

# Summary

## *Community Civil Protection cooperation*

Community co-operation in the field of civil protection aims to better protect people, their environment, property and cultural heritage in the event of major natural or manmade disasters occurring both inside and outside the EU.

It is a long term tradition for EU Member States to express their solidarity with EU Member States and third countries affected by major disasters by providing civil protection assistance. However, the coordination of the assistance provided by the Member States has only really started a decade ago. This coordination has increased the international role that the European Community is playing in the provision of civil protection assistance. The European response provided in many major disasters such as the 2004 South Asia tsunami, the 2005 US hurricanes, the 2007 Greek forest fires, the 2008 earthquake in China and floods in Romania, Moldova and Ukraine, and the most recent 2009 Italy earthquake, bear witness to this.

EU institutions and EU Member States have over time increased their reliance on co-operation for the provision of civil protection assistance in order to be as effective as possible on the site of a disaster. There is clear added-value in working together. Such co-operation allows for the pooling of resources, maximising the collective European effort on site.

## *The role of the Mechanism*

Based on this realisation, the EU has developed and continuously reinforced the *Community Civil Protection Mechanism (the Mechanism)* which facilitates these cooperation efforts for responding to major disasters that overwhelm national response capacities in EU Participating States as well as third countries.

The main role of the Community Mechanism for Civil Protection is to facilitate co-operation in civil protection assistance interventions in the event of major emergencies which may require urgent response actions. This applies also to situations where there may be an imminent threat of such major emergencies. It is therefore a tool that enhances community co-operation in civil protection matter. The Mechanism was established by the Council Decision of 23 October 2001. A Recast of this Council Decision was adopted on 8 November 2007.

In accordance with the principle of subsidiarity, it can provide added-value to European civil protection assistance by making support available on request of the affected country. By pooling the civil protection capabilities of the Participating States, the Community Mechanism can ensure even better protection primarily of people, but also of the natural and cultural environment as well as property.

So as to enable and ensure an effective delivery of assistance, teams working in emergencies need to be mobilised rapidly and to be capable of working effectively in an international environment with teams of other countries, international organisations, and non-governmental

organisations. Moreover their work needs to be well co-ordinated while requiring flexibility. In order to achieve this, the Mechanism has its own tools that help to ensure this.

#### *How to improve the overall European disaster response capacity*

In its Communication on reinforcing the Union's disaster response capacity<sup>1</sup>, the Commission committed to launching a series of activities to develop the necessary knowledge base for policy debate and decisions regarding the improvement of the overall European civil protection capacity available for responding to major disasters occurring in the EU or hitting third countries.

#### *Aim of this study - a scenario approach*

In this context, the Directorate General for Environment of the European Commission has contracted this study.

This study focused on building scenarios for various types of disasters as a tool to explore potential gaps in current civil response capacities – both quantitative and qualitative gaps. Scenarios were developed for the following disaster types and locations. For each type of disaster one scenario was located within the EU and for some types an additional scenario was located in a third country:

- EU winter storm scenario and international windstorm scenario
- EU and international flood scenarios
- EU and international earthquake scenarios
- EU and international tsunami scenarios
- EU oil spill scenario
- EU forest fire scenario
- EU chemical accident scenario

These future disaster scenarios have been constructed based on existing information on past disasters, which provided insight in the likely risk of the various hazards and impacts and civil protection response needs of similar disasters in the past using regional averages for the disaster site. This required a review of available information on past disasters which is summarised in chapter 3.

For each scenario a basic scenario description table has been developed including the following contents: characterisation of the hypothetical scenario (description of the initial event, disaster site, immediate impacts); needed response resources (and how much of it can be addressed by the national response capacity versus how much requires external assistance).

The concept of using scenarios proved useful during the workshop gathering experts from the Member States held on December 4, 2008, not only for analysing the type of response needed for the various scenarios and defining the niche for the Mechanism, but also to identify the potential obstacles to the provision of needed assistance through the Mechanism. The workshop concluded that the scenario approach could be further explored in future exercises, for contingency planning and for operationalising the functioning of the Mechanism in a broader context in order to highlight the added value of the Mechanism.

