



Evaluation of Civil Protection Mechanism- Case study report - Forest Fires in Europe

November 2014



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List of acronyms

CCB	Central Coordination Body for Civil Protection of Greece
CECIS	Common Emergency Communication and Information System
CP	Civil Protection
CPC	Civil Protection Committee
CRED	Centre for Research on the Epidemiology of Disasters
DG ECHO	Directorate General Humanitarian Aid and Civil Protection
DG ENV	Directorate General for the Environment
EC	European Commission
EFFIS	European Forest Fire Information System
EM-DAT	Emergency Events Database led by the Centre for Research on the Epidemiology of Disasters (CRED) of the University of Louvain, Belgium
EO	Earth Observation (Copernicus Satellite Imagery)
ERCC	Emergency Response and Coordination Centre
EU	European Union
EUCPT	European Civil Protection Team
GSCP	General Secretariat for Civil Protection of Greece
HNS	Host Nation Support (guidelines)
ICNP	Inter-Ministerial Committee for National Planning of Greece
IEEP	Institute for European Environmental Policy
JRC	Joint Research Centre
LL	Lessons Learned
MIC	Monitoring and Information Centre
MS	Member States (of the European Union)
NCPA	National Civil Protection Authorities
PS	Participating States (of the Civil Protection Mechanism)
SOPs	Standard Operation Procedures

EXECUTIVE SUMMARY

Wild and forest fires take place in Europe each year during summer months, destroying hundreds of thousands of hectares of vegetation and threatening the lives and possessions of many Europeans. During the period 2007-2013, over 60,000 forest fires took place annually in European countries that are affected by the hazard. Over the evaluation period the European Civil Protection Mechanism ('the Mechanism') was activated 50 times in response to forest fires in Participating States. The Mechanism is thus activated only in a tiny fraction of forest fire events, when the scale of the hazard exceeds national response capacities.

As forest fires are recurring events, the Mechanism has developed coordination mechanisms and capacity to deal with the hazard. The purpose of the MIC/ERCC has been to alert Participating States about potential hazards, share information with National Civil Protection Authorities (NCPA) and reduce emergency response times to a minimum.

Additionally, Commission services and funded projects have created technical and scientific tools in order to support firefighting activities: The European Forest Fire Information System (EFFIS) which is an early warning system that gives an estimation and forecast of burnt area across Europe. The European Earth Observation (EO) Programme Copernicus is an entry point for activating satellite imagery which is used for emergency management and monitoring of land and forests in order to predict winds and thus, the movement of fires. The European Forest Fire Tactical Reserve (EU FFTR) projects funded in 2009 and 2010 tested a procedure which is still facilitating EU communication and coordination of the disaster response by the Mechanism; for instance video conference and e-bulletin. The Mechanism makes use of two types of modules, each with two sub-categories specifically designed for tackling forest fires: aerial forest fire fighting with helicopters or airplanes, and ground forest fire fighting with or without vehicles. Furthermore, DG ECHO provided Participating States with transport grants in order to reimburse sending States for some of their deployment expenses. At an operational level, Host Nation Support (HNS) guidelines provided a common understanding of what was expected from host civil protection authorities, international intervention teams, the European Commission (EC), and transit nations during an emergency in general and Forest Fires in particular.

*The Mechanism offered **highly relevant products and services** for tackling forest fires; especially when national capacities were overwhelmed. The MIC/ERCC provided **effective facilitation of assistance** but the main achievement, as argued by stakeholders, was the **interoperability of equipment, personnel and procedures**. The Mechanism's components such as modules, training programme, transport facility, etc. **enhanced the efficiency of the response**, and countries were better prepared and quicker in combating forest fires. The use of early-warning technology and the pre-alerted mobilisation of assistance reduced response time to a minimum.*

The alignment of national strategies and procedures according to the HNS guidelines allowed for a coherent delivery of forest fire assistance across Participating States.

*Moreover, the MIC/ERCC brought **added value in information sharing and knowledge management**. The exchange of knowledge with civil protection professionals from other European countries through regular meetings was perceived as indispensable for national authorities. Additional capacity on community level via the EU FFTR projects was a subject often mentioned by stakeholders and provides ground for further debate.*

The specific areas that require further consideration are as follows:

- *Relevance of the helicopters module;*
- *Current fragmented approach to funding prevention and preparedness projects in the area of forest fires.*

1 Background and context

1.1 Introduction to the case study

This case study examines the use of the EU Civil Protection Mechanism ('the Mechanism') for dealing with forest fires in Europe over the period 2007 to 2013. The case study focuses in particular on the two most affected EU countries in order to draw lessons from their experience of the Mechanism's activations in the context of forest fires:

- Greece, which activated the Mechanism eleven times over the period covered by the evaluation; and
- Portugal, which activated the Mechanism eight times over the same period.

1.2 The risk and impact of forest fires in Europe

In Europe, wild and forest fires take place every year and mostly during summer months, destroying hundreds of thousands of hectares of vegetation and threatening the lives and possessions of many (see Tables 1.1 and 1.2, Figure 1.1 and 1.2). The term "wildfires" includes all kind of grass, bush, vegetation, sub-land and forest fires. It differs from other fires by its extensive coverage of land mass, the speed with which it can spread out, its potential to unexpectedly change direction due to natural winds, and its ability to jump over roads, rivers and other barriers. The term "forest fires" refers to "*fires that spread on forests and other wooded land*"; by definition it excludes controlled burning with the aim of reducing or eliminating the quantity of accumulated fuel on the ground¹.

Wild and forest fires are caused by various factors. In 2007 the Institute for European Environmental Policy (IEEP) assessed the causes and contributing factors of forest fires in Europe for the European Parliament's Committee on the Environment, Public Health and Food Safety². The study found human activity to be the main cause for inducing fires. Other common causes of forest fires identified by the report were: a lack of incentives for investments in forest management (leading to less control over fuel material and reduced local monitoring) and a lack of reliable fire monitoring and forecasting systems in many of the affected countries that would allow an early response to fire³. Extreme weather and increasing global temperatures due to climate change as well as expansion of human activity in risk areas were considered as exacerbating drivers.

Table 1.1 and Figure 1.1 on the next page provide an indication of the scale of the problem. According to a JRC report on forest fires, over 60,000 forest fire events took place in European countries over the period 2007 to 2013 (the sixteen most affected are listed in Table 1.1)⁴. Forest fires in Portugal and Spain have consistently accounted for over 50 per cent of all events. However, the occurrence of forest fires is more unpredictable in other EU Member States e.g. Italy, Poland or Hungary. Table 1.2 and Figure 1.2 on the following page show the area burnt in hectares over the evaluation period, illustrating the severity of forest fires over the evaluation period. The years 2007 and 2012 were particularly serious in this regard.

¹ Regulation (EC) No 2152/2003, 17 November 2003, "concerning monitoring of forests and environmental interactions in the Community (Forest Focus)", Article 3(d)

² IEEP, 2007, "Forest Fires: causes and contributing factors in Europe"

³ JRC, 2013, "Forest Fires in Europe, Middle East and North Africa 2013", p6ff

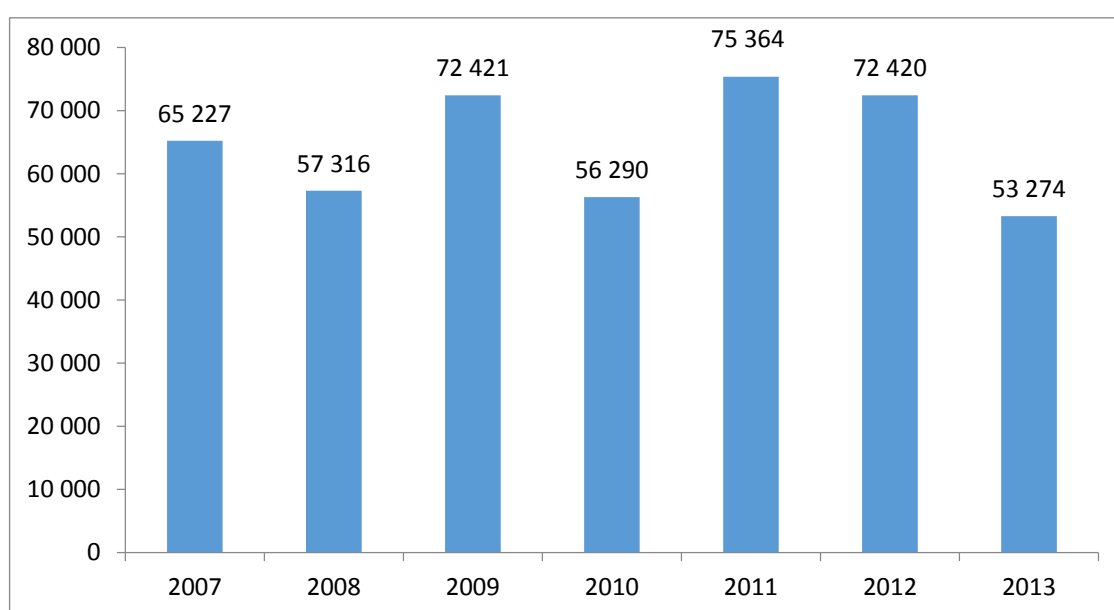
⁴ JRC, 2013, "Forest Fires in Europe, Middle East and North Africa 2013", p6ff

