

DRAFT

**PROPOSAL FOR A DIRECTIVE
OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
ON THE ASSESSMENT AND MANAGEMENT OF FLOODS
COM(2006) 005**

**AMENDMENTS SUGGESTED BY
EUROGEOSURVEYS,
THE ASSOCIATION OF THE EUROPEAN GEOLOGICAL SURVEYS
AND THE
EUROPEAN FEDERATION OF GEOLOGISTS**

Whereas:

- EuroGeoSurveys is the Association of the European Geological Surveys, with 29 members, representing about 8,000 persons, most being researchers. Water resources management, especially groundwater, is one of the domains of activity of Geological Surveys. Collectively they are Europe's largest single data providers and source of expertise on groundwater. This includes quantitative, quantitative and dynamic assessment, monitoring and modelling of groundwater bodies. EuroGeoSurveys Member Surveys are important contributors to the European Research Area, especially in natural resources knowledge and management and the mitigation of natural hazards of geological origin.
- The European Federation of Geologists (EFG) is the Association of professional geologists in Europe. It safeguards and promotes the present and future interests of the geological profession in Europe and it promotes best practice policies with regard to the responsible use of the Earth's natural resources. In total, EFG represents approximately 75,000 geologists in Europe. EFG has established different working groups and expert panels to be able to provide high quality response and recommendations to the European Commission. One expert panel focuses on natural hazards and climate change and is in close communication with different units of DG Environment and DG Research on natural hazards issues, including the Floods Directive.

Deleted: The European Federation of Geologists is the Association of professional geologists.

Both Associations participate to various European experts working groups, for instance in relation with the "Protection of groundwater against pollution" Directive. EuroGeoSurveys is a partner organisation of the "Global Earth Observation System of Systems (GEOSS)".

AMENDMENTS PROPOSED

As a general comment, the Commission should enclose into the Directive a Technical Annex, which provides precise guidelines on the cartography to be produced (mapping scale, legend, etc.) and on the methodologies to be used for the risk assessment. Moreover, standard guidelines for the production of the interim report and of the management plans should be also part of the Technical Annex.

The Directive proposal does not recognise the existence and the local importance of flooding caused by the overflow of groundwater bodies, a phenomenon of considerable importance in karstic regions or in regions with large near surface groundwater bodies hosted by porous geological formations.

Text proposed by the Commission	Amendments proposed by EuroGeoSurveys and the European Federation of Geologists
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Amendment 1
Explanatory memorandum; 1) Context of the proposal; Grounds for and objectives of the proposal

Between 1998 and 2004, Europe suffered over 100 major floods, including the catastrophic floods along the rivers Danube and Elbe in 2002. These floods caused some 700 fatalities, the displacement of about half a million people and insured economic losses totalling at least € 25 billion. Flood events during summer 2005, in Austria, Bulgaria, France, Germany and Romania and elsewhere, has pushed these figures even higher.

Between 1998 and 2004, Europe suffered over 100 major floods, including the catastrophic floods along the rivers Danube and Elbe in 2002. These floods caused some 700 fatalities, the displacement of about half a million people and insured economic losses totalling at least € 25 billion. Flood events during summer 2005, in Austria, Bulgaria, France, Germany and Romania and elsewhere, has pushed these figures even higher.

Floods are triggered by the local combination of diverse causes, whereas rainfall and run-off, their duration and intensity and topography are of particular importance. In addition, land-use, the nature of soils, geological and hydrogeological conditions contribute to varying degrees to flood hazards, and to the severity of their impacts.

In countries where stream and rivers often cut narrow valleys with very steep slopes, such as the alpine countries, flash floods in smaller river basins have devastating impacts as well, almost with an yearly recurrence. The events can take the form of debris flow or of mud flow, such as in the case of the River Sarno in Italy in 1998 with 150 deaths, or in 2000 in the whole north of Italy, where deaths

and damages to infrastructures occurred mainly in the valleys of the Alps area.

Justification

It should be clear that the Directive recognises the diversity of the factors that contribute to the occurrence of floods, to the nature and to the severity of their impacts.

Amendment 2

Explanatory memorandum; 1) Context of the proposal; General context

Floods are natural phenomena which cannot be prevented.

Floods are natural phenomena which *are often difficult to prevent* (or *cannot be avoided*).

Justification

*It should be emphasised that in certain cases floods can, and should be, prevented, as implicitly recognised by Chapter II of the Directive proposal. Several flood prevention models are already operational at the European scale. The Lisflood model, run by the EC in connection with the national civil protection agencies is able to send alert signals up to three days before a major event occur. **The same sentence is repeated in point (2) of the recitals at the beginning of the Directive, and should be changed accordingly.***

Amendment 3

Recital 2

(2) Floods are natural phenomena which cannot be prevented.

