. 344, Călăraşi	4	2	4	2	2.8	x	X	Surveyed 2016, must be renewed
19	ISUJ Ialomița Sediul Inspectoratului Județean și Detaşamentul de Pompieri Slobozia	Str. Lacului, nr.23, Slobozia	3	2	3	2	2.4			
20	ISUJ Covasna Detașamentul de Pompieri Tg. Secuiesc	Str. Ady Endre, nr. 13, Tg. Secuiesc	2	2	1	3	2.2	x		

No.	Name of the building	Address	Year	PGA	Structure	Importance	Score	Surveyed 2016, 2017	First batch	Comments
			Weighting factor							
			0.2	0.2	0.2	0.4				
21	ISUJ Caraș-Severin Secţia de Pompieri Moldova Nouă	Str. Nicolae Bălcescu, nr. 99, Moldova Nouă,	1	2	2	3	2.2			
22	ISUJ Satu Mare Secţia de Pompieri Carei	Str. Independenţei, nr.28, Carei	1	3	1	3	2.2		X	Governmental decision for demolition (to be provided by IGSU)
23	ISUJ Braşov Pichetul de pompieri Bod	Str. Tudor Vladimirescu nr.62, Bod	3	3	1	4	3			
24	ISUJ Braşov Detașament Făgăraș	Str. Luncii, nr.2, Făgăraș	3	3	3	3	3			
25	ISUJ Sibiu Detașamentul de Pompieri Mediaș	Str. Pompierilor, nr. 5, Mediaș	3	3	3	3	3			
26	ISUJ Teleorman Detașamentul de Pompieri Zimnicea	Str. Republicii, nr. 44, Zimnicea	4	3	4	3	3.4			
27	ISUJ Constanța Secția de Pompieri Mangalia	Str. DN Constanța, Mangalia (Stațiunea Neptun)	2	3	1	3	2.4			
28	ISUJ Constanța Detașament de Pompieri Port	Poarta nr. 5, Incinta Port, Constanța	3	3	4	2	2.8			

No.	Name of the building	Address	Weighting factor 0.2 Year	Weighting factor 0.2 PGA	Weighting factor 0.2 Structure	Weighting factor 0.4 Importance	Score	Surveyed 2016, 2017	First batch	Comments
			Weighting factor							
			0.2	0.2	0.2	0.4				
29	ISUJ Dolj Sediu Secţia de Pompieri Băileşti	Str. Independenţei, nr. 16, Băileşti	4	4	4	4	4			
30.1	ISUJ Botoșani Detaşament Botoșani	Str. Uzinei, nr.3, Botoșani	4	4	4	2	3.2	x		
30.2	ISUJ Botoșani Detaşament Botoșani	Str. Uzinei, nr.3, Botoșani	4	4	3	2	3			
31	ISUJ Harghita Garda de intervenție Toplița	Str. Gării, nr.4, Toplița	3	4	4	4	3.8			
32	ISUJ Cluj Detaşament Turda	Str. Calea Victoriei, nr.1, Turda	3	4	3	3	3.2			
33	ISUJ Bihor Detașamentul de Pompieri Salonta	Str. Calea Aradului,nr. 39, Salonta	2	4	1	3	2.6			
34	ISUJ Arad Sediu Detaşament de pompieri Ineu	Str. Mihai Eminescu, nr. 35, Ineu	2	4	1	3	2.6			
35	ISUJ Alba Sediu Detaşament de pompieri Aiud	Str. Cuza-Vodă, nr. 33, Aiud	2	4	2	3	2.8			

ANNEX 6: ROMA FILTER

Questionnaire for Financing Operations (IPF)

1. Basic Information	
Project Name	Strengthening Disaster Risk Management in Romania IPF
Project Number	P166302
TTL	Alanna Leigh Simpson, Elif Ayhan;
Social Development Specialist	Mohamed Ghani Razaak
Date Questionnaire was Updated	April 26, 2018
Implementation Status	Preparation

2. Roma Targeting	
Questions	**Answers**
2.1 Does the project *explicitly* target Roma?	Yes **[ ]** No **[X]** Not determined yet[2] **[ ]** (If yes, how is it stated in the project objective? What is the number of target Roma beneficiaries? If the project is already under implementation or has been completed, what is the actual number of Roma beneficiaries?)
2.2 Does the project *explicitly* target marginalized and/or disadvantaged groups in general? (but does not explicitly target Roma)	Yes **[ ]** No **[X]** Not determined yet **[ ]** (If yes, how is it stated in the project objective?)
2.3 Are Roma issues relevant to this project and its components?	Yes **[X]** No **[ ]** Unknown **[ ]** Need further analysis[3] **[ ]** Appropriate communication with Roma population is very important for preparedness and efficient response. Therefore communication activities and materials produced under the project should consider Roma specific aspects and should also be provided in Romani where possible. The project should also bring equal participation opportunities for training and other outreach activities.
3. Analysis	
Questions	**Answers**
3.1 Does the operation identify and analyze Roma issues relevant to its objectives or components? Have you analyzed how the operation could possibly affect Roma differently from the rest of population?	Yes [ ] No [X] (You can tick yes by responding yes or no to Questions 3.2-3.15 below. If you decide to tick no, explain why the analysis of Roma issues was not considered relevant to the project, and why/how this was determined.)
3.2 Could Roma possibly be affected negatively by the project?	Yes [ ] No [X] Unknown [ ] Need further analysis [ ] (If yes, explain) (If no, skip to question 3.4)

[2] Depending on the status of the activity in the project cycle (e.g. in preparation phase), you may not be able to respond to some of questions with a definitive "Yes" or "No" answer. You can tick "Not determined yet" in such cases, but you are expected to eventually update the response with a "Yes" or "No" answer as the activity takes a more concrete form.

[3] If you have ticked "unknown" to any of the questions in this questionnaire, you also have an option of ticking "Need further analysis". This will help alert task teams about pending analytical needs. Once the analysis is carried out, the response to the question should be updated with a "Yes" or "No" answer. Activities that have already been in implementation, and especially if approaching completion, it may not be practical to carry out further analysis to determine a definitive answer to some questions. In such cases, you might not want to tick "Need further analysis".

3.3 If Roma could possibly be affected negatively, have you identified mitigation measures?	Yes **[ ]** No **[ ]** Need further analysis **[ ]** N/A **[X]** (no neg. impact anticipated) (If yes, explain the mitigation measures)
3.4 Would Roma possibly face specific challenges in benefiting from the operation?	Yes **[ ]** No **[X]** Unknown **[]** Need further analysis **[ ]** (If yes, explain) (If no, skip to question 3.6)
3.5 If Roma possibly face specific challenges in benefitting from the project, have you identified measures to increase/ensure their benefits?	Yes **[ ]** No **[ ]** Need further analysis **[ ]** N/A **[X]** (no specific challenges anticipated) (If yes, explain the measures)
3.6 Could the project possibly generate or increase frictions or conflicts between Roma and non-Roma (or among Roma)?	Yes **[ ]** No **[X]** Unknown **[ ]** Need further analysis **[ ]** (If yes, explain the potential triggers and implications) (If no, skip to question 3.8)
3.7 If the project could possibly generate or increase frictions or conflicts, have you identified measures to avoid it?	Yes **[ ]** No **[ ]** Need further analysis **[ ]** N/A **[X]** (no potential friction or conflict) (If yes, explain the measures)
3.8 What other relevant findings about Roma issues do the social impact assessments or other diagnostics relevant to the project report?	
3.9 What further analysis might be required to provide answers to the above questions?	
3.10 Have Roma and/or Roma NGOs been consulted to discuss potential impacts of the operation on them and hear their concerns?	Yes **[X]** No **[ ]** Need consultation **[]** 1.95. The Program was also presented for discussion and consultations with the Roma Sounding Board on 4 April 2018
3.11 Have Roma and/or Roma NGOs had particular concerns or questions about the project?	Yes **[X]** No **[ ]** N/A **[]** (not consulted). Issues were raised on how to improve awareness and action on disaster preparedness and early warnings, especially for vulnerable populations. Moreover, concerns were raised on the lack of visible progress to reduce the number of "Red Dot" or Class 1 seismic risk structures in Bucharest, and overall how to improve resilience to natural hazards across the country
3.12 Have Roma and/or Roma NGOs expressed specific needs or preferences?	Yes **[X]** No **[ ]** N/A **[]** (not consulted). They would be interested to have communications about disaster risk and preparedness in Romani language to ensure greater action.
3.13 Have regional or local authorities been consulted to hear their perspectives on how the project could affect Roma and contribute to their social inclusion, especially in the context of community based, integrated approaches?	Yes **[ ]** No **[ ]** Need consultation **[X]** (If yes, explain the perspectives) (Local authorities are expected to have insights on the impact of Roma- targeted projects, especially in the context of community-led projects and integrated approaches towards social inclusion)
3.14 Is there particular	Yes **[X]** No **[ ]** Unknown **[]** Need further analysis **[ ]**

information related to the project that needs to be communicated to Roma (in a specific manner)?	(If yes, explain the communication needs)
3.15: Does the project design reflect the results of consultations with Roma/Roma NGOs and local authorities?	Yes **[ ]** No **[ ]** N/A **[X]** Project design did not change based on conversations with Roma sounding board.
4. Actions	
Questions	Answer
4.1: Does the operation include specific or targeted actions that address the needs of the Roma?	Yes **[ ]** No **[X]** Not determined yet **[]** (If yes, explain what specific needs were addressed, and through what exact actions)
4.2: Does the operation include interventions that are expected to narrow existing disparities between Roma and non-Roma?	Yes **[ ]** No **[X]** Not determined yet **[]** [If yes, explain what are the existing disparities, what are the interventions that narrow them, and how they work (what causes, factor, challenges, or impediments do they address)]
4.3: Does the operation include specific or targeted actions to increase the benefits of the project to the Roma?	Yes **[X]** No **[ ]** Not determined yet **[X]** Some communication materials will be prepared in Romani to increase uptake.
4.4: Does the operation propose Roma specific safeguards in a social/environmental assessment or in a resettlement framework?	Yes **[ ]** No **[X]** Not determined yet **[]** (If yes, explain below the specific safeguards for Roma, why it is required, and what measures are proposed)
5. M&E	
Questions	Answer
5.1: Does the operation have Roma specific indicators? (Indicators only applicable to Roma)	Yes **[ ]** No **[X]** Not determined yet **[]** (If yes, what are the indicators? What are the sources of data? How frequently are they monitored? Can you share the most recent data?)
5.2: Does the operation include indicators in the results framework disaggregated by ethnicity?	Yes **[ ]** No **[X]** Not determined yet **[]** (If yes, what are the indicators? Can you share the most recent data?)
5.3: If the operation includes indicators disaggregated by ethnicity, are there Roma specific baseline and target values?	Yes **[ ]** No **[ ]** N/A **[X]** (no relevant indicators)
5.4: Does the operation propose an evaluation, which will analyze Roma-specific impacts of the operation?	Yes **[ ]** No **[X]** Not determined yet **[]** (If yes, explain What impacts will be analyzed, and what the indicators are. Also explain whether the impacts are analyzed in relation to non-Roma?)

COUNTRY MAP


ROMANIA
DISASTER RISK MANAGEMENT PROJECT
CITIES AND TOWNS
COUNTY (JUDET) CAPITALS
NATIONAL CAPITAL
MAIN ROADS
RAILROADS
COUNTY (JUDET) BOUNDARIES
INTERNATIONAL BOUNDARIES
UKRAINE
HUNGARY
MOLDOVA
SERBIA
BULGARIA
BOTOŞANI
SUCEAVA
MARAMUREŞ
SATU MARE
BISTRIŢA-NĂSĂUD
IAŞI
SĂLAJ
CLUJ
BIHOR
NEAMŢ
MUREŞ
HARGHITA
BACĂU
VASLUI
ALBA
ARAD
COVASNA
SIBIU
BRAŞOV
VRANCEA
GALAŢI
TIMIŞ
HUNEDOARA
BUZĂU
VÂLCEA
GORJ
CARAŞ-SEVERIN
PRAHOVA
BRĂILA
TULCEA
ARGEŞ
DÂMBOVIŢA
ILFOV
IALOMIŢA
BUCUREŞTI
MEHEDINŢI
OLT
TELEORMAN
GIURGIU
CĂLĂRAŞI
CONSTANŢA
DOLJ
Black Sea
0 25 50 75 100 Kilometers
0 25 50 75 Miles