Table 1.1 Number of forest fires in selected European countries (2007-2013)⁵

Country	2007	2008	2009	2010	2011	2012	2013
Cyprus	111	114	91	133	85	78	135
Finland	1,204	1,456	1,242	1,412	1,215	417	1,452
France	3,364	2,781	4,800	3,900	4,500	4,105	2,223
FYROM	652	573	80	99	523	483	186
Germany	779	818	858	780	888	701	515
Greece	1,983	1,481	1,063	1,052	1,653	1,559	862
Hungary	603	502	608	109	2,021	2,657	761
Italy	10,639	6,486	5,422	4,884	8,181	8,252	2,936
Latvia	425	700	823	316	360	162	422
Poland	8,302	9,090	9,162	4,680	8,172	9,265	4,883
Portugal	18,722	13,832	26,119	22,026	25,221	21,176	19,291
Romania	478	91	190	70	340	882	116
Slovakia	463	182	347	127	303	517	233
Spain	10,936	11,655	15,643	11,721	16,414	17,503	10,626
Sweden	3,737	5,420	4,180	3,120	3,534	2,213	4,878
Turkey	2,829	2,135	1,793	1,861	1,954	2,450	3,755
Total	65,227	57,316	72,421	56,290	75,364	72,420	53,274

Source: JRC, 2013, "Forest Fires in Europe, Middle East and North Africa 2013", p106

Figure 1.1 Number of forest fires between 2007 and 2013 in 16 European countries



Source: JRC, 2013, "Forest Fires in Europe, Middle East and North Africa 2013", p106

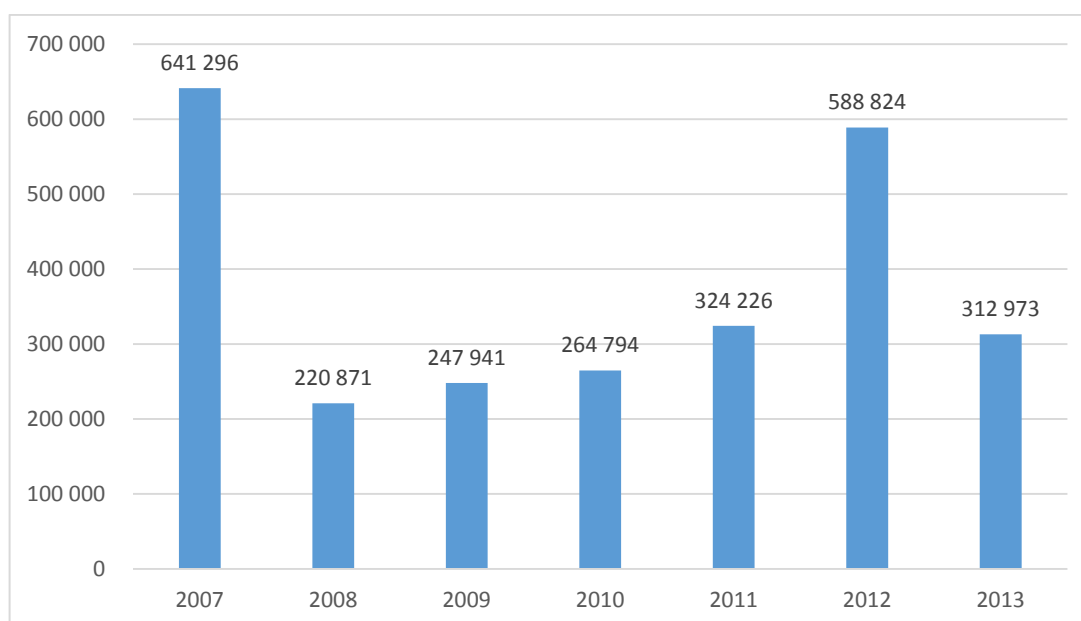
⁵ The list portrays the sixteen most affected countries in Europe over the evaluation period. The top four are furthermore highlighted in bold.

Table 1.2 Burnt area (ha) in selected European countries (2007-2013)⁶

Country	2007	2008	2009	2010	2011	2012	2013
Cyprus	4,483	2,392	885	2,000	1,599	2,531	2,835
Finland	576	830	576	520	580	86	461
France	8,570	6,001	17,000	10,300	9,400	8,600	3,608
FYROM	32,665	5,915	1,307	737	17,308	10,021	1,261
Germany	256	538	757	522	214	269	199
Greece	225,734	29,152	35,342	8,967	29,144	59,924	46,676
Hungary	4,636	2,404	6,463	878	8,055	13,978	1,955
Italy	227,729	66,329	73,355	46,537	72,004	130,814	29,076
Latvia	272	364	646	92	115	90	217
Poland	2,841	3,027	4,400	2,126	2,678	7,235	1,289
Portugal	31,450	17,244	87,416	133,090	73,813	110,231	152,756
Romania	2,529	373	974	206	2,195	6,299	421
Slovakia	679	118	510	192	403	1,683	270
Spain	86,122	50,322	12,094	54,770	102,161	226,125	58,985
Sweden	1,090	6,113	1,537	540	945	483	1,508
Turkey	11,664	29,749	4,679	3,317	3,612	10,455	11,456
Total	641,296	220,871	247,941	264,794	324,226	588,824	312,973

Source: JRC, 2013, "Forest Fires in Europe, Middle East and North Africa 2013", p107

Figure 1.2 Burnt area between 2007 and 2013 in 16 European countries



Source: JRC, 2013, "Forest Fires in Europe, Middle East and North Africa 2013", p107

⁶ The list portrays the sixteen most affected countries in Europe over the evaluation period. The top four are furthermore highlighted in bold.

By looking at both tables and figures no clear trend could be identified in terms of the number of fires, burnt hectare and areas affected for the evaluation period. The fact that wildfire seasons vary greatly from year to year and region to region, suggests that the severity of the annual, local weather might be an important factor for the number of forest fires in one country.

In general, southern European countries, notably Greece, Portugal, Italy, France, Spain, Cyprus, Croatia and Bulgaria, are most affected by forest fires. Northern Member States like Poland or Sweden however, are also not completely spared from such events as demonstrated by recent events that took place over the summer months of 2014⁷.

Most of the forest fires have little or no impact on human settlements and lives. Nevertheless, according to EM-DAT data, in the past thirty years about 70 devastating forest fires occurred across Europe that affected more than one million people and left 365 people dead. The total economic damage caused by these fires is estimated to be nearly €8 billion⁸. Table 1.3 below shows the affected countries and the impacts of these 70 events.

Table 1.3 Forest fires in Europe between 1982 and 2013

Country	Occurrence	Deaths	Affected	Injured	Homeless	Total affected	Total damage, €
Spain	15	70	18,900	127	105	19,132	2,078,572
Greece	13	108	4,508	101	4,450	9,059	1,830,189
France	11	32	6,250	161	6	6,417	7,547
Portugal	9	69	150,000	186	-	150,186	2,622,642
Italy	7	21	300	20	-	320	1,283,019
Croatia	5	13	-	26	-	26	28,491
Bulgaria	4	10	-	26	150	176	15,135
Poland	2	35	-	-	-	-	-
FYROM	2	1	1,000,000	-	-	1,000,000	10,236
Slovakia	1	6	-	-	-	-	-
Albania	1	-	-	-	75	75	-
Total	70	365	1,179,958	647	4,786	1,185,391	7,875,786

Source: CRED EM-DAT, "International Disaster Database", September 2014

Boxes 1 and 2 provide further information on how forest and wild fires affect Greece and Portugal respectively, the two countries that are the focus of this case study.

⁷ Source: ECHO, August 2014, "UPDATED: EU supports Sweden in combatting ongoing forest fires", <http://ec.europa.eu/echo/en/news/updated-eu-supports-sweden-combatting-ongoing-forest-fires>

⁸ Source: CRED EM-DAT, September 2014, "International Disaster Database – Forest fires in Europe", <http://www.emdat.be/database>

Country Context: Greece

Located at the Southern end of the Balkans, Greece borders Albania, the Former Yugoslavian Republic of Macedonia (FYROM), Bulgaria and Turkey and stretches over the Peloponnese peninsula to the South into the Mediterranean Sea. Greece consists of a vast number of islands and thus holds one of the biggest coastlines in the world. Besides, the country has numerous mountains or hills, making it one of the most mountainous in Europe. The Greek climate is primarily Mediterranean, naturally mild, with wet winters and hot, dry summers. The Pindus mountain range strongly affects the climate of the country as areas to the east of the range are considerably drier than the areas in the west.

Due to its location and topography Greece is mainly affected by earthquakes, floods, wildfires, extreme temperatures and storms. According to the University of Louvain's Centre for Research on the Epidemiology of Disasters (CRED), the most deadly disasters are extreme temperatures, killing four times as much people in a quarter of events compared to earthquakes⁹. In line with hot temperatures, wild and forest fires are becoming increasingly severe due to the consequences of global warming and the spill over effects on environment and agriculture. In the list of total economic damages caused forest fires take the second rank behind earthquakes¹⁰.

Country Context: Portugal

Portugal is situated in the western end of the European continent on the Iberian Peninsula, surrounded only by Spain and the Atlantic Ocean. The Northern landscape is mountainous towards Spain whereas the South is characterised by wide plains. The country's climate is similar to Greece's and one of the warmest in Europe with summer highs over 45°C.

In the last 40 years about 35 disastrous events occurred in Portugal. A third of these related to flooding and a fourth of these to wild and forest fires; the rest related to storms, extreme temperatures and drought. Wild and forest fires are not the disaster type endangering human life the most in Portugal but, according to CRED, affected by far the largest number of people and caused the highest economic damage in total; more than the rest of all disaster types combined¹¹.

1.3 Structure of the Report

The remainder of the report provides an overview of the tools and instruments available at both EU and Participating State level, the role and assistance provided through the Mechanism and an analysis of how effective, efficient, relevant and coherent the services provided were. Besides, where possible an assessment of the added value for Participating States is provided. The document is organised as follows:

⁹ CRED EM-DAT, "Country Profile Greece", August 2014

¹⁰ CRED EM-DAT, "International Disaster Database", August 2014

¹¹ CRED EM-DAT, "International Disaster Database", August 2014

- Section 2: Prevention, preparedness and response mechanisms for dealing with forest fires;
- Section 3: Role and effect of the operational elements of the Civil Protection Mechanism;
- Section 4: Counterfactual scenarios;
- Section 5: Conclusions and lessons learned.
- Annex 1 details the case study methodology.