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<sup>1</sup> COM (2008) 130 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0130:FIN:EN:PDF>

### *Inventorying current disaster rapid response capacities*

In order to carry out the next step of determining the potential gap of response capacities versus needed response resources for the various types of disasters an inventory for comparison is determined: the current civil response capacity in Europe (Chapter 4). This inventory is based on the consolidated outcomes of a questionnaire completed by the Participating States combined with latest European Commission information. The inventory is focused primarily on the so-called civil protection modules. Civil protection response modules are task and needs driven pre-defined arrangements of resources of the Participating States. Thirteen different modules for heavy type of response resources have already been defined in a technical framework under the Mechanism and they aim to enhance European preparedness and response efforts. The modules are being developed since end 2007 to become the major components of the EU's rapid response capacity for natural and man-made disasters. Significant efforts of the Commission and the Participating States aim at enhancing the capacity of the modules to intervene in an international environment as well as their interoperability.

Whilst civil protection modules will increasingly become the basis for significant European civil protection assistance operations launched through the Mechanism, their action will often be complemented by the provision of other in-kind assistance such as for example low capacity equipments (e.g. pumps) and relief items (e.g. tents, blankets).

In view of the above and taking into account the type of information available from the European Commission as well as the type of information revealed in quantitative terms by Participating States, response capacity for the purpose of this study focuses mainly on civil protection modules.

### *Registered and reported resources at European level*

In January 2009, the European civil protection rapid response capacity included a total of 86 modules (of which 82 have been registered at the Mechanism). Modules include high capacity pumping, water purification, various types of urban search and rescue, forest fire fighting planes, mobile medical posts and field hospitals, medical aerial evacuation capacity, and chemical, biological, radiological and nuclear (CBRN) sampling and detection equipment as well as search and rescue specialised for CBRN situations. In addition to these technical modules, the Mechanism's capacity includes 8 technical assistance support teams providing support functions, such as kitchen, shelter, IT, logistics, etc. (of which 7 have been registered). At this point in time no forest fire fighting module using helicopters (FFFH) has been registered, nor do any emergency temporary shelter (ETS) modules currently exist. In the near future, by the end of 2010, when taking into account planned modules, this capacity will likely increase by about 40 to 44% of its current capacity, and the capacities will likely also be more balanced across all types of modules, including the two modules that are currently not covered yet (FFFH and ETS).

Type of Module	Registered modules	Planned modules	When?	Total number of modules likely registered by the end of 2010
High capacity pumping module (HCP)	19	5	tbd	19 - 24
Water purification module (WP)	4	5	2 early 2009; others tbd	7 - 9
Medium urban search and rescue module (MUSAR)	20	3	2010	23

Type of Module	Registered modules	Planned modules	When?	Total number of modules likely registered by the end of 2010
Heavy urban search and rescue module (HUSAR)	8	2	One in 2010; other tbd	9 - 10
Aerial forest fire fighting module using helicopters module (FFFH)	0	2	tbd	0 - 2
Aerial forest fire fighting module using airplanes module (FFFP)	3	1	1 early 2009; others tbd	3 - 4
Advanced medical post module (AMP)	11	3	3 early 2009	14
Advanced medical post with surgery module (AMPS)	2	5	3 early 2009; others tbd	5 - 7
Field hospital module (FHOS)	2	3	2009	5
Medical aerial evacuation of disaster victims module (MEVAC)	2	1	2009	3
Emergency temporary shelters module (ETS)	0	4	2009	4
Chemical, biological, radiological and nuclear detection and sampling (CBRN) module (CBRNDET)	11	5	4 early 2009; others tbd	15 - 16
Search and rescue in CBRN conditions module (CBRNUSAR)	4	2	1 early 2009; others tbd	5 - 6
Technical assistance support team (TAST)	8	2	2009	10
<b>Total quantity of modules</b>	<b>86</b>	<b>41</b>		112 - 125
<b>Total quantity of modules + TAST</b>	<b>94</b>	<b>43</b>		<b>122 - 134</b>

Furthermore, the MIC has trained over 600 experts, some of which can be rapidly deployed to the place of crisis to perform assessment and coordination tasks.