(2) Floods are natural phenomena which *are often difficult to prevent* (or *cannot be avoided*).

Justification

Same as for Amendment 2

Amendment 4

Recital 8

(8) Throughout the Community different types of floods occur, such as river floods, flash floods, urban floods,

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sewer floods and coastal floods. The damage caused by flood events may also vary across the countries and regions of the Community. Hence, objectives regarding managing flood risks should be based on the local and regional circumstances.

floods, urban floods, sewer floods and coastal floods. The damage caused by flood events may also vary across the countries and regions of the Community. Hence, objectives regarding managing flood risks should be based on the local and regional circumstances.

Justification

Groundwater floods can be defined as the temporary covering by water of land not normally covered by water which occurs as the result of the emergence of groundwater from an aquifer following higher than normal rainfall or the cessation of long-term pumping. Groundwater flooding occurs in areas underlain by aquifers, both of regional significance, such as karstified limestones (rapid flooding), the Chalk of northern Europe (slow flooding, see the website of the Interreg IIIa project FLOOD1 - <http://www.flood1.info> - for examples), or local aquifers limited in extent, such as recent alluvial deposits found in river valleys underlain by impermeable material. In cases of slow flow of water within the ground, the onset and cessation of groundwater floods are significantly different to river overbank flooding and their persistence can cause severe property damage and high social costs. It is estimated that 1.7 million properties in England are at risk of groundwater flooding. Given the importance of this flooding mechanism and the fact that it is often ignored, it should be included in the list of types in recital 8.

Deleted: In France, the Somme river basin groundwater flooding in 2001 and 2002

Amendment **5** Recital 11

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With a view to avoiding and reducing the negative impacts of floods on the area concerned it is appropriate to provide for flood risk management plans. The causes and consequences of flood events vary across the countries and regions of the Community. Flood risk management plans should therefore take into account the particular geographic, hydrologic and other relevant circumstances of the river basin, sub-basin or stretch of coastline, and provide for tailored solutions according to the needs and priorities of the river basin, sub-basin or coast line, whilst ensuring coordination with river basins districts.

With a view to avoiding and reducing the negative impacts of floods on the area concerned it is appropriate to provide for flood risk management plans. The causes and consequences of flood events vary across the countries and regions of the Community. Flood risk management plans should therefore take into account the particular geographic, **geological, hydrogeological**, hydrologic, **land cover, land use, soils characteristics**, as well as other relevant **conditions and processes** of the river basin, sub-basin or stretch of coastline, and provide for tailored solutions according to the needs and priorities of the river basin, sub-basin or coast line, whilst ensuring coordination with river basins districts.

Justification

The importance of land-use, of the nature of local soils, geology and hydrogeology needs to be fully recognised as all these parameters may locally be significant contributors to the nature of floods and to the severity of their impacts. The term "geological" refers to geology related hazards risks such as landslides, erosion and sedimentation that can significantly aggravate the impacts of a flood. It also includes the scenarios where flooding is caused by an initial landslide closing off a valley and create upstream flooding and subsequent dam break (frequent examples are known in the mountain regions in Europe. The term "hydrogeological" refers to the complex interaction between surface and groundwater (like buffer capacity) in the flooding situation. These factors of local or regional nature need to be identified and evaluated to achieve food risk assessment.

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Amendment 6

Chapter II "Preliminary flood risk assessment", Article 4.2.a

The preliminary flood risk assessment shall include at least the following:

- (a) a map of the river basin district including the borders of the river basins, sub-basins and where appropriate associated coastal zones, showing topography and land use;

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- (a) a map of the river basin district including the borders of the river basins, sub-basins and where appropriate associated coastal zones, showing **geological, hydrogeological, land cover, land use, soils and topography characteristics. This map shall also reflect the risk of pollution in case of occurrence of a flood.**

Justification

Land use 'per se' is not enough. In order to mitigate the effect of flood events, it is necessary to have a detailed picture of geological, hydrogeological, land cover, land use and soils characteristics, with particular emphasis on soil sealing, tendency to landslide phenomena, erosion and vulnerability to soil contamination.