2 Prevention, Preparedness and Response Mechanisms for dealing with Forest Fire

This section provides an overview of the tools and mechanisms available at the EU level as well as in the two main affected countries (Portugal and Greece) which were used to deal with forest fires over the evaluation period.

2.1 Main tools and instruments at EU level for the protection against forest fires

2.1.1 Civil Protection Mechanism

As forest fires are recurring events, both National Civil Protection Authorities (NCPA) and Directorate-General for Humanitarian Aid & Civil Protection (DG ECHO) in Brussels have developed coordination mechanisms and capacity to deal with the hazard over time. Below the different components of the European Civil Protection Mechanism in regard to forest fires are outlined:

The **Monitoring & Information Centre (MIC) / Emergency Response and Coordination Centre (ERCC)**. Experts in Participating States and at DG ECHO in Brussels were constantly monitoring the forest fire risks, incidences and weather conditions across Europe (using national monitoring services and tools such the European Forest Fire Information System or EFFIS – see section 2.1.2) the season and as soon as early warning indicators reached a certain threshold, the Mechanism was activated in a “pre-alert” mode. When the scale of a fire exceeded national response capacities, the Mechanism was fully activated through a formal request for assistance by the affected state. A coordinated response from countries offering support was then channelled through the MIC/ERCC after the acceptance of assistance by the receiving state.

The **Common Emergency Communication and Information System (CECIS)** has been the communication tool through which NCPAs and DG ECHO stayed connected and exchange information in regard to disasters. Between 2007 and 2013, CECIS was not only used for activations but was moreover a virtual platform to register capacities or post lessons learned after emergency missions.

To support operations, DG ECHO has developed the system of **Host Nation Support (HNS) guidelines** and **Standard Operation Procedures (SOPs)** in order to have a common understanding of what is expected from NCPA, international intervention teams, the European Commission (EC) i.e. DG ECHO, and transit nations. The guidelines contain details about basic principles, scope, emergency management, safety and security, as well as legal and financial issues for instance. HNS guidelines are publicly available and each country has to develop a national version. The specifics of the support guidelines were tested during simulation and module exercises.

In 2008 and 2009 DG ECHO approved two separate projects (one pilot project and one preparatory action for the Mechanism), which were carried out under the same name and specifically aimed at improving response capacity for forest fires. As part of the **European Forest Fire Tactical Reserve (EU FFTR) 2009 and 2010**, DG ECHO funded two Canadair

airplanes¹² in each of the two years as additional firefighting capacity during the forest fire season. The two planes were based on the French Mediterranean island Corsica and thus in an ideal, strategic location in the centre of Southern Europe.

DG ECHO played furthermore a key role in information and knowledge sharing between Participating States in the context of wild and forest fires:

- **Weekly video conferences:** each Thursday during the forest fire season, a video conference was organised with Participating States prone to forest fires, for example France, Italy, Spain, Portugal and Greece. Over time participation in these weekly conference calls expanded to include Croatia and colleagues from EFFIS. The video conference was generally open to all Participating States¹³ and provided a platform for information exchange and forward planning. Typically the following topics were discussed:
 - Developments during the previous week;
 - Current emergencies;
 - Forecasts;
 - Availability of capacity.

The purpose of the weekly video conference was to foresee requests for assistance and availability of response means. The video conferencing provided a possibility to pre-alert other countries in order to give Participating States more time to prepare assets and obtain necessary approvals from hierarchy. For example, one interviewee explained that the decision to deploy an aircraft can take some time as internal approvals were required considering that costs of deployment were significant¹⁴ and that the asset might not be 'owned' by the national CPA (Some class of assets for example, were often under the command and control of military authorities).

- **Annual expert exchange:** each summer, two experts from Participating States reinforced ECHO staff at the MIC/ERCC in monitoring forest fires. The purpose of this exchange of experts was to provide Participating States officials with an opportunity to understand how MIC/ERCC worked and to train officials on the use of EFFIS. As part of this exchange, bilateral meetings were organised with Unit A5 of DG ECHO so officials could get a better understanding of how the Directorate worked.
- **Annual meetings:** DG ECHO and the Environment Directorate-General (DG ENV) jointly organised annual meetings with Participating States and their respective departments of forestry to discuss forest fire issues in order to update both sides on the latest developments and to share good practices and lessons learned which were experienced over the past year.

¹² Canadair Ltd. was a civil and military aircraft manufacturer in Montreal, Canada and is now part of the Bombardier Group. The company produces "flying boats" which maintain a few niche uses such as for dropping water on forest fires.

¹³ Participation in the video conference has technical limitations. Not all 31 Participating States would be able to join at the same time; in fact the maximum capacity is up eight contact points. DG ECHO solves the issue via a rotation system in case there is too high demand.

¹⁴ The interviewee stated that the deployment of an aircraft from for example France to Sweden costs between € 100,000 and € 200,000.

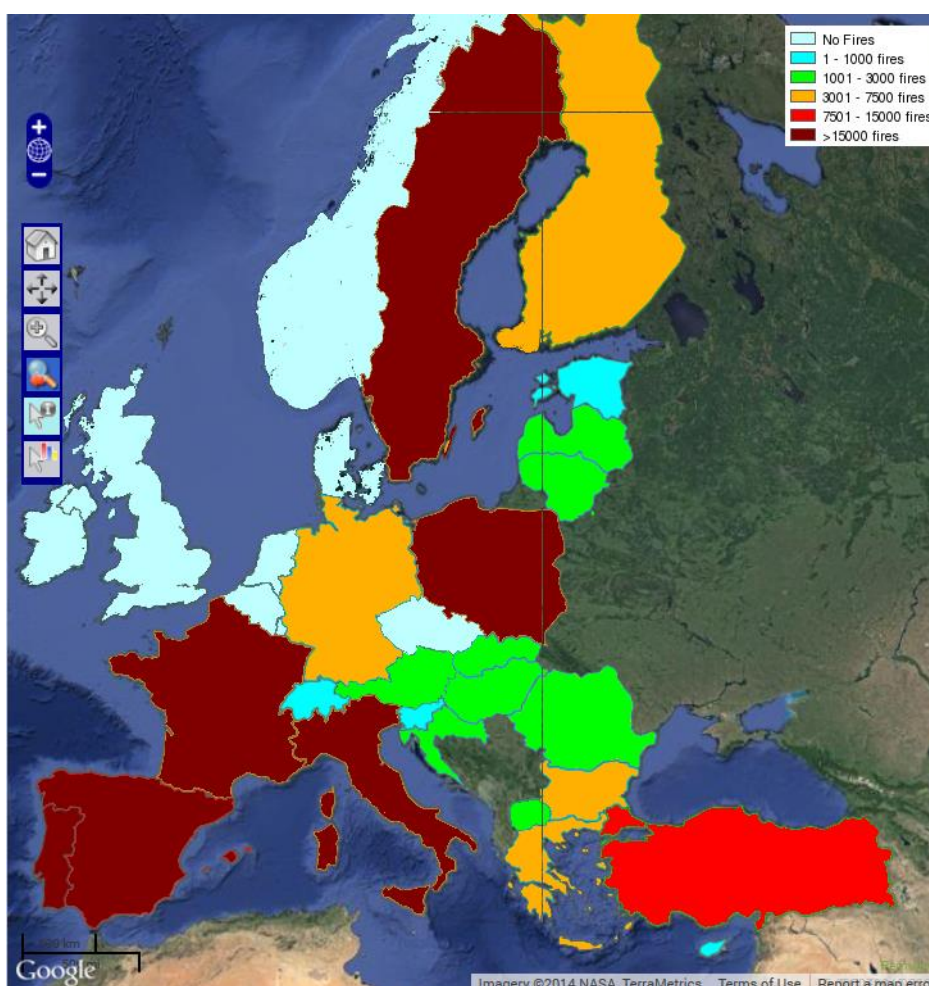
- Before the forest fires season, the ERCC organises meetings with all the Participating States in the EU Civil Protection Mechanism for an exchange of information on the state of preparedness for the upcoming forest fires season.

Sections 2.1.2 and 2.1.3 describe in more detail the more technical and scientific tools which have been specifically developed or adapted for the European forest fire context.

2.1.2 European Forest Fire Information System (EFFIS)

The **European Forest Fire Information System (EFFIS)** was developed by the European Commission’s Joint Research Centre (JRC) and financed by DG ENV and DG ECHO. Since 2000, the forest fire situation in Europe has been constantly monitored by EFFIS, an early warning system providing estimations and forecasts across Europe. It aimed to provide EU level assessments of situations before and after fires and to support fire prevention through risk mapping, and promote preparedness, firefighting and post-fire evaluations. The objective of EFFIS was not to duplicate or substitute national databases, but to provide information with a pan-European reach¹⁵. Figure 2.1 depicts the European continent and groups the states by the number of wildfires between 2007 and 2011.