In addition to the registered modules, national capacities of Participating States also include other types of response resources currently not standardised into modules. For some of these a qualitative inventory of reported additional types of resources has been established; for others it is unknown if and what quantities exist on national levels and their degree of preparedness for being made available and intervening in international civil protection operations.

*Identification of potential gaps in the overall EU civil protection response capacity*

Chapter 5 identifies the potential qualitative and quantitative gaps in the overall EU civil protection response capacity. It builds on the information gathered through the questionnaires filled by the Participating States, interviews of experts and latest information available at the European Commission. Potential gaps were identified on a general level in the questionnaires and on a more disaster-specific level during the expert workshop and interviews. As a next step, findings were synthesised in five categories of potential Mechanism response capacity gaps:

- (a) gaps hindering the degree of availability of existing resources;
- (b) lack of sufficient quantities of major categories of resources;
- (c) lack of sufficient quantities of specific equipment or expertise;
- (d) lack of information on specific categories of equipment or expertise;
- (e) limited preparedness of major categories of response resources.

The following table provides an overview of the specific gaps per gap category and presents potential generic policy options (labelled ii to vii in the table below) for filling the Mechanism response capacity gap. Policy options are compared to the status quo – the ‘no action’ situation (option i).

Category of Mechanism response capacity gap	Gap #	Mechanism response capacity gaps	Potential generic options for filling the Mechanism response capacity gap
<b>(a) Gaps limiting the availability of existing resources</b>	1	Funding to cover the transportation and deployment of response resources	The qualitative issues related to logistics and operational issues may have major impacts on the effectiveness of the EU response to requests for assistance. Policy options for addressing these issues include:  (ii) strengthening co-financing options for covering transportation/deployment costs for provided assistance (the Commission would cover 100% of the cost of transporting/deploying the assistance provided by Participating States);
	2	Capacity to transport the response resources to the site	(iii) empowering the Commission to mandate the dispatch of national resources, with financing by the Commission. This option mirrors the system applied in the regulation establishing the FRONTEX agency. However, given the wide range of possible civil protection interventions and diversity of type of resources, this option would rely on a well defined pool of civil protection modules that would be maintained on high alert;
	3	Lack of EU capability to mandate the dispatch of response resources	(iv) Agreements between the Commission and the Participating States that guarantee the availability of specified resources during specified periods - with or without financing by the Commission;
	4	Lack of EU capability to mandate the dispatching of experts	(v) strengthening the current responsibilities of the Commission to further improve the assessment of needs and the coordination of assistance: the role of the MIC in on-site disaster response coordination should be reinforced. This should be supported by highly available experts that the Commission is able to mobilise at very short notice, on the model applied by the UN to UNDAC experts, which requires simplified mobilisation procedures and direct access for the Commission to the experts.
	5	Although improving, still limited MIC capability in the areas of: <ul style="list-style-type: none"> <li>Assessment;</li> <li>On-site coordination, including regarding local distribution, local transport, local procurement</li> <li>Support to deployment (e.g. information on health and safety aspects)</li> </ul>	
	6	Limited availability of aerial fire fighting resources, both fixed and rotary wing aircraft, if the whole EU forest fire prone region faces conditions of severe forest fires risks.	
<b>(b) Lack of major categories of resources</b>	7	Lack of mobile units of medium capacity pumping equipment.	Policy options for addressing this type of gap include:  (vi) increasing national capacities in combination with promoting registration of modules/resources under the Mechanism;
	8	Water purification equipment – especially when large quantities of large scale water purification and/or small-scale more mobile units for small, remote villages are required.	(vii) developing EU level capacities based on contractual agreements (e.g. framework agreement in public tender) with a third party (private or public) including human resources and equipment defining also terms of rapid deployment and transport.
	9	High capacity emergency temporary shelter.	
	10	Lack of field hospital modules – this includes a need for larger field hospitals.	
	11	Emergency evacuation capacity to expatriate EU citizens.	
	12	Limited quantities of registered AMP (Advanced Medical Posts) modules.	
	13	Limited quantities of aerial fire fighting resources, both fixed and rotary wing aircraft.	
<b>(c) Lack of specific equipment or expertise</b>	14	Limited existence of equipment suitable for sub-zero operations, such as winterised tents and medical facilities.	Policy options for addressing these gaps are the same as for the above category.  However option (vii) is probably only relevant for developing the MIC's damage assessment/surveillance capability.
	15	Lack of sufficient capacity in treatment of burnt victims.	
	16	Mobile power supply to a number of critical operations, e.g. hospitals, emergency centres, police, military, schools.	
	17	Damage assessment / surveillance equipment, incl. planes and/or satellites for deployment by the MIC	
	18	Limited existence of temporary waste discharge and	

