Council of the
European Union

Brussels, 11 October 2023
(OR. en)

14072/23

ENV 1109

NOTE

From:	General Secretariat of the Council
To:	Delegations
Subject:	How the Flood Directive functioned as a prevention tool during the recent floods in Greece - Information from the Greek delegation

Delegations will find in the Annex an information note from the Greek delegation on the above subject, to be dealt with under "Any other business" at the Council (Environment) meeting on 16 October 2023.

ANNEX

How the Flood Directive functioned as a prevention tool during the recent floods in Greece

- Information from the Greek delegation -

On 4 September 2023, three years after the extreme storm Ianos, Cyclone Daniel formed over Greece, affecting mainly the central part (Thessaly region) for a period of four days, until 7 September. Precipitation reached unprecedented levels, with total amounts (from 4 to 7 September) ranging from 100 mm to about 1 100 mm for the Thessaly region, most of which fell in a couple of hours. The weighted average (according to National Observatory of Athens stations) was about 576 mm over an area of roughly 14 000 km^2 (over 8 billion tonnes of water). It is estimated that some of the flooded areas will need more than a year to drain.

This precipitation led to extensive flooding over the Thessaly region, causing the deaths of 17 people and about 140 000 animals and disrupting agricultural production (Thessaly region accounts for about one third of all agricultural production in Greece), affecting hundreds of thousands of people and thousands of buildings and businesses, disrupting the operation of the drinking and irrigation water systems, wastewater treatment plants and electricity supply, and damaging crucial infrastructure such as roads, bridges and railways.

The flooding reached an extent similar to that depicted in the Flood Risk and Hazard Maps for a flood event with a likely return period of over 1 000 years. However, the relevant maps failed to accurately predict the water depth (in some areas, the actual depth was over 5 metres, whereas it was predicted to be less than 1 metre) due to the constraints of the model that was used, the areal analysis of the background topographical map and the assumptions of the imagined flood event. The model assumptions used for the official flood risk maps did not take into account the intensity of the rain over a short period of time, the spatial distribution of the rain, the effect of the high volume of transported sediment and debris that played a major role in the development of the flood, or the actual maintenance status of the flood defence infrastructure and irrigation and drainage network, which added to the complexity of the actual phenomenon.

Furthermore, another extreme storm followed on 27 September that in some areas led to even worse floods since the ground was already saturated and could not absorb any excess water.

The above highlights the vital importance of the Flood Directive as a tool in strategic planning for the flood hazard, but also its constraints. There is a need to consider how to improve the usefulness of the FRMPs under the Flood Directive to better support the management authorities and mechanisms in a more dynamic way. For instance, measures such as establishing minimum common standards for the models used for the flood maps to improve their accuracy and make them more of an operational tool rather than a strategic tool could be examined so that the flood maps better serve the needs of both the flood protection masterplans (currently drawn up based on the alleged 50-year return period as a general rule and, in some exceptional cases, on a 100-year return period) and the civil protection emergency response plans.

Furthermore, due to climate change, the frequency of ‘extreme’ event scenarios (in the area of Thessaly three ‘extreme’ events have occurred in a period of 3 years) proves that ‘extreme’ events have turned into events of high probability, i.e. floods with a return period of up to 50 years. This dramatic climate crisis cannot be represented by the current climate models, which use data that refer to longer time periods and so cannot easily be incorporated into the Flood Risk Maps. The return period seems to be irrelevant as a planning tool since the climate is changing and flooding probabilities cannot be predicted accurately. The process of developing the flood maps must be adapted to the new climate reality.

Finally, more emphasis needs to be given to diversifying our flood protection measures to improve water retention and include controlled flooding of certain areas, as well as to increasing the resilience of critical infrastructure and adapting all human activities to the increased frequency of floods.