Figure 2.1 Number of wildfires in European countries (2007-2011)



Source: JRC - EFFIS, 2014, “Fire History”, <http://forest.jrc.ec.europa.eu/effis/applications/fire-history/>

¹⁵ JRC, 2014, “European Forest Fire Information System”, <http://forest.jrc.ec.europa.eu/effis/>

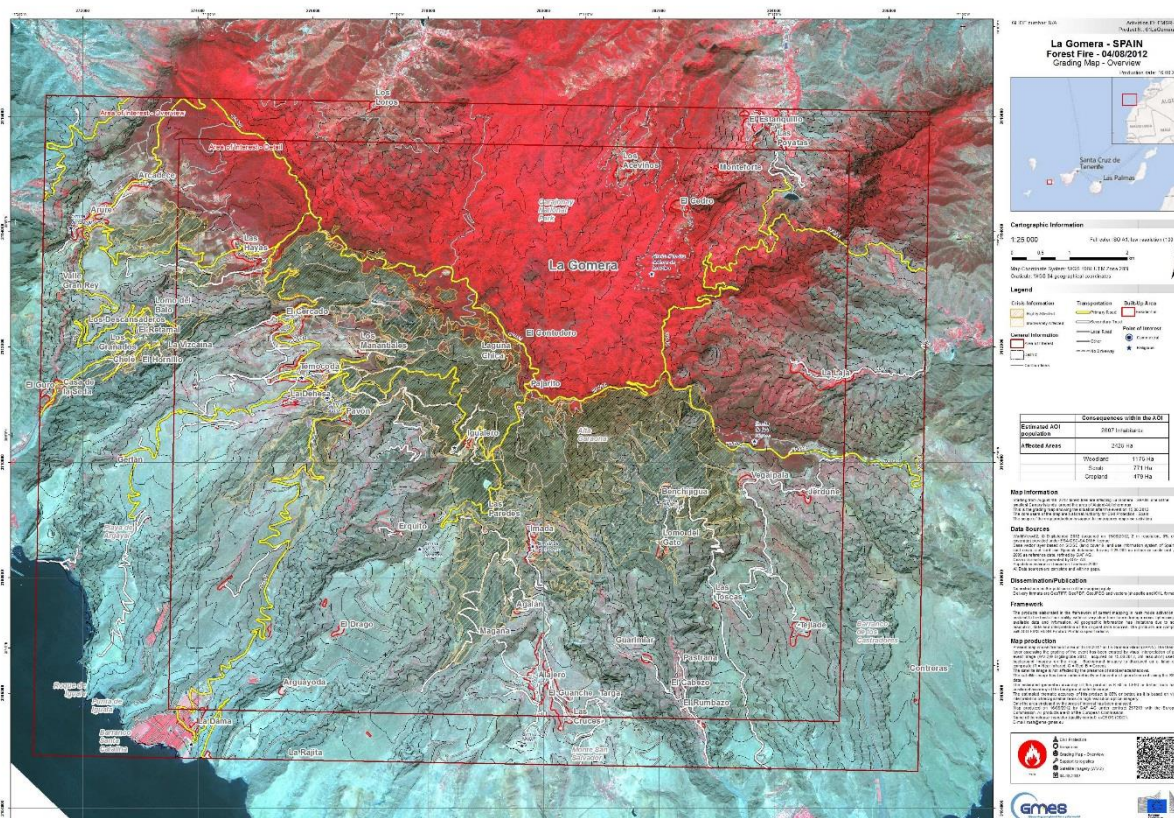
As part of this information system, every Friday DG ECHO disseminated a weekly **Forest Fire e-Bulletin** to Participating States which updates NCPA on the latest pan-European developments. EFFIS also generated daily reports which provided a summary of last 24 hours and media monitoring results (news bulletins and alerts).

Currently, DG ECHO is working on the development of an ERCC viewer as part of EFFIS. This tool will be used for big fires (>5,000 hectares) and a beta version that contains most of the features is already available. The programme is currently being tested and expected results and/or problems will feed into the final version.

2.1.3 European Earth Observation Programme Copernicus

The European Earth Observation (EO) Programme **Copernicus** is DG ECHO's entry point for activating satellite imagery. It is another tool that provided added value for Participating States and the Mechanism during the evaluation period. Copernicus has been used operationally for emergency management and monitoring of land and forests in order to predict winds and thus movement of fires. Figure 2.2 illustrates the forest fire situation in La Gomera, Spain on 4 August 2012, by way of an example of the images generated by the satellite.

Figure 2.2 Forest fire situation in La Gomera, Spain on 4 August 2012



Source: Copernicus, 2012, "EMSR016: Fires in Spain", <http://emergency.copernicus.eu/mapping/list-of-components/EParticipating StatesR016>

2.2 National tools and mechanisms in Greece and Portugal

2.2.1 Greece

Civil protection in Greece is organised as a coordinated resource system whereby national, regional, provincial and local authorities work together with local and public institutions and services. Each of these authorities and institutions has developed its own part of the national civil protection plan and makes its own contribution towards achieving the aims of civil protection. The main national bodies are: General Secretariat for Civil Protection (GSCP), Inter-Ministerial Committee for National Planning (ICNP) and Central Coordination Body for Civil Protection (CCB).

2.2.2 Portugal

The Portuguese Civil Protection is structured in three layers: national, regional and municipal levels. The government is responsible for the civil protection policy and thus, the Prime Minister and the Ministry of the Interior are accountable for civil protection at a national level. At a regional level, three districts have specific roles: the District Civil Protection Commissions, the District Command for Relief Operations, and the District Coordination Centres. At a local level, the mayor is the responsible entity of the civil protection policy in the municipality and takes the adequate actions aimed at prevention, aid assistance and rehabilitation. The first response to a serious accident or catastrophe is taken at a local level and responsibilities are escalated to the next organisational level if the local level is unable to cope with the situation on its own.

The country does not have its own system of Canadair planes but rents aircrafts annually for the forest fire 'season'. Portugal owns six helicopters and three light helicopters which do not have enough reach to go anywhere beyond Spain. There is a bilateral agreement in place with Spain that allows both nations to fly 15km inside the territory of the other country in order to tackle forest fires that are threatening their own territory.

3 The role and effects of the operational elements of the Civil Protection Mechanism in responding to the emergency

3.1 MIC/ERCC

3.1.1 General description of the assistance provided

Between 2007 and 2013 the European Civil Protection Mechanism was activated 50 times due to forest fires in Participating European States. 39 of the 50 activations came from EU Member States while eleven came from other European countries. 44 of these activations included a formal request for assistance which comprised in all cases aerial firefighting means; the rest were monitoring or pre-alert activations (see Figure 3.1).

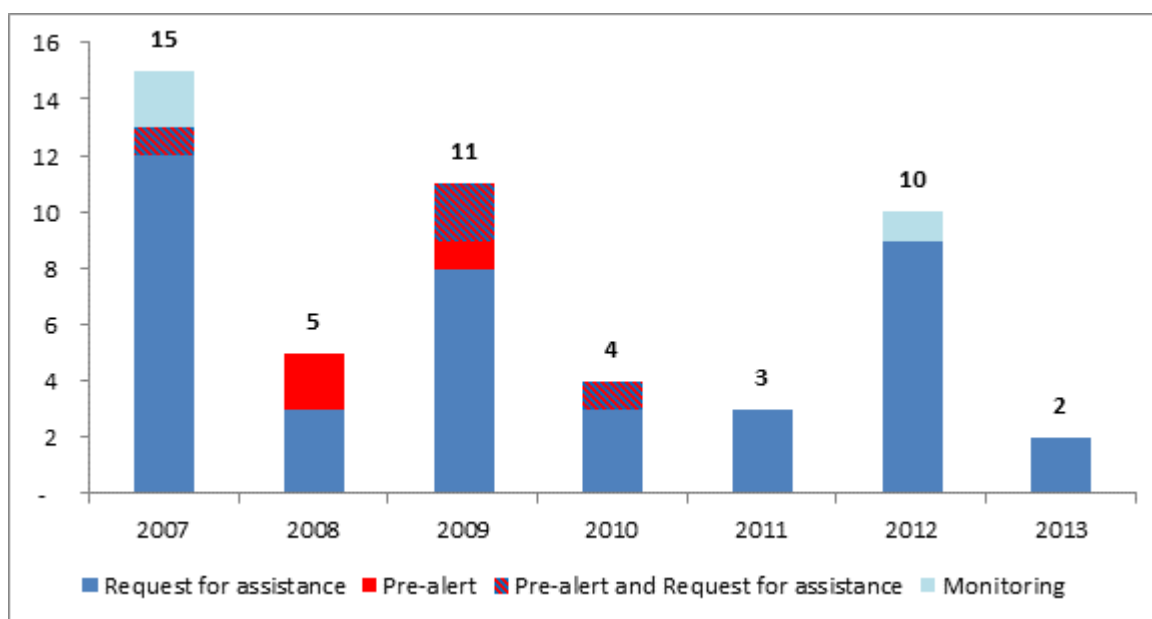
Table 1.1 shows the Mechanism's activations for forest fire emergencies over the evaluation period.

Table 1.1 Activation of the Mechanism for forest fires between 2007 and 2013

Country	2007	2008	2009	2010	2011	2012	2013	Total
Albania	2		3		2	1		8
Bosnia & Herzegovina						1	1	2
Bulgaria	1	1				1		3
Cyprus	2							2
France			2	1				3
FYROM	1							1
Greece	5	1	1		1	3		11
Italy	4		1					5
Montenegro		1				1		2
Norway		1						1
Portugal			3	3		1	1	8
Slovenia						1		1
Spain			1			1		2
Sweden		1						1
Total	15	5	11	4	3	10	2	50

Source: DG ECHO, Official statistics provided by MIC/ERCC

Figure 3.1 Mechanism activations in the case of forest fires in Europe by type, 2007-2013



Source: DG ECHO, Official statistics provided by MIC/ERCC

Just over 75 per cent of all requests for assistance were followed up with concrete offers from Participating States. In ten cases the request for assistance did not generate offers either because of the non-availability of capacity due to the likewise severity of forest fire situations in sending states, the sudden improvement of the situation in the requesting state, or technical issues with the to-be-deployed aircrafts of the sending state – see Annex 2.

