

Processing of spatial information and land data for compatible development and disaster prevention

Commission 3 and 8 – 19/06/2014

**The use of spatial data is currently
focused to analyze the territory
for the sustainable development
or for calibrating policies in the long
or medium term
for the prevention or the mitigation of
the effects on major changes
due to land use and energy**



The international scientific community and governments are aware that our planet will face the impacts of climate change and earthquakes

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**some already underway
and others that may
happen in the near future**



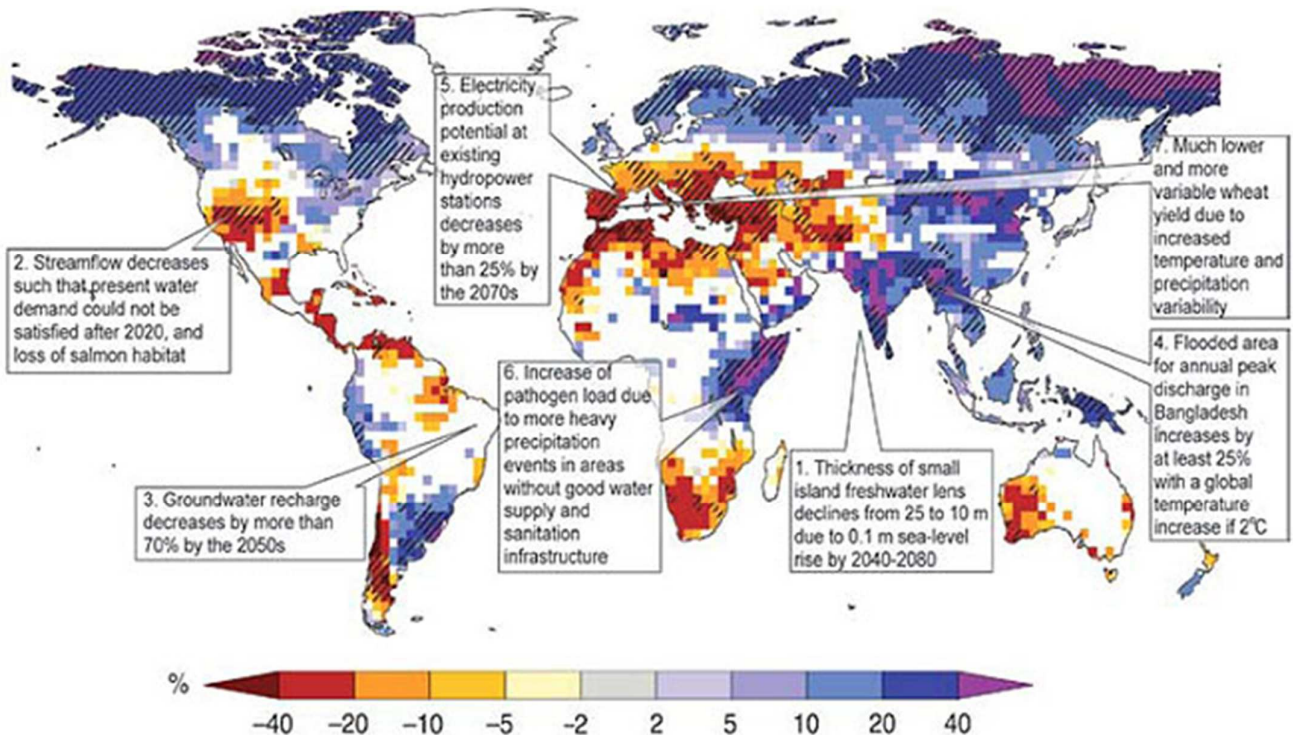
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These events will continue to occur most likely



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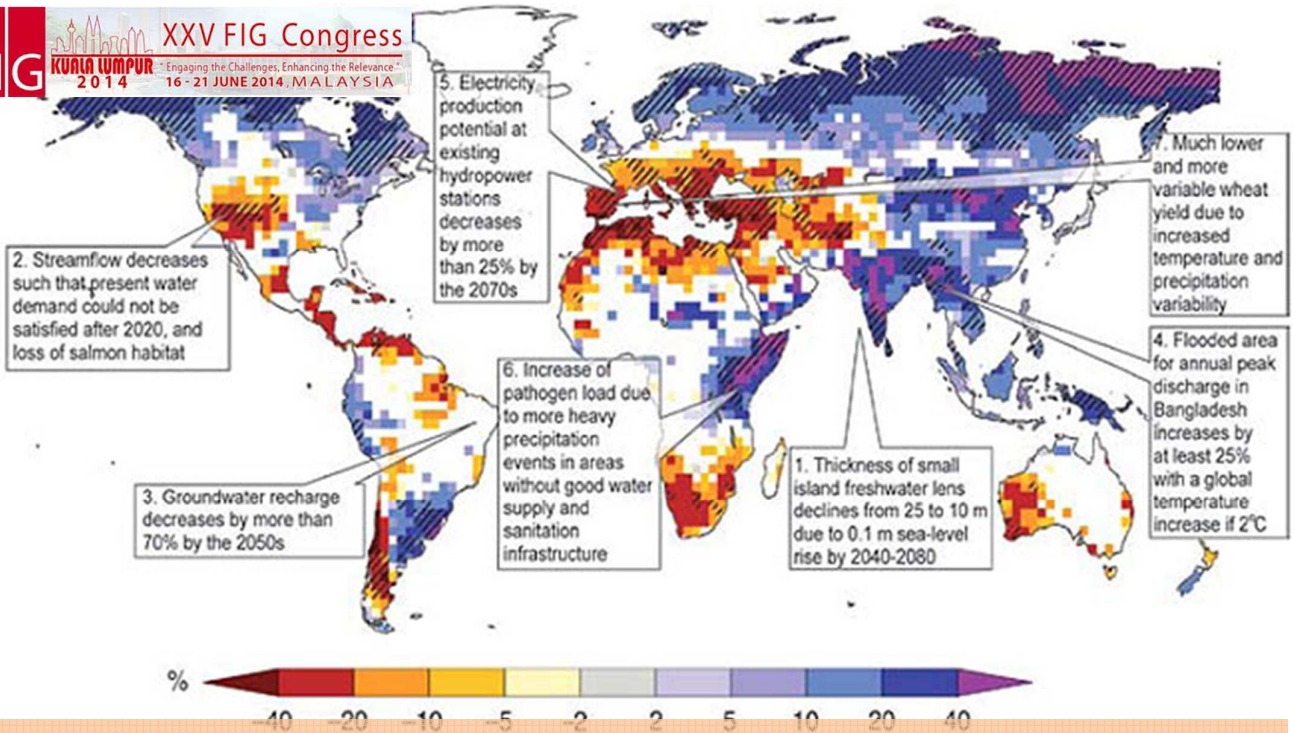
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in the coming decades, the European region, especially the Mediterranean region, and other continents will be faced with particularly negative impacts linked to climate change, which, combining the effects due to anthropogenic pressures on natural resources, make the areas of the planet a vulnerable and insidious habitat

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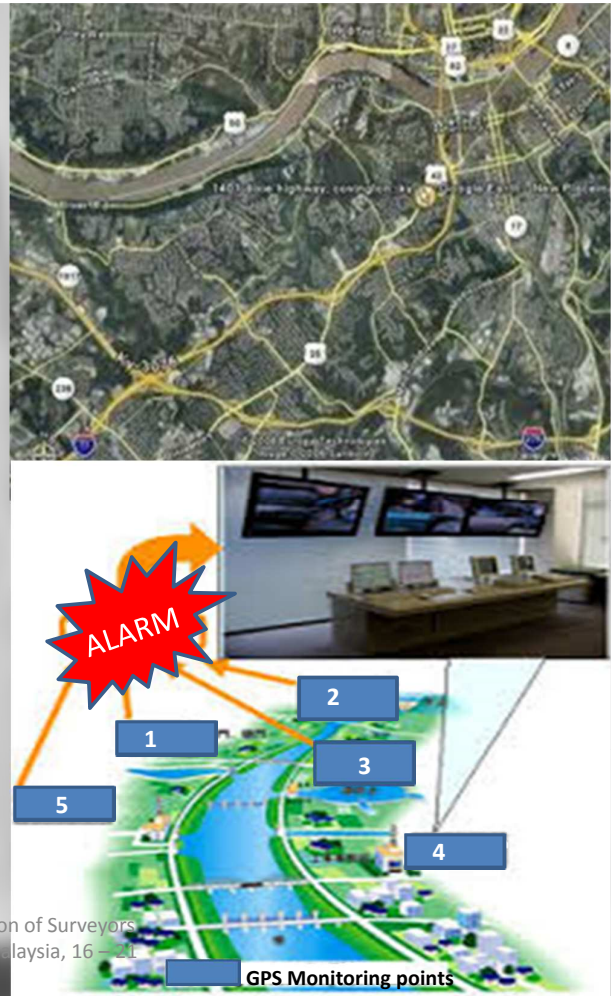
The possible negative impacts in the coming decades are related primarily to an increase in average and maximum temperatures (especially in summer), an increase of frequency of extreme weather events (heat waves, droughts and episodes of intense rainfall and snowfall) and a reduction of the average annual precipitation and river flows, with resulting possible decline in agricultural productivity and loss of natural ecosystems

Adaptation measures already taken are not sufficient to take preventive action, even with emergency decision, or to adequately address the consequences of the impacts of climate changes.

A clear and coherent strategic approach is needed for the implementation of a plan of action to ensure that prevention and adaptation measures are taken in a timely manner and are effective and consistent across sectors and levels of government involved



It is therefore considered useful for governments that have the task of deciding to be equipped with a geographic information system able to raise the alarm containing the necessary and useful information to prevent the consequences of disasters on health, on survival of the population and on the preservation of its assets



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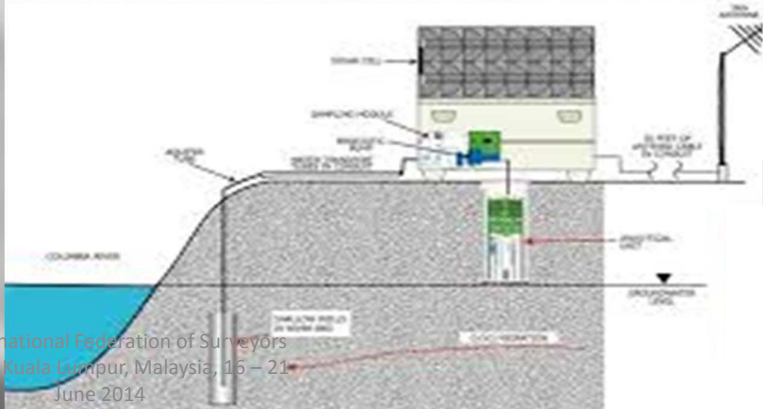
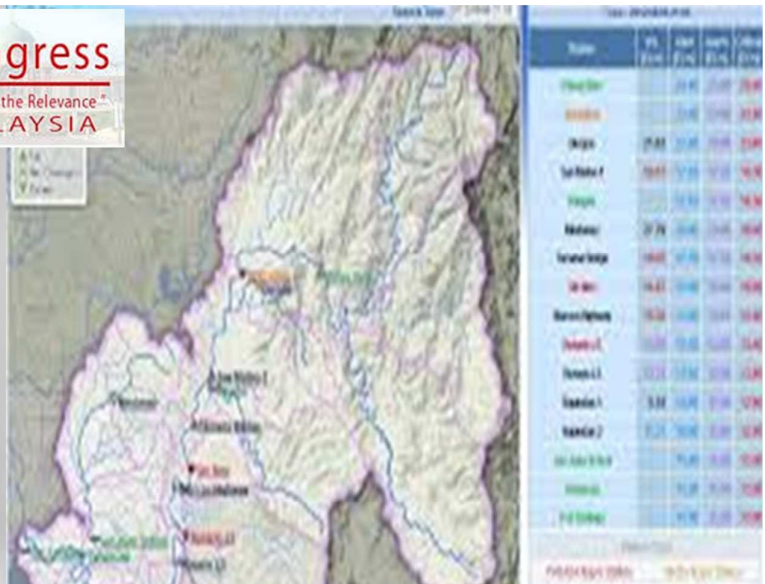
GPS Monitoring points

This information system, using all information available through the evolution of GIS Geograph Infomation System, must be improved with additional information that also include the limit conditions of emergency

OFFICIAL WATER LEVEL MONITORING STO. NINO BRIDGE	
1ST ALARM	PREPARE TO EVACUATE 15 METERS WATER LEVEL 1 MINUTE CONTINUOUS AIRING
2ND ALARM	EVACUATE TO DESIGNATED CENTERS 16 METERS WATER LEVEL 2 MINUTES INTERMITTENT AIRING
3RD ALARM	FORCE EVACUATION 17 METERS WATER LEVEL 5 MINUTES CONTINUOUS AIRING
POST DISASTER - WATER LEVEL 14 METERS CLEARING / CLEANING REHABILITATION	
MARIKINA DRRMC	

This Information System of "Limit Conditions of Emergency" affects the level of detection limit with respect to which the manifestation of the adverse event or exceptional practice should be considered likely and resulting in preventive decisions for the preservation and defense of:

- the concentrated urban settlements;
- the peripheral and isolated settlements;
- the strategic and hazardous production plants waste;
- the crops of high public interest



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Supplementary information to be included in GIS, for example, relate to the following information to be adapted according to the specific places:

BEFORE THE EVENTS

- list of possible risks or problems recurring;
- The georeferencing of the areas exposed to specific risks;
- The information obtained from the monitoring systems;
- Information on potential harms and on the possible population involved;
- The way of raising the alarm;
- The emergency plan;
- The identification of decision makers;

AFTER THE EVENTS

- The identification of infrastructure, buildings and areas that provide the strategic functions for the emergency (evacuation, operational offices, assistance, etc.);
- The identification of the structures of accessibility and of connection to the local context and any critical items;
- The identification of structural aggregates and of individual structural units that can interfere with the infrastructure accessibility and connection to the local context

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**Thank You
For your attention**