		storage facilities for oil spill response	
<b>(d) Lack of information on specific categories of equipment or expertise</b>	19	Stock piling of medicine, antidotes and antibiotics: The stock piling of the antidotes is necessary to treat the large number of casualties.	These gaps require an inventory. In case quantitative gaps are discovered appropriate option will need to be considered for filling the identified gaps.
	20	Portable dryers, floating pumps, electric submersible pumps, and water filters.	
	21	Purification tablets / their degree of availability.	
	22	Availability of specialist companies to repair underwater cables.	
	23	Body bags and cooling equipment to collect bodies quickly to limit the spread of diseases and to centralise them for body ID process.	
	24	Portable communications equipment.	
<b>(e) Limited preparedness of major categories of response resources</b>	25	Terrestrial fire fighting resources.	This requires the Commission to launch new preparedness activities to address the identified gaps. This may take the form of the creation of new categories of civil protection modules, specific courses/exercises, etc.
	26	SAR in flooding conditions and in mountainous areas	
	27	Scientific back office for ensuring adequate support of CBRN teams and modules on site.	
	28	Shoreline clean-up, including availability of equipment, protective gear for volunteers.	
	29	Post-disaster psychological support with appropriate language skills and cultural awareness for external assistance deployment.	

Chapter 6 then analyses the identified policy options in more detail for each gap category as regards their potential cost implications, environmental and social impacts, likely level of effectiveness in terms of reducing the gap and in terms of the social and political feasibility of the option.

#### *Policy options for addressing major gaps*

The detailed major gaps in terms of (a) ‘gaps hindering the degree of availability of existing resources’ and (b) ‘lack of sufficient quantities of major categories of resources’ as listed in the table above essentially boil down to the following issues:

1. Limited availability of resources (gaps 1 to 6), i.e. the lack of capacity to guarantee deployment because of soft factors and access to transport solutions is a major obstacle to deployment. Currently we cannot guarantee European solidarity for these resources.
2. Some major categories of resources are limited in their existence: (resources listed as gaps 7 to 13). This insufficient quantity of existing amounts of the respective resources limits the capacity of European solidarity to address the potential needs in these fields.

These major gaps require an in depth reform of the Mechanism to move to a situation where European solidarity is guaranteed. Some of the most feasible policy options for inducing such a reform and improving the availability of resources (addressing gaps listed under category (a) ) have been assessed in this study:

- (ii) Strengthening co-financing options for covering transportation/deployment costs for provided assistance (the Commission would cover 100% of the cost of transportation/deploying the assistance provided by Participating States);
- (iii) Empowering Commission to mandate the deployment of registered national resources (Frontex model of mandatory solidarity), provided that resources would be financed by Commission; and

- (iv) Agreements between the Commission and the Participating States that guarantee the availability of specified resources during specified periods, provided resources would then be financed by the Commission.

All options would significantly improve the level of burden sharing and thus offer improved means of deploying nationally available resources for external assistance. While option (ii) is complementary, options (iii) and (iv) present possible alternatives for the reform path: the main difference between them is the centre of gravity of decision-making would reside more with the Community under option (iii) and more with the Member States under option (iv).