Whenever the Mechanism was activated through CECIS, details of the fire situation were immediately shared with other Participating States and information about available capacities was requested. DG ECHO furthermore exchanged information with the EFFIS team at the JRC and asked them to write comprehensive reports about the respective fires which was subsequently shared with all stakeholders.

In order to support the deployment of modules (see section 3.2), the MIC/ERCC offered Liaison Officers, the acceptance of which was at the discretion of Participating States. If the requesting States were familiar with the process then they did not necessarily need to them to facilitate the deployment of modules. If the emergency involved EU CP teams then a Liaison Officer was deployed in any case by the MIC/ERCC to work with the module on the ground.

3.1.2 Key findings of the evaluation

3.1.2.1 Relevance

The CP Mechanism M was activated each year by Participating States for forest fire emergencies during 2007 to 2013 (on average, there were seven activations per year). Mechanism activations however, represented a tiny fraction of the forest fire events that occurred during this period (50 out of over 450,000 forest fire events- Table 1.1 in section 1). Indeed, the Mechanism was activated only when the scale of the hazard exceeded national capacities to respond to hazards such as forest fires. For example the Portuguese authorities interviewed for this case study explained that, during a normal summer the

country experiences 150 to 250 ignitions a day. If the situation exceeded this threshold for 21 consecutive days, it surpassed national capacity and it was conceivable that Portuguese officials would have had to activate the Mechanism.

Even though Participating States could seek assistance on a bilateral basis, the number and nature of forest fire related activations of the Mechanism over the evaluation period confirm its relevance. One interviewee acknowledged that although bilateral channels always existed, these had limitations especially when national capacities were “maxed out”, and thus Mechanism coordination and facilitation of response efforts made it highly relevant. By pooling the response capacities of 31 participating States, the Mechanism provided NCPAs with a higher likelihood of receiving the required assistance when it was needed.

Statistics on wildfires and activations (Table 1.1 and Table 1.1), demonstrated an irregular trend in the frequency and impact of forest fires. Representatives from NCPAs argued that a year like 2007 was likely to occur again and thus additional response capacities would always be welcome.

MIC/ERCC’s information sharing service was seen as very relevant and useful to NCPAs. The weekly video conferences were considered a useful tool for keeping stakeholders informed about developments in Participating States. Representatives from all interviewed NCPAs also perceived the yearly forest fire meeting at DG ECHO in Brussels as very relevant. They found it vital to discuss the lessons learned from past emergencies and to exchange information on the state of preparedness for the upcoming forest fires season. Some interviewees recommended that this meeting should be organised both before and after sessions in order to have more time to incorporate lessons learned and good practices from the last season into the next.

The early warning system (EFFIS) was relevant for NCPA, but they admitted it helped experts in Brussels to better anticipate the needs of the Participating States and thus, was more relevant for the MIC/ERCC.

The majority of stakeholders agreed that the Mechanism brought along many benefits even for larger Participating States or those with little experience of dealing with forest fires. The regular exchange of knowledge, information, practices and expertise with other Participating States was considered as very relevant in terms of learning and building own capacities.

3.1.2.2 Effectiveness

Overall, the MIC/ERCC has been regarded by stakeholders as very effective in coordinating and facilitating response to forest fires at a community level. According to some interviewees, in the very beginning, the MIC was a very “heavy-handed instrument” and barely used by the Participating States who preferred working bilaterally. According to them, the system was essentially built up ‘from scratch’ and due to consistent documentation and implementation of lessons learned (see box below), the Mechanism has gradually improved over time.

Building on the lessons learned

After each emergency there were three steps for identifying lessons learned:

- Firstly, the MIC/ERCC organised internal staff meetings;
- Secondly official meetings with experts from Participating States and unofficial ones in a more open-space kind of ambience; and
- Lastly, lessons learned were presented at the Civil Protection Committee (CPC).

The outcomes of technical and strategic lessons learned were shared with Participating States and DG ECHO invited affected countries to give a presentation about emergency operations in their country during the next CPC meeting. The feedback process was considered as working well for calibrating smaller issues such as implementing lessons learned from emergency interventions. However, the feedback process was considered less efficient for reflecting on structural issues like the above-mentioned six-hour-pooling phase - as it would have required more room and time for in-depth analysis.

The CECIS also provided a channel for capturing the lessons learned from the emergency response. It was however mentioned by stakeholders that not all lessons learned were systematically recorded for each mission on CECIS; the reasons for that varied (e.g. unwillingness to share them through CECIS, hard to compare country specific information virtually).

Officials and heads of sectors also fed back concrete results to Team Leaders, modules, training programmes, etc. and provided them with relevant information. Additionally, once per year DG ECHO invited training centres to come to Brussels to share with them findings and lessons learned from recent operations.

As the MIC was initially regarded as a source of information and only gradually took on the role of a coordination body, it was stated that it required a constant learning process from all parties concerned on how to work together. The interviewees noted a big difference from the MIC to the ERCC, in terms of equipment, premises and people. According to them, the MIC started out as an office with a couple of computers and personnel working there during conventional business hours; at the end of the evaluation period the ERCC was a 24/7 staffed response centre with multiple meetings rooms and equipped with the latest communication technologies.

At the end of the evaluation period the various processes and tools in place ensured that the coordination of responses in Europe worked well. These processes included a seasonal meeting with stakeholders, briefing and de-briefing sessions at the beginning and end of deployments, weekly video conference meetings during the forest fire season, scientific tools for forecasting and early-warning, capturing lessons learned and implementation from one year to the other, etc.

Particular components of the Mechanism such as the EFFIS, Copernicus and regular video conference were effective in improving the predictability of forest fires. EFFIS was considered by the NCPAs as a tool of relatively good quality with key benefits such as enabling the development of risk assessments and anticipation of 'demand'. The accuracy of the system was however criticised. Stakeholders reflected that it suffered from a 'holistic

European approach', with the wider geographic coverage compromising quality; according to the NCPAs, national systems were more accurate at a regional level. With regard to Copernicus, interviewees suggested that satellite imagery was not very useful for response purposes due to the quick development of forest fires. Although they admitted that it was useful for obtaining an overview of the damage caused and risk areas if wind layers were added. NCPAs confirmed their extensive usage and satisfaction with these products.

One respondent deemed the lack of field experience and knowledge about deployment of MIC/ERCC personnel as a key problem both in general and regarding forest fires. According to this interviewee, MIC/ERCC duty officers should have had an understanding of what was happening on the ground and therefore, the ideal solution for this stakeholder would have been for national civil protection officers to be seconded to the MIC/ERCC for a fixed period of time.

“The key issue with the new ERCC is its personnel. The officers at the ERCC should have field experience and knowledge of deployment. The ideal solution would be to have national civil protection officers working in the ERCC for fixed period of time. This would ensure that there is sufficient experience and field knowledge at the ERCC” –an interviewee

An example from Portugal illustrates the effectiveness and efficiency of the Mechanism. Portuguese authorities activated the Mechanism on Thursday, 29 August 2013 requesting assistance at around noon and on Saturday afternoon, a team from Croatia carried out its first intervention. The possibility to pre-alert Participating States was critical in ensuring a speedy response and allowed for obtaining clearances from national military services, receiving the Canadair aircrafts, and briefing Croatian team members about security procedures and the firefighting system by Friday evening (i.e. before the request for assistance was logged). Portugal provided local Liaison Officers on board of each aircraft and took care of the Croatian team's logistical needs (e.g. accommodation and food).

3.1.2.3 Efficiency

Having a coordination/facilitation body in Brussels was perceived as the main advantage of the Mechanism for NCPAs because the pooling of equipment and resources and the avoidance of duplication saved time and effort. In fact with the reduction of administrative and artificial burdens, use of early-warning technology and the early mobilisation of assistance, MIC/ERCC staff have managed to reduce response time.

As it emerged from the interviews, relying on bilateral assistance was not necessarily quicker than going through the Mechanism. Furthermore, according to the majority of stakeholders, bilateral assistance also had its limitations. Often NCPAs leased airplanes and helicopters for the forest fire season for their own specific needs and these were therefore, not available for deployment to other countries. In addition, in some countries, firefighting equipment fell under the responsibility of military authorities and thus clearance (for deployment of asset to another country) could take some time. The Mechanism thus, represented an efficient option in comparison.

Centralised coordination through MIC/ERCC was more efficient (than dealing on a bilateral basis) for the receiving Participating State as it was easier to communicate with one hub instead of several Participating States. Having said that, the geographic location of the receiving State had to be taken into consideration. For a country like Portugal for example, the Mechanism would not necessarily have been the first point of contact as bilateral

assistance from Spain and/or France was available much more quickly due to their geographic proximity. The Portuguese authorities mentioned that they only activated the Civil Protection Mechanism when they could not obtain assistance on a bilateral basis from France and/or Spain (or when the capacity available from bilateral agreements was inadequate).

One of the major constraints of the Mechanism reported by the stakeholders was the minimum pooling phase of six hours before an airplane was given clearance for departure due to legal requirements. This rule initially was meant for transporting relief items such as tents, blankets, food, etc. with the intention of facilitating the pooling of resources in an efficient manner. Firefighting deployments however, usually did not require the delivery of relief items as the aircraft itself is the means through which assistance is delivered. As a result of this rule aircrafts were unnecessarily held on the ground and missions were delayed. Because these specific aircrafts were unable to fly at night, the ‘six hours rule’ caused an even longer delay until the next morning in a few situations. Subsequently, many countries did not deploy their units through the Mechanism but used bilateral channels instead. However, all interviewees confirmed the European civil protection community was aware of the problem and thus necessary provisions had already been made in the preparation of the new legislation. In the future, these procedural issues should be completely resolved thereby, improving the speed of providing assistance.

