

Damage from natural disasters

During the seventies of the last century, about 700,000 people lost their life in natural disasters. It is estimated that the number moving to the 800,000 victims.

Drought cause 33% of human victims, floods 32%, tropical cyclone 20%, which are huge numbers compared to the 4% of human victims which are the cause of the earthquake.

Total annual damage from natural disasters ranged from 50 to 60 billion U.S. dollars on an annual basis, and is now estimated at almost 100 billion U.S. dollars annually. Atmospheric phenomena in the damages involved with the 84% (32% of the flood, 30% of tropical cyclone activity and 22% of the drought). Earthquake caused 10% damage, and the remaining 6% are from other natural disasters. These figures undoubtedly indicate that something must be done in the system of preventive care and contribute to alleviating the consequences of natural disasters.

Damage in Serbia

In order to better understand the extent of damage in Serbia, it is necessary to identify the economic sectors dependent on weather and climate. These are the sectors whose activities depend on the weather and climate, and at the same time have a large contribution to the Gross Domestic Products (GDP).

In the study ("Study on Economic Benefits of RHMS of Serbia", The World Bank Study Group, 2005, Belgrade, Serbia) weather dependent economic sectors in Serbia and the share of these sectors in the GDP are identified. Also, the mean annual economic losses from hydro - meteorological hazards¹ and unfavorable² hydro - meteorological events are estimated.

In the period from 2000 to 2004 share of the weather dependent sectors in national economy, without Kosovo and Metohija, (in % of GDP at 2002 constant prices excluding taxes, i.e. % of Gross Value Added, GVA) is from 42% to 43.8%. Already in 2005 share of the weather dependent sectors in the GDP was 47.18%.

World Bank study included only 49% of weather dependent sector is not taken into account the damage caused by forest fires. However, 258 forest fires were registered during 2007. Fire is registered in the 33,000 hectares of overgrowth. Of the 16,000 hectares was under forests. Forest fires have caused damage of about 40 million Euros. Rehabilitation needs 24 million. Indirect damage is not evaluated.

The study has focused on a number of selected weather-dependent sectors. Their sensitivity to hydrometeorological hazards¹ and unfavourable² weather conditions is from medium to high (See Table 1).

Table 1: Sensitivity to hydro-meteorological hazards and unfavorable weather conditions

Sectors which are exposed to weather risk	How	Sensitivity
Agriculture	Hail, Strong wind, Flood, Late/Early frost, Drought	High
Production transmission & distribution of electricity and heating energy	Extreme low & high air temperature, Heavy precipitation especially wet snow, Thundering and lighting struck, Drought	Relatively high
Transport (road, rail, river and air)	Fog, Heavy rain, Snow, Slippery conditions (glaze, freezing, ice), River froze	Medium, But air High
Civil engineering (Road construction and bridges, water engineering, building construction)	Strong wind and gust of wind, Heavy precipitation, Frost, Thundering and lighting struck	Relatively low
Water resources	Drought and Flood	Relatively high
Tourist and trade	Every deviation of normal climatologically and weather seasons	Medium

The selected sectors (agriculture, flood management, energy production ó heating plants, road maintenance, and commercial air transport) make 49% of all weather-dependent sectors. It was found that total annual economic losses from hydro - meteorological hazards and unfavourable conditions in selected sectors range from 200 to 600 million EUROS. In the study, human lives were treated as a moral norm, not as a statistical - economic category. The estimated damage in the weather dependent sectors is shown in Table 2.

Table 2: Annual economic losses and human losses from hydro-meteorological hazards and unfavourable conditions in selected sectors

Sectors - Hydro-Meteorological Hazards & Unfavourable Hydro-Meteorological Events	Evaluated losses in selected sectors	
	The mean annual economic losses in million EUROS	Human losses
Agriculture-Flood	From 38.75 to 106.25	Few, up to 10
Water resources management-Flood	About 24.5	-----
Agriculture-Hail, Heavy rain, strong wind	About 91.45	Few, up to 10, thunder-struck
Agriculture-droughts	About 500	No losses
Energy production (heating plants)-Extremes low air temperatures	About 8.95	Few, up to 10
Road maintenance- Snow, Slippery conditions (glaze, freezing, ice.)	About 43.75	-----
Human losses on highways, regional roads and local roads due to bad weather: from 105 to 131		
Commercial air transport	From 0.675 to 0.9	-----
TOTAL	From 208.1 to 607.15	From few to 160

Estimated damage in the weather dependent economic sectors, including human victims clearly shows that it is necessary to work on refining the weather warning system. In this way, RHMS of Serbia contributes to the strengthening of resilience* and capacity** of the whole community in Serbia.

¹ Hydrometeorological hazards mean hydro-meteorological events, which by their intensity, duration or time of occurrence pose risks to human safety and may inflict a substantial damage on the economic sectors. These phenomena are viewed as hazardous when they reach critical values or characteristics of hydro-meteorological values. [Source: "Study on Economic Benefits of RHMS of Serbia", The World Bank Study Group, 2005, Belgrade, Serbia]

² Unfavourable hydrometeorological events (weather conditions) mean hydro-meteorological events, which by their intensity, duration or time of occurrence do not reach critical values or characteristics of hydro-meteorological values, but which can inflict damage to specific economic sectors/sector. [Source: "Study on Economic Benefits of RHMS of Serbia", The World Bank Study Group, 2005, Belgrade, Serbia]

* Resilience: Capacity to recover the normal functioning and development after being hit by a disaster. A high resilience reduces indirect impacts of disasters, such as business and services interruptions in the aftermath of a disaster. [Source: ISDR Terminology of disaster risk reduction]

** Capacity: A combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster. [Source: ISDR Terminology of disaster risk reduction]