One of the the biggest impacts of flooding is the distribution of pollution either dissolved in the water or adsorbed to the suspended sediment. While water returns after the flood event, pollution remains on the flooded area. This is common in mining catchments, as illustrated by the Spanish Aznalcollar and Romanian Baia Mare tailings dam failures (see the new Mine Waste Directive). Pollution often comes from up-stream sources or from the flood plain soils themselves. This also requires integrated management of the whole catchment (as correctly addressed in Chapter IV). Often, removing flood-related pollution is the most cost-demanding part of the management plan."

Amendment 7

Chapter II "Preliminary flood risk assessment", Article 4.2.f

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(f) a forecast of the estimated consequences of future floods to human health, the environment and economic activity taking into account long-term developments including climate change.

(f) a forecast of the estimated consequences of future floods to human health, the environment and economic activity taking into account long-term developments including ***pollution accumulation and*** climate change.

Justification

Land use 'per se' is not enough. In order to mitigate the effect of flood events, it is necessary to have a detailed picture of geological, hydrogeological, land cover, land use and soils characteristics, with particular emphasis on soil sealing, tendency to landslide phenomena, erosion and vulnerability to soil contamination.

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Amendment 8

Chapter IV "Flood risk management plans", Article 9.2

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Member States shall establish appropriate levels of protection specific to each river basin, sub basin or stretch of coastline, focusing on the reduction of the probability of flooding and of potential consequences of flooding to human health, the environment and economic activity, and taking into account relevant aspects: water management, soil management, spatial planning, land use and nature conservation.

Member States shall establish appropriate levels of protection specific to each river basin, sub basin or stretch of coastline, focusing on the reduction of the probability of flooding and of potential consequences of flooding to human health, the environment and economic activity, and taking into account relevant aspects: water management, soil ***and land*** management, spatial planning, land use, ***geology, hydrogeology*** and nature conservation.

Justification

Land management prepares and controls the implementation of plans for organising human activities on land. It implies a series of actions, such as remediation activities, and includes systematic assessments of land and water potential, alternative patterns of land use and other physical, social and economic conditions. It is, therefore, closely linked to soil management and should be taken in due account as a relevant aspect for flood protection actions The nature of soils as well as local geological and hydrogeological conditions are equally important to establish floodrisk management plans.

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The nine themes also include research needed to underpin the formulation, implementation and assessment of EU policies, such as in the areas of health, safety, consumer protection, energy, the environment, development aid, fisheries, maritime affairs, agriculture, animal welfare, transport, education and training, employment, social affairs, cohesion, and justice and home affairs, along with pre-normative and co-normative research relevant to improving the quality of standards and their implementation.

... [1]

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Justification

As much as energy, minerals are vital inputs to the EU economy. Minerals are the largest single flow of materials through the EU economy as detailed in the preparatory studies related to the Thematic Strategy on the Sustainable Use of Natural Resources. Security of supplies to the EU economy, competitiveness of the EU minerals industry and its related equipment manufacturers, engineering, consultancies firms and the decoupling of the continuous growth in minerals demand by the EU economy from the related environmental impacts within and outside the EU are all significant issues, of great importance for Europe's sustainable development. The competitiveness aspects have been recently addressed by the Commission in its COM(2005) 474, that identified the European Technology Platform on Sustainable Mineral Resources as one of the sectoral actions in support of the implementation of the Community Lisbon Programme. Decoupling is at the heart of the Thematic Strategy on the Sustainable Use of Natural Resources [COM(2005) 670] . The Thematic Strategy, as well as the European Technology Action Plan highlights the importance of technologies and innovation for decoupling.

Amendment 2

Annex I, Chapter I "Cooperation", subtitle "Themes", point 4 "Nanosciences, Nanotechnologies, Materials and new Production Technologies", subtitle "Rationale", paragraph 3

European Technology Platforms in fields

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such as nanoelectronics, manufacturing, steel, chemistry, the transport industry, construction, industrial safety, textiles, pulp and paper help establish common research priorities and targets. In addition to industry relevant priorities and their integration for sectoral applications,, the relevant policy, regulatory and standardisation, and impact issues will be addressed, including by responding flexibly to new policy needs that arise.

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Justification

See amendment 1. Both energy and minerals are critical to the EU economy. Most energy sources are of mineral origin (fossil fuels, uranium; geothermal energy)

Amendment 3

Annex I, Chapter I "Cooperation", subtitle "Themes", point 4 "Nanosciences, Nanotechnologies, Materials and new Production Technologies", subtitle "Activities", bullet 3 "New Production"

Creating conditions and assets for knowledge-intensive production, including construction, development and validation of new paradigms responding to emerging industrial needs; development of generic production assets for adaptive, networked and knowledge-based production; development of new engineering concepts exploiting the convergence of technologies (eg, nano, bio, info, cognitive and their engineering requirements) for the next generation of high value-added products and services, and adaptation to the changing needs.