3.1.2.4 Coherence

NCPA acknowledged the coherence of Mechanism actions with national activities. Stakeholders collaborated closely with DG ECHO and EFFIS and the products provided were used by the NCPA and regarded as a relevant and useful source of information. Satellite imagery via Copernicus furthermore provided national authorities with a visual overview of the respective forest fire dimensions. According to interviewees, the UN would also benefit from a coordinated package, en-bloc sharing of information, and the reduced cost-factor of deploying EU experts within the UNDAC.

3.1.2.5 European added value

NCPAs acknowledged the EU added value of products and services provided by the Mechanism (particularly, CECIS) in terms of response coordination as well as information sharing and knowledge management. Satellite imagery via Copernicus could enhance the EU added value of the information provided through the Mechanism by enabling national authorities to visualise forest fires’ multiple dimensions.

In the absence of the MIC/ERCC and associated information tools, the national response to forest fire emergencies would have been less effective and efficient; thereby resulting in higher damage – see section 4 on counterfactual scenarios.

3.2 Modules and module exercises

3.2.1 General description of the assistance provided

The objective of firefighting modules was to have a standardised capacity readily available for quicker response and effective support to Participating States in need during emergencies. Firefighting modules had to fulfil four main criteria: (i) the module must meet a predefined capabilities in terms of personnel and equipment; (ii) interoperability (e.g. coupling of hoses) has been defined by module expert groups on Participating States level

and was also adopted by the Committee on Forest Fires on community level; (iii) the module should be able to operate autonomously and not be a burden to NCPA of the receiving state; and (iv) available for rapid deployment (i.e. within six hours).

There were two types of modules with each two sub-categories registered within CECIS that were specifically designed for tackling forest fires:

- Aerial forest fire fighting with helicopters or airplanes
- Ground forest fire fighting with or without vehicles

At the end of the evaluation period, three aircraft modules (France, Greece and Italy) were registered in CECIS and each module consisted of two Canadair aircrafts. Other countries also had aerial capacity ready to be deployed in case of emergencies but had not registered them as modules in CECIS. The possibility to register a helicopter module was available, but no such module had been registered at the end of the evaluation period. It was suggested by interviewees that due to the low range and speed of helicopters, very often the area of emergency is out of reach for a quick response, and thus the practical relevance of the helicopter module was questionable. In addition to aerial modules, 27 modules of forest fire ground forces were registered on CECIS at the end of 2013; 20 of which were using vehicles and the residual seven were not.

Participating States have organised specific (forest fires) module exercises under the Mechanism in order to promote a common understanding of procedures and to avoid duplication of efforts.

Minimum requirements for aerial and ground force firefighting modules guaranteed that receiving States knew what kind of support they would receive. In order to support the modules, the MIC/ERCC offered Liaison Officers. Participating States were free to accept it or not. If the Participating States were familiar with the process then they did not necessarily need to add them to the deployed modules. If the emergency involved ground forces then a Liaison Officer was in any case deployed by the MIC/ERCC to work with the module on the ground.

Buffer capacity

At one point or another, all interviews touched upon the subject of firefighting buffer capacities¹⁶ within the Mechanism. When there were many fires across Europe and most NCPAs were engaged in domestic response activities, it could happen that there was no additional capacity available for supporting other Participating States. Obviously it could have been politically hard to justify the deployment of national capacities to other countries when faced with a domestic emergency.

On the one hand, about half of the respondents had reservations about the creation of buffer capacities under the Mechanism. According to them it would be both a very sensitive and costly issue. According to them prioritisation of deployment in case of multiple emergencies could potentially be a contentious issue i.e. which region or Participating States would be allowed to use the additional aircrafts and which one would come first in

¹⁶ The term 'buffer capacity' was, in the Mechanism context, referred to as firefighting assets (e.g. aircrafts) based in a strategic location and readily available for emergency interventions. These assets would be managed and deployed centrally, and thus DG ECHO would not solely rely on voluntary contributions from Participating States.

case of multiple demands for emergency interventions. Some suggested that there would be a need to introduce specific rules and commitments by Participating States; perhaps through financial commitments in order to access these buffer capacities.

Another interviewee stated that considering the high number of requests during peak season there would never be enough capacity available to deal with all fires at the same time, and trying to do so would require a substantial amount of financial resources. The interviewee also highlighted the opportunity cost of buffer capacities during periods where they are not used.

Advocates of buffer capacities on the other hand, argued strongly that even though the Mechanism came a long way it was still based on ad-hoc decisions and dependent on voluntary contributions from Participating States. Buffer capacities would increase the 'size of the cake', offer more possibilities for interventions, and the EU FFTR projects have proven the effectiveness of additional aircrafts strategically located in Corsica.

It shall be noted that the new legislation on a Union Civil Protection Mechanism¹⁷ stipulates the establishment and management of framework contracts, framework partnership agreements or similar arrangements to address temporary shortcomings in extraordinary disasters, which may also cover a maximum of 40 % of costs of ensuring rapid access to those assets.

3.2.2 Key findings of the evaluation

3.2.2.1 Relevance

Modules and module exercises were perceived highly relevant by stakeholders and NCPAs. DG ECHO developed community HNS guidelines which helped providing a common understanding of technical, logistical, legal and financial prerequisites of interventions. Interviewees confirmed that the HNS guidelines provided relevant instructions for modules. Portugal reported that foreign aerial modules were well received and that international teams were quickly able to participate in the firefighting interventions. The modules increased the national firefighting capacity and are therefore regarded as highly relevant.

3.2.2.2 Effectiveness

One example mentioned by all interviewees from NCPAs confirmed that in the past the usage of different aircraft models caused difficulties in coordinating helicopters and airplanes and required a large amount of human expertise and experience during the operational coordination process. Aerial forest fire modules were all equipped with Canadair aircrafts which eased operations and allowed receiving States (including those which did not have a lot of experience in receiving assistance) making effective use of the support provided. The main achievement in terms of effectiveness was building interoperability of equipment, personnel and procedures. Thanks to the interoperability, HNS guidelines, and extensive training the assistance provided could be put to use more effectively at the end of the evaluation period as compared to the earlier years.

3.2.2.3 Efficiency

The creation of firefighting aerial and ground force modules was perceived by interviewees as a good development which worked very efficiently. One respondent acknowledged that

¹⁷ Decision No 1313/2013/EU of the European Parliament and of the Council of 17 December 2013 on a Union Civil Protection Mechanism, <http://eur-lex.europa.eu/LexUriServ.do?uri=OJ:L:2013:347:0924:0947:EN:PDF>

they had been in place for a long time and thus teams from different countries knew how to work together well and what to expect in certain situations.

3.2.2.4 EU Added Value

The ready availability of modules was considered a key European added value for Participating States when national capacities to respond to forest fires were surpassed. Unless, sending states' capacities were blocked due to domestic forest fire events, affected states could expect to receive additional capacity in less than a day.

3.3 Transport facility

3.3.1 General description of the assistance provided

Over the evaluation period, transport grants were used in seven out of 50 forest fire emergencies where the Mechanism was activated. An amount of € 420,518 was requested by Participating States to finance transportation costs in the context of responding to forest fires. The rationale for co-financing small amounts for transport grant requests by some Participating States (e.g. € 6,000 in case of Croatia in table below) were questioned by the evaluation team. In response, the Policy Official in charge explained that in some cases the transport grant should be considered as a token or symbolic gesture and at a practical level, as even these small amounts could potentially enable the deployment of one more plane over the course of the year. As one interviewee explained, transport grants were more important for distant destinations like the Philippines where the costs could be substantial¹⁸. According to this interviewee the co-financing essentially covered fuel costs¹⁹.

Another stakeholder noted, for DG ECHO the coordinating role for transport facilitation had allowed them to identify what was happening on the ground and likewise officials got a better picture of what was happening. Ultimately this contributed to a better understanding of what kind of assistance might be needed. Table 1.2 provides a breakdown of countries that requested transport grants and additionally shows the transport costs and contribution of the EC.

Table 1.2 Use of transport grants in case of forest fires between 2007 and 2013

Requesting country	Year	Country of emergency	Amounts (EUR)		
			Total requested	Net requested	EC contribution
Italy	2007	Albania	n/a	n/a	n/a
Italy	2007	Albania	n/a	n/a	n/a
Italy	2010	Israel	110,000	55,000	55,000
Italy	2012	Greece	36,000	18,000	18,000
Croatia	2012	Bosnia & Herzegovina	72,000	36,000	24,033
Croatia	2012	Bosnia & Herzegovina	12,000	6,000	6,000
Slovenia	2012	Albania	55,430	27,715	n/a
Croatia	2013	Portugal	383,178	191,589	n/a
Croatia	2013	Bosnia & Herzegovina	57,477	28,738	n/a

¹⁸ DG ECHO has established a system to financially support assisting Participating States with the cost of transporting assistance. Participating States can request the reimbursement of 50% of the transport costs of base-to-base and individual flights in the country of emergency but not for the actual deployment.

¹⁹ According to the person's estimation the reimbursement of transport costs from for example Italy to Albania would represent 10 to 15% of the entire deployment costs.

Croatia	2013	Bosnia & Herzegovina	57,477	28,738	n/a
Croatia	2013	Bosnia & Herzegovina	57,477	28,738	n/a

Source: Based on data provided by DG ECHO

3.3.2 Key evaluation findings

3.3.2.1 *Relevance*

Transport grants were used to a limited extent in the case of forest fires (eleven out of a total of 122 transport grants). Unlike other emergencies which required “assistance” such as equipment, supplies to be transported from one place to another, in the case of forest fires, the “assistance” was provided through firefighting aircrafts and consequently, the costs involved in ‘transporting’ assistance were essentially the fuel costs of aircrafts deployed.