Similarly, to reform the Mechanism towards improved quantities of currently limited or missing resources (addressing gaps listed under category (b) ), two policy options have been assessed during this study:

- (vi) Increase national capacities; in combination with promoting registration of modules/resources under the Mechanism; and
- (vii) Develop centralised EU level capacities based on contractual agreements incl. both human resources and equipment defining also terms of rapid deployment and transport.

For most of the gaps in this category, the easiest option is (vi) increasing national capacities in combination with promoting registration of modules/resources under the Mechanism. However, for some of the specific gaps, such as gap 13 ‘limited quantities of aerial fire fighting resources, both fixed and rotary wing aircraft’ option (vii) may be a more cost-effective solution than building up parallel national capacities. Again, the major difference between options lies in (1) the centre of gravity of the decision-making power, and (2) the extent of sharing of cost-burden of solidarity between all Participating States.

To address gap #5 (MIC’s limited capability in the areas of rapid assessment and on-site coordination, and support to deployment, the application of policy option (v) ‘strengthening the current responsibilities of the Commission to further improve the assessment of needs and the coordination of assistance’ represents a potential additional Mechanism capability development in order to better address civil protection response needs in the future. By expanding the support role and activities the Mechanism can play during the deployment phase and strengthening the MIC’s capacity to rapidly and more accurately assess the real response needs, European assistance should become more relevant in terms of the type of response resource and the quantities provided, etc. Combined with a reinforced role of the MIC in on-site disaster response coordination, these niches for policy improvements have the potential to lead to significant increases in Mechanism capacity and cost-effectiveness.

#### *Policy options for addressing other (less extensive) gaps*

The slightly less extensive gaps listed under gap category (c) ‘lack of specific equipment and expertise’ can be addressed via similar policy options and require the same type of Mechanism reform and movement towards greater solidarity and burden sharing.

For gap #15 (lack of capacity for the treatment of burnt victims) a variant of policy options was drawn up: ‘no action’ (i), ‘increased national capacity with availability through the Mechanism’ (vi), or ‘revised AMP module to include several beds for the treatment of severe burn victims’ (viii). Overall, implementing one of the two policy variants is likely to have positive outcomes as compared to the ‘no action’ scenario. However, further detailed research would have to be carried out to determine whether it is more effective and efficient to evacuate the burn victims and fly them to specialised hospitals around Europe, or whether it would be advantageous to revise the AMP, AMPS or FHOS modules to request these units to

include specialised beds and treatment for severe burn victims. First input from previous experience and experts suggests that it is more effective to fly severe burn victims to specialised hospitals rather than sending expert doctors and facilities to the disaster site.

#### *Need for further research and analysis*

All gaps identified under category (d) ‘lack of information on specific categories of equipment or expertise’ require further in-depth analysis, including inventories, before being able to develop meaningful policy options. Such exercise of further information gathering and analysis will likely improve preparedness and may reveal further gaps.

#### *Need for strengthened preparedness activities*

All gaps falling under category (e) ‘limited preparedness of major categories of response resources’, could likely be significantly reduced or eliminated via new and strengthened preparedness activities offered by the Mechanism to address the identified gaps. This may take the form of creating new categories of civil protection modules, specific courses, etc.

#### *Conclusions*

Chapter 7 presents the main findings that can be drawn from this study and whenever possible identifies the areas in which clear added value and reduced cost of shared resources has been determined.

The key conclusion of this study is that the Mechanism currently facilitates assistance without guaranteeing European assistance; but that several options exist that have the potential to reform the Mechanism into a tool that guarantees European assistance across a wide variety of disaster response resources. As this conclusions chapter highlights, the main condition of this system to function is the sharing between all Member States of the cost burden of European assistance, as well as various policies to improve the availability of equipment and expertise for rapid deployment.

The assessment of options for addressing current insufficiencies in coastal oil spill clean up resources has signalled a clear niche where improvements on the European level (option ix) and thus a new role for the Mechanism would make sense. Careful analysis shows that a centrally coordinated, standardised system of modules for shoreline oil spill response can guarantee the appropriate equipment, sufficient waste disposal / separation containers, trained teams and proper safety measures which significantly reduce overall costs, increase clean-up efficiency and effectiveness and consequently reduce health impacts and negative environmental effects.