



## THE ROLE OF THE PUBLIC SECTOR IN CATASTROPHIC RISK MANAGEMENT

Cristina Ciumas<sup>1</sup>, Ramona Alexandrina Coca, Diana-Maria Chis<sup>2</sup>

<sup>1</sup> Faculty of Economics and Business Administration, Finance Department, Babes-Bolyai University, Romania, [Cristina.ciumas@econ.ubbcluj.ro](mailto:Cristina.ciumas@econ.ubbcluj.ro)

<sup>2</sup> Faculty of Economics and Business Administration, Finance Department, Babes-Bolyai University, Romania, [ramona.coca@econ.ubbcluj.ro](mailto:ramona.coca@econ.ubbcluj.ro)

<sup>3</sup> Faculty of Economics and Business Administration, Finance Department, Babes-Bolyai University, Romania, [dianamaria.chis@yahoo.com](mailto:dianamaria.chis@yahoo.com)

**Abstract** *This paper approaches the impact of natural catastrophes on budget balance and also the principal methods of disaster risk management. Taking into account Romania's exposure to flood risk and earthquake risk we'll pay a special attention to these two categories. We'll analyze how public sector is involved in managing catastrophic risk both in our country but also in other Member States of European Union. After identifying public institutions responsible for an appropriate management of catastrophes consequences three types of actions will be presented: preventive, operational and recovery actions. Also, the steps taken by our country in order to align to European regulation will be discussed. Given the impact of extreme events in most cases local financial capacity is exceeded. The Member States can access European Solidarity Fund, the conditions of applying for intervention being presented. A numerical illustration will be provided for a better image on the budget that management of catastrophic risk involves.*

**Key words:**

Public institutions,  
Intervention Fund,  
European Solidarity  
Fund

**JEL Codes:**

H/1

### 1. INTRODUCTION

Romania is ranked 82 from a total of 173 countries as regards the natural catastrophic risk (cat risk). When this ranking was realized the structural susceptibility was considered and also the management capacity of a natural catastrophe and the exposure to natural hazards. If we take into account only Europe, Romania is the fourth country being outrun only by Albania, Serbia and Greece. (Beck et al., 2012).

The main catastrophes that threaten Romania are earthquakes and floods. Even if the floods are characterized by a higher frequency the biggest losses were caused by earthquake.

Once identified the main risks that can affect our country we'll continue by presenting the responsible institutions for an appropriate management of consequences. We consider important the presentation of the reserve funds at the disposal of the Government beyond the preventive actions such as development of structural protection measures; operational

actions: whose aim is a proper management of emergency situations and recovery actions: immediate response for ensuring the main needs of affected people.

When it comes to state implication in cat risk management we refer primarily to Government which has an extremely important role through programs whose purpose is the control of the consequences of such events by reducing the likelihood of these risks.

### 2. THE RESERVE FUNDS AT THE DISPOSAL OF THE GOVERNMENT

As a catastrophe generates a series of urgent expenditures in accordance to the Law no. 500/2002 of public finances in the annual budget of each year is included the Intervention Fund at the disposal of the Government, these amounts having a special purpose: financing urgent actions in order to remove the effects of natural catastrophes and support the affected persons. The Reserve Fund at the disposal of the Government is also mandatory to be established

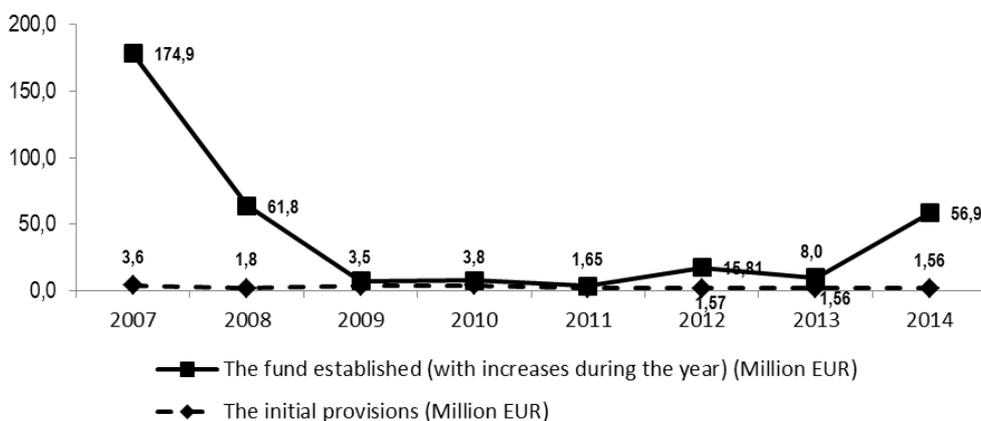
annually, but its allocation is made for some urgent and unforeseen expenditure incurred during the year. These two funds are categories of the Reserve Funds, with the mention that the Reserve fund has wider coverage regarding the situations when the money is released. Also, if the circumstances require, during the year amounts from the Reserve fund can be transferred to the Intervention Fund. Further we'll focus only on Intervention Fund aiming to illustrate the whole process by identifying: the manner of establishment, the way of amounts release, the responsible persons for damage assessment and means of monitoring and verification of the allocations. (Law 500/2002).

Regarding the size of the Fund there is no exact regulation, being necessary to avoid falling into extreme: a too small fund may lead to the impossibility of a proper management in case of a catastrophic event; on the opposite side an oversized fund could mean conferring to Government a greater authority in

hiring excessive expenditures without Parliament's approval. In other countries the level of the reserve funds varies between 1% and 3% of the total government expenditures, this limit being established by Parliament, which continuously monitors the distribution thereof.

When it comes to the amounts allocated to Intervention Fund we can observe in Fig.1 their evolution, being presented both the initial provisions and also the effective funds at the end of the year. We can notice that during 2009-2011 the level established at the beginning of the year wasn't modified during the year. The greatest difference was recorded in 2007, when the increase was around 50 times, from 3,6 millions of EUR to 174,9 millions of EUR. When there no major catastrophes that require the intervention of the Government occurs the Intervention Fund should not increase in course of the year.

Fig1. The evolution and the amount allocated to Intervention Fund during 2007-2014



(Source: Authors' processing based on Annual Reports of Romanian Court of Accounts, 2008-2012)

The distribution of the amounts is realized based on Government decisions through main budgetary authorizing officers having an explanatory note attached. These should contain information regarding the catastrophic event, the value of damages, and the number of affected persons. There were identified certain cases when in these explanatory notes was not

mentioned the exact amount released from the Intervention Fund being used the phrase „allocation of certain amounts”. With the exception of 2008 the largest amounts were distributed to main central budgetary authorizing officers.

Table 1. The distribution of the allocated fund between main budgetary authorising officers (central and local)

| Year/The fund allocated(Millions of Euro)                | 2007  | 2008  | 2009  | 2010  | 2011 | 2012  |
|--|-------|-------|-------|-------|------|-------|
| Main budgetary authorising officers(Millions of Euro)    | 174,5 | 61,6  | 2,8   | 3,54  | 0    | 15,36 |
| Main local budgetary authorising officers (percentage)   | 5,48  | 37,60 | 87,66 | 17,45 | 0    | 41,9  |
| Main central budgetary authorising officers (percentage) | 94,52 | 62,40 | 12,34 | 82,55 | 0    | 58,07 |

(Source: Authors' processing based on Annual Reports of Romanian Court of Accounts, 2008-2012)

The monitoring process regarding the use of the fund is performed by the Romania Court of Accounts through the annual audit actions, the results and the proposals being presented in the Annual Report of the Court of Accounts. These actions are performed both on entities responsible for the approval, administration of the Fund, respectively the General Secretariat of the Government, but also on other main budgetary authorizing officers, representing central and local administration from all counties.

Because in case of a natural catastrophe the local financial capacity is exceeded often external aid is needed, so it was decided the constitution of the European Solidarity Fund (EUSF).

### 3. THE EUROPEAN UNION SOLIDARITY FUND

To assist public authorities of Member States as well as those who have applied for accession to the European Union (EU) it was decided the establishment of the EUSF in order to help the affected areas.

The annual amount of EUSF is 1 Billion EUR. The cases when the EUSF intervenes are clearly defined:

The estimated damage= min (0.6%\*Gross National Income; 3 billion Euro)

The deadlines are established, for example the application should be submitted to the Commission no later than ten weeks after the first damage occurred.

It should be accompanied by a cost estimation and also being necessary to mention any other possible financing sources: national, European and/or international. Based on information provided by the country affected the Commission will decide if the mobilization of the EUSF may be proposed to the budgetary authority which authorizes the corresponding appropriations. Once these appropriations are available the Commission concludes an agreement on implementation with the beneficiary state and accords a grant that will be paid in a single installment. The grant is used within one year of the date on which it has been disbursed. The beneficiary state must reimburse any part of the grant that hasn't been used. Six months after the expiry of this period the beneficiary state must submit to the Commission an execution report. (Council Regulation (EC) No 2012, 2002)

We have analyzed the period 2007-2016 and the situation on the EUSF aid granted is presented in the next table. The largest amount was received by Italy that was affected by 2 earthquakes in this period: 2009 and 2012, the aid granted in these circumstances was equal to 1164 million of Euro. On the following

positions we can find Germany, United Kingdom and France, countries that received the aid due to floods or storms. When it comes to Romania we have to mention

that the greatest amounts were received after periods when our country was affected by floods but also in one case of drought.

**Table 2. Aid granted to the Member States during 2007-2016**

| Beneficiary State(Total) | Aid granted (million EUR) | Percentage  |
|--------------------------|---------------------------|-------------|
| ITALY                    | 1271,3                    | 45,45%      |
| GERMANY                  | 558,9                     | 19,98%      |
| UNITED KINGDOM           | 222,6                     | 7,96%       |
| FRANCE                   | 163,1                     | 5,83%       |
| POLAND                   | 105,6                     | 3,78%       |
| GREECE                   | 97                        | 3,47%       |
| SERBIA                   | 60,2                      | 2,16%       |
| ROMANIA                  | 47,8                      | 1,71%       |
| OTHER MEMBER STATES      | 270,527                   | 9,67%       |
| <b>TOTAL</b>             | <b>2797,127</b>           | <b>100%</b> |

(Source: Authors' processing based on data provided by European Commission, 2017, EU Solidarity Fund interventions since 2002)

If we take into account the catastrophe type we can observe in Table 3 that although the number of floods exceeds the number of earthquakes the largest amounts were released from EUSF in order to help the countries affected by earthquakes, respectively Italy. This fact is a proof that earthquakes have a low

probability of occurrence but devastating effects. In addition we want to emphasize an increase of the amount released in case of floods during the period analyzed and in the latest years also for other types of catastrophes (drought, fires).

**Table 3. Aid granted to the Member States by types of catastrophes**

| Catastrophe | Aid granted(million EUR) | Percentage of total | The number of events |
|-------------|--------------------------|---------------------|----------------------|
| Earthquake  | 1190,4                   | 42,56%              | 5                    |
| Floods      | 1128,227                 | 40,33%              | 34                   |
| Storm       | 311,9                    | 11,15%              | 3                    |

(Source: Authors' processing based on data provided by European Commission, 2017, EU Solidarity Fund interventions since 2002)

#### 4. CONCLUSIONS

We conclude that the public sector has an extremely important role in cat risk management but at the same time we want to emphasize that cat risk management involves not only public institutions but rather the state should be seen as part of a whole process along with owners, insurance companies, reinsurers and capital market agents. Also, we should not look at this problem considering only Romania as it is a Member State of EU and due to the fact that a large number of countries have been affected by catastrophes it was established a global framework for all Member States and those ones that have started the accession process.

In order to have a more appropriate management we consider that an important step would be represented by implementing a stronger legal basis by clearly defining terms and eliminating the risk of interpretation. Currently the Intervention Fund is poorly regulated and a distinct administrative structure whose primary purpose being monitoring the allocations of money does not exist. The categories of expenditures that can be covered from the Intervention Fund are not mentioned and also a definition explaining what an affected person means.

Another useful element would be a more active collaboration between public and private institutions. For example PAID-Natural Disaster Insurance Pool is the result of a public-private partnership but in the future these relationships should be developed. Also, another important aspect that can be taken into account is the active role of public and private institutions with regards awareness between citizens in terms of the need of an insurance policy, especially in the context of a decrease of the households that have an active mandatory policy. In this context we can expect to increase the need of

realizing amounts from the Intervention Fund after future catastrophes.

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