Even though less used for emergencies within Europe, transport grants were nonetheless considered to be relevant by NCPAs in the context of forest fires, although a couple of them were in favour of a higher level of co-financing from the EU. One interviewee argued in favour of a simplified procedure to access transport financing, acknowledging though that the ‘new system’ (as per the 2013 Decision) was already an improvement compared to previous versions. The fact that transport grants only covered 50 per cent of base-to-base and individual inland flights was not perceived as a major problem by this interviewee.

3.3.2.2 *Effectiveness*

Transport grants provided an additional, practical incentive to Participating countries to provide assistance by easing some of the financial ‘burden’ involved. There was no reported incident of withdrawal of offers of assistance for financial reasons in the case of forest fires during the evaluation period.

The only minor problem was that systematic changes were suggested in order to create multiple use helicopters and also to overcome the unavailability of helicopters due to long distances.

3.3.2.3 *Efficiency*

Transport grants did not provide a substantial contribution to actual deployment costs but did however reimburse Participating States for some of their financial expenses.

3.3.2.4 *EU added value*

Transport grants provided an incentive for international deployments, even for larger Participating States, by offering civil protection authorities the ‘opportunity’ to practice international deployment procedures, by gaining experience in real life emergency situations (which they might not face in their home countries) and thus strengthening their capacities. One Participating State added that they had a contract with a commercial airline which provided them with transport solutions within three hours and covered any destination in the world. They suggested that this service could also be used as pooling solution for other Participating States, but acknowledged that the demand for it might be very limited.

3.4 Training programmes

3.4.1 General description of the assistance provided

There were no specific training courses that dealt exclusively with forest fires. The training course programme however, did provide Civil Protection experts from Participating States with a common understanding for cooperation in civil protection interventions which was in a wider sense also important for firefighting experts.

In January 2013 the Greek Civil Protection Agency started with the organisation of a full-scale simulation exercise with the title “EU Prometheus - Forest Fire Emergency Response in Wild land-Urban Interface”. Prometheus was the first and only simulation project dealing with forest/wildfires so far under the Mechanism; the actual simulation took place in June 2014 and thus outside the scope of this evaluation.

3.4.2 Key evaluation findings

Training courses were perceived to be highly relevant by stakeholders. One interviewee reported that the Community Mechanism Introduction (CMI) course provided solid ground knowledge of the Mechanism but most importantly the exchange with over 30 other participants was considered as very useful; even in the context of forest fires. Especially the learning effect from other forest fires experts and their substantial experience in real-life emergencies was considered beneficial. The training courses also provided national Civil Protection professionals with relevant knowledge about the application of HNS. An invaluable advantage would furthermore be when former training and exercise participants are deployed together in real-life missions. Overall interviewees agreed, that the Mechanism training programme had enhanced the effectiveness and speed of Participating States’ response to forest fires.

3.5 Pilot projects & preparatory action

3.5.1 General description of the assistance provide

During the evaluation period, the Commission ran one pilot project (European Forest Fire Tactical Reserve - EU FFTR - 2009) and one preparatory action (EUFFTR 2010) relating to forest fires and tackled an EU rapid response capability. With funding from the European Parliament, the aim of the two projects was the testing of innovative arrangements to enhance the availability of forest fire resources. Both projects were organised by the French Interior Ministry.

3.5.2 Key evaluation findings

3.5.2.1 Relevance

The EU FFTR were two highly relevant projects whose results were still visible at the end of the evaluation period in the form of video conferencing, e-bulletin or even in the discussion about buffer capacities.

3.5.2.2 Effectiveness

It enabled a very fast deployment of Canadair aircrafts which were rented by France and co-financed (85 per cent) by the EU. Interviewees agreed that these aircrafts were an asset for countries that needed it; especially the availability and readiness of aircrafts impressed

stakeholders. It even allowed Italy to send aircrafts to Albania, while the FFTR airplanes stationed in Corsica covered the Italian regions.

Additional statistics on EUFFTR interventions can be found in Annex 3.

3.5.2.3 *Efficiency*

According to stakeholders, a continuation of the EU FFTR was advocated by Southern countries but faced reluctance from the Nordic Participating States who had less interest in additional EU level response capacity. One interviewee elaborated, if it was to be re-launched, the projects should be implemented and advertised earlier on in the year. This would enable interested countries to plan ahead and fill in their requests based on the European Commission offer. Moreover, projects should be running on a longer timeframe to reduce costs. If a project targets the renting of Canadair aircrafts, it should be organised at the very beginning of the year when the privately owned assets are still available. Additionally, the airplanes should be rented for multiple years which would further decrease the overall cost compared to yearly renting.

3.5.2.4 *Coherence*

An alternative solution to the project based additional capacity would be to develop overall buffer capacities at EU level (as explained in section **Error! Reference source not found.**). One interviewee however, criticised this approach arguing that it would be very complex and something that can be only be put in place over the long-term.

3.5.2.5 *EU Added Value*

The EU FFTR was used several times and its geographic location (Corsica) enabled rapid response to forest fire emergencies. The pilot project EU FFTR 2009 and preparatory action EU FFTR 2010 therefore, had a clear added value for respective NCPAs (i.e. France, Greece, Italy, Portugal – see Annex 3).

Even though the EU FFTR proved to be vital in terms of additional firefighting capacity, it “only” addressed specific forest fire communities in some European Participating States and as such was regarded by critics as not bringing European added value for the entire EU.

3.6 **Other aspects**

3.6.1 **Preventative measures on national level**

Another issue that came up in all interviews was the inadequacy of preventative measures at a national level. For instance, the cleaning out of forests during the winter in order to avoid fires in summer seemed to be neglected.

Interviewees found it worthwhile to highlight the importance of preventive measures on a local level in order to potentially reduce the severity of forest fires in the following season. In times of financial crises and public budget constraints, the allocation of necessary financial and human resources to carry out preventative measures to a full extent may be difficult to advocate for. Nevertheless, according to stakeholders, national governments were not enforcing the respective legislation (e.g. cleaning out of forests in winter) well enough which constituted the main problem.

Even though it is the responsibility of each country or federal region, a couple of stakeholders suggested DG ECHO should appropriately adapt its advocacy strategy and awareness raising campaign in this regard. It will become increasingly important as one can

expect the frequent occurrence of even hotter summers due to climate change and global warming.

One interviewee explained that in an optimal environment NCPAs should spend 80% of their budget in prevention, 10% in vigilance and another 10% in fighting forest fires. According to this person, currently only 5% of the budget goes into prevention but most was spent on forest fire fighting

3.6.2 Actions with third countries

It was reported that there was an exchange with third countries during emergencies. In 2010 DG ECHO sent reports based on Italian methodology to Israel and Lebanon and shared other products in order to reduce the impact of forest fires there. A Memorandum of Understanding was also signed with Russia in order to exchange information.

3.6.3 Prevention and preparedness projects

During the evaluation period, the EU also funded six prevention and preparedness projects including EFFIS. Of the remaining five projects, three were led by Italy, and one each by Spain and Greece. These projects inter alia, supported awareness raising activities (Italy), training measures (Italy), tools and best practices to integrate wildfire patterns assessment into land planning (Spain) and monitoring/ predictive tools (Greece).

Those prevent and preparedness projects that related to the forest fire context, certainly contributed to enhancing preparedness of Civil Protection Authorities at national level, and linking relevant actors and policies throughout the disaster management cycle. Overall these projects were very relevant; a detailed overview can be found below.

Table 1.3 Overview of forest fire related prevention and preparedness projects funded during 2007-2013

Type of action	Type of action	Approved project name	Year of approval	Lead org. MS	Reported actions	Reported outputs
Preparedness project	Monitoring and Information Centre (MIC) - ERCC	Minimizing Forest Fires Risks for Tourists (MIRTO)	2009	Italy	<ul style="list-style-type: none"> * improve preparedness of tourists in fire-prone areas, * improve effectiveness of forest fire information campaigns which address tourists, * reduce human victims, economic and environmental damages from forest fires in tourism areas, * raise public awareness of forest fire risks and adequate behaviour without damaging tourism economy, * develop innovative cooperation and communication methodologies to this effect, * cooperation between public and private operators with different roles and functions (civil protection – tourism promotion), * cooperation between tourists' countries facing similar issues, * test this methodology on Mediterranean islands, * identify and propose communication strategies and effective information materials to be adopted in larger campaigns. 	<ul style="list-style-type: none"> • videos for awareness raising campaigns, • brochures regarding awareness raising and preparedness, • three newsletters regarding the project progress, • seminars focussing on the project objectives, • articles, presentations and posters at meetings and seminars, • project websites, • project posters, • a monitoring report, • a methodology report. * Video spots * Handbook for holiday house owners - in five languages available on webpage or via email or standard mail.
Preparedness project	Training Programme	Friends for Emergencies (F4E)	2010	Italy		<ul style="list-style-type: none"> * 1 website for the promotion of the project * 1 opening press conference * 1 final seminar * Hot fire training courses - 23 courses in the modules a, b, c for the 25 Italian, 26 Slovenian firefighters and 24 Slovenian volunteers. * Courses in fire-fighting at sea and on board of ships for the Slovenian fire-fighters - two courses for 46 fire-fighters. * Slovenian language course for Italian fire-fighters and Italian language course for Slovenian firefighters
Preparedness project	Other	Observation and Detection Systems for Forest Fire Management	2012	Italy	<p>A1. Scientific and technical Coordination & Project Management (M0 – M24)</p> <p>A2. Analysis and technical assessment of the observation/detection systems (M0 – M15)</p> <p>A3. Definition of situational data set, utilization strategy &</p>	

Type of action	Type of action	Approved project name	Year of approval	Lead org. MS	Reported actions	Reported outputs
		(ODS3F)			simulation of fire behaviour (M12 – M24) A4. Good practices and experiences exchange (M12– M24) A5. Communication & Dissemination (M2– M24)	
Prevention project		Artemis	2007	Greece	*A1 Studying forest fire *A2 Review and evaluation of current risk management strategies. A case study. * Design and development of the DSS (GIS data collection, training of beneficiaries). * Website development * Dissemination of results	* Development of a simulation software for forest fire prediction - web based tool * Scientific study on forest fire occurrence * Review of current risk management strategies in force in geographical areas
Prevention project	Cooperation projects	Operational tools for improving efficiency in wildfire risk reduction in EU landscapes	2013	Spain	•Management and reporting to EC •Reviewing key knowledge, tools and best practices to integrate wildfire patterns assessment into land planning • Building capacity on potential fire event assessment for land and fire planners • Developing knowledge management strategies and transfer tools • Information, dissemination and capitalization actions	
Preparedness project	Other (Early Warning Systems and other technologies)	European Forest Fire Information System (EFFIS)			EFFIS addresses forest fires in Europe in a comprehensive way, providing EU level assessments from pre-fire to post-fire phases, thus supporting fire prevention, preparedness, firefighting and post-fire evaluations. The core of EFFIS consists of a scientific and technical infrastructure at the JRC doing research on forest fires and operating a web based platform. In addition EFFIS is supported by a network of Experts on Forest Fires from 22 EU countries that meet regularly with the EC services. Other than the on-line web based system, a huge EU fire database is maintained within EFFIS; furthermore, reports on forest fires in Europe are produced yearly.	

Source: DG ECHO, MIC/ERCC, data and statistics in regard to forest fires on exercises, preparedness and prevention projects, preparatory action and pilot project

4 Counterfactual Scenario

Coordination of support

Participating States only activated the Mechanism when they were overwhelmed by the scale of the disaster. Stakeholders were convinced that without the Mechanism and specifically, the MIC/ERCC, coordination of responses to emergencies would have been harder and slower for countries requiring assistance as they would need to communicate on a bilateral basis with several different countries. While bilateral dealings may have been the most efficient route in certain situations, this approach showed its limitations when several Participating States were simultaneously affected by forest fires or in situations where the affected State did not have extensive experience of dealing with forest fires e.g. Sweden that experienced large forest fires for the first time in a long time in 2014.

Case study findings showed that bilateral assistance always existed and will continue to exist and that the Mechanism was at least complementary to national efforts. For a country like Portugal which is located at the edge of Europe, distance was certainly an issue and thus bilateral relationships with its neighbours were considered as more efficient in certain situations. The same might be true for Greece. Nevertheless, both countries have regularly activated the Mechanism for forest fire related emergencies when they could not secure the necessary assistance through bilateral channels alone. It was also noted by respondents, that in terms of costs and politics the MIC/ERCC was quick and neutral.

By pooling resources and capacities, the Mechanism provided greater predictability and reliability of assistance as compared to bilateral cooperation mechanisms.

In the absence of the Mechanism, response to forest fires that exceed the affected countries' capacities would have been slower and therefore, less effective.

Host Nation Support

The development of HNS guidelines and training of CP professionals has created an environment where all stakeholders were aware of practices and procedures which ultimately allowed for almost immediate and effective assistance in case of emergencies. The guidelines got rid of situations where for instance technical characteristics of equipment prevented an effective emergency response²⁰ and has enhanced the interoperability of assets. Stakeholders were in agreement that there was room for improvement but it showed how effective a coordinated emergency response through the Mechanism could be.

Information and knowledge exchange

The scientific and technical tools developed by the EC provided additional value for Participating States. Without Copernicus, EFFIS, CECIS, video conference meetings, e-Bulletin and other reports, Participating States would have needed to solely rely on their own expertise, knowledge and technical capabilities. It was argued that

²⁰ The following examples were mentioned: in Albania the right fuel could not be found to support foreign airplanes, and environmental specifications of chemicals used for water dropping might prevent an intervention.

especially smaller countries would have been affected from the lack of this vital information but even larger Participating States would have been affected.

Co-financing

By requesting and offering assistance through CECIS Participating States gained access to co-financing support, which would not have been the case if they had operated on a bilateral basis. Even though it was stated by NCPAs that the amount was not considerable to the total deployment costs, it would have however been better than nothing.

5 Conclusions and lessons learned

This section of the case study outlines the conclusions extracted after the desk research and stakeholder consultations. The section discusses, in particular, the lessons learned after each emergency response / module deployment, areas for improvement and suggestions for a better functioning of the Civil Protection Mechanism as a whole.

5.1 Relevance

Support through the Mechanism became highly relevant when national firefighting capacities were exceeded, especially for Participating States that did not have extensive experience of dealing with forest fires. Regular information and knowledge exchange, early-warning systems, video conferencing, annual meetings on forest fires, exchange of expertise, etc. was seen by stakeholders as an essential advantage of the Mechanism. It was recommended to organise an additional annual meeting not only prior to the season but also after the session in order to have more time to incorporate lessons learned and good practices from the last season into the next.

In terms of modules, the helicopter module (which exists in theory, but none have been registered so far) was considered to be less practical by stakeholders due to limitations in terms of distance that could be covered and perhaps, DG ECHO should re-consider the relevance of this module.

Interviewees confirmed that the HNS guidelines provided effective and relevant instructions and training courses content and module exercises were also perceived as highly relevant for enhancing local capacities. Furthermore the training courses would have provided national CP professionals with relevant knowledge about the application of HNS.

5.2 Effectiveness

Over the years the Mechanism has considerably improved in response to lessons learned and the ERCC was considered an effective instrument for fighting forest fires at the end of the evaluation period. The coordination hub provided effective facilitation of assistance, but the main achievement remained the interoperability of equipment, personnel and procedures.

HNS guidelines and SOPs have helped in providing a common understanding of technical, logistical, legal and financial prerequisites of forest fire interventions allowing even states that did not have a lot of experience in receiving assistance making effective use of the support provided. The Mechanism's components such as the MIC/ERCC, modules, training programme, transport facility, etc. have enhanced the effectiveness of response, and consequently, countries have enhanced their preparedness in dealing with forest fires.

The feedback process was considered as working well for calibrating small things such as integrating lessons learned and good practices from emergency missions into the training programme for instance. Structural adaptations would have required more time for reflection and thus was perceived as occasionally slow; a

recommendation would be exempt of the six-hour pooling phase requirement forest fire interventions.

5.3 Efficiency

Systematic reduction of administrative burdens improved the efficiency of the Mechanism. The use of early-warning technology and the pre-alerted mobilisation of assistance allowed the MIC/ERCC to reduce response time to a minimum. Stakeholders considered that at the end of the evaluation period there was not much of a difference anymore between coordinating assistance through the Mechanism or bilaterally; even though the former would have occasionally involved more administrative steps.

The centralised coordination through MIC/ERCC furthermore brought benefits for requesting countries as it was easier to communicate with one hub instead of several Participating States. The creation of firefighting aerial and ground force modules was perceived by interviewees as a good development which worked very efficiently. Moreover, the tools developed under the Mechanism were very efficient in terms of information sharing; in particular CECIS was mentioned as a good example.

Geographic location of the receiving state was a factor impacting the efficiency of the Mechanism. For a country like Portugal it was easier to rely on bilateral agreements with Spain or France first and then with the Mechanism in a second step. The Mechanism hence played a complementary role for Portugal.

Prevention and preparedness projects were fragmented. A more strategic approach to these projects is recommended in order to maximise their effectiveness.

5.4 Coherence

The actions of the Mechanism in the context of forest/wild fires were complementary to national capacities and enabled national responders to improve in specific areas relevant for a coordinated response in the event of fires. The alignment of national strategies and procedures according to the HNS guidelines allowed for a coherent delivery of forest fire assistance across Participating States. The Mechanism's actions in regard to forest fires benefited those countries that had little firefighting expertise, and/or whose national capacities were fully exhausted.

One respondent recommended that DG ECHO should make sure that whatever is written in the new legislation is actually implemented. In the person's opinion additional capacity on community level would be a good example of that. The EU FFTR would have been useful and convincing enough in this respect

5.5 EU Added Value

The MIC/ERCC brought European added value in terms of information sharing and knowledge management; CECIS was particularly mentioned as a tool bringing added value to Participating States. The exchange of knowledge with Civil Protection professionals from other European Participating States through regularly organised meetings was perceived as indispensable for national authorities.

Annex 1 Methodology

The case study is based on in-depth desk research and semi-structured interviews. The category of material covered annual EFFIS reports, Commission documents on outcomes and lessons learned, as well as statistics and quantitative data gathered by DG ECHO.

Stakeholder interviews are based on European Commission (EC) officials and selected national experts who had a comprehensive understanding of the Mechanism. The Greek authorities refused to contribute to the evaluation process and as such, it is (unfortunately) a limitation of the case study because it does not reflect their feedback on the use of the Mechanism.

Table A1.1 and Table A1.2 provide an overview of the stakeholders contacted and interviewed, respectively which kind of documentary material was used for drawing conclusions.

Table A1.1 Stakeholders contacted

Name	Position	Date of contact	Interviewed? Reason for refusal	Date of interview (if applicable)
Dimitrios PAGIDAS	Responsible for Forest Fires, DG ECHO, B1- Emergency Response Unit	11 Aug. 2014		21 Aug 2014
Patricia GASPAR		14 Aug. 2014	She was not comfortable being interviewed as she has left the unit quite a long time ago but forwarded the request to Mr Joaquim Almeida.	
Joaquim ALMEIDA	