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Justification

Geo-cognition, the knowledge related to the subsurface of the Earth, the third

dimension of the environment, its resources (water, energy, minerals), its potential as space for the development of infrastructures (tunnels, storages ...) and as A source of major hazards (earthquakes, volcanic eruptions, toxic gaseous emissions ...) is of essence for Europe's sustainable development. This knowledge complements and enriches the other forms of cognition.

Amendment 4

Annex I, Chapter I "Cooperation", subtitle "Themes", point 4 "Nanosciences, Nanotechnologies, Materials and new Production Technologies", subtitle "Activities", bullet 4 "Integration of technologies for industrial applications"

Integrating new knowledge and technologies on nano, materials and production in sectoral and cross sectoral applications such as: health, construction, transport, energy, chemistry, environment, textiles and clothing, pulp and paper, mechanical engineering.

Integrating new knowledge and technologies on nano, materials and production in sectoral and cross sectoral applications such as: health, construction, transport, energy, chemistry, *minerals*, environment, textiles and clothing, pulp and paper, mechanical engineering.

Justification

Same as amendment 1

Amendment 5

Annex I, Chapter I "Cooperation", subtitle "Themes", point 5 " Environment (including Climate Change)", subtitle "Activities", bullet 2, indent 1

Conservation and sustainable management of natural and man-made res

ources: ecosystems; water resources management; waste management and prevention; protection and management of biodiversity, soil protection, seabed and coastal areas protection, approaches against desertification and land degradation; forest

– *Conservation and sustainable management of natural and man-made resources*: ecosystems; water resources management; waste management and prevention; protection and management of biodiversity, soil protection, seabed and coastal areas protection, approaches against desertification and land degradation; forest, *energy and mineral* resource management;

management; sustainable management and planning of urban environment, data management and information services; assessment and foresight relating to natural processes.

sustainable management and planning of urban environment, data management and information services; assessment and foresight relating to natural processes.

Justification

Energy and mineral resources are natural resources and they are as much in need of conservation and management as the other listed natural resources, as highlighted in the Thematic Strategy on the Sustainable Use of Natural Resources.

Amendment 6

Annex I, Chapter I "Cooperation", subtitle "Themes", point 5 " Environment (including Climate Change)", subtitle "Activities", bullet 3, indent 1

Environmental technologies for observation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment: related to water, climate, air, marine, urban and rural environment, soil, waste treatment, recycling, clean production processes, chemicals safety, protection of cultural heritage and of the built environment.

– Environmental technologies for observation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment: related to water, climate, air, marine, urban and rural environment, soil, **energy, minerals**, waste treatment, recycling, clean production processes, chemicals safety, protection of cultural heritage and of the built environment.

Justification

See amendment 5: energy and mineral resources are part of the natural environment

Amendment 7

Annex I, Chapter I "Cooperation", subtitle "Themes", point 5 " Environment (including Climate Change)", subtitle "Activities", bullet 3, indent 2

Technology assessment, verification and testing: Methods and tools for environmental risk and lifecycle assessment of processes, technologies and products; support for sustainable chemistry, water supply and sanitation Platforms¹; scientific and technological aspects of a future European environmental technologies verification and testing programme.

Technology assessment, verification and testing: Methods and tools for environmental risk and lifecycle assessment of processes, technologies and products; support for sustainable chemistry, **energy, mineral resources**, water supply and sanitation Platforms ; scientific and technological aspects of a future European environmental technologies verification and testing programme.

Justification

See amendment 1 and the Thematic Strategy on the Sustainable Use of Natural Resources

Amendment 8

Annex I, Chapter I "Cooperation", subtitle "Themes", point 5 " Environment (including Climate Change)", subtitle "Activities", bullet 4, indent 1

– Earth observation: Contribute to the development and integration of observation systems for environmental and sustainability issues in the framework of GEOSS; interoperability between systems and optimisation of information for understanding, modelling and predicating environmental phenomena..

Earth observation: Contribute to the development and integration of observation systems for environmental and sustainability issues in the framework of GEOSS; interoperability between systems and optimisation of information for understanding, modelling and predicating environmental phenomena, **for assessing, exploring for and managing natural resources.**

¹ The research agendas of these European Technology Platforms will be taken into account in the different activities.

Justification

Earth Observation technologies are also of great importance for assessing, exploring for and managing natural resources. They are very important in domains such as forestry, soils conservation, agriculture; water, energy and mineral resources.