

About HMWS and Meteoalarm

Meteorological and hydrological systems for warning and announcement of occurrence of special, dangerous and unfavourable meteorological and hydrological phenomena and events (**Hydro-Meteorological Warning System**) are the primary link in the system of protection of material goods and human life from destructive atmospheric phenomena. These systems have the highest priority in National Meteorological and Hydrological Services in many countries of the world and, ten years ago, also in Europe,

Governments of these countries have recognized their national Meteorological / Hydrological Services as a basic subject in the reduction of damage from destructive meteorological and hydrological phenomena / events. In this way, the overall capacity¹ of the community will be strengthened for an effective struggle with natural disasters. Accordingly, the Republic Hydrometeorological Service of Serbia (RHMS of Serbia), started to develop **Hydro-Meteorological Warning System (HMWS)**.

Serbian HMWS is treated as a part of comprehensive national system for the reduction of harmful consequences of natural disasters². In this way, Serbian overall capacity will be strengthened and will create a sound basis for reducing risk³ and alleviating the consequences of natural disasters.

The essential elements of an operational warning system for meteorological or hydrological hazards are:

- Data collection;
- Routine monitoring;
- Hazard* detection;
- Hazard prediction;
- Watch and warning formulation;
- Information dissemination;
- Community response and feedback and
- Post-disaster support

In designing and implementation of our Hydro-Meteorological Warning System we used the experiences of countries which have most problems with natural disasters, recommendations of WMO (World Meteorological Organization) and of Professor [John W. Zillman](#) (2004).

The cores of Serbian HMWS are Meteoalarm and Hydroalarm.

The Meteoalarm system and internet site www.meteoalarm.eu are developed by the Network of European Meteorological Services, known as EUMETNET. The unique and special symbols for dangerous meteorological elements and phenomena are determined. Colour coded map in combination with these symbols provides a quick overview forecast of dangerous meteorological elements and phenomena. Four levels of risk are identified.

Each colour represents one level of the risk (green - no risk, yellow - the weather is potentially dangerous, orange - the weather is dangerous and red - the weather is very dangerous). White colour indicates that information is not available. All members of EUMETNET use the same colours and symbols. Weather warnings are issued for up to 48 hours in advance.

For the universality of weather warning system we use the logic of European Metealarm with the same graphic and colour symbols. After a year of operational work, we became members of EUMETNET.

The Hydroalarm is developed as a part of **Hydro-Meteorological Warning System**. Four levels of risk are identified. Each colour represents one level of the risk. Green colour means - no warning. Yellow - significant water stage rise or fall. Ice is in movement and covers from 10% to 40% of water surface. Events that could require undertaking of measures for **first flood or ice alert**. Orange - Very significant water stage rise or fall. Ice is in movement and covers from 50% to 100% (immovable ice) of water surface. Events that could require undertaking of measures for **second flood or ice alert**. Red - extreme hydrological events and conditions.

¹ 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]

² Disaster: A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources [Source: ISDR Terminology of disaster risk reduction]

³ Risk: Probable impacts, expressed in terms of expected loss of lives, people injured, property, livelihoods, economic activity disrupted or environmental damage. [Source: ISDR Terminology of disaster risk reduction]

* Hydrometeorological hazards: Natural processes or phenomena of atmospheric, hydrological or oceanographic nature, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. [Source: ISDR Terminology of disaster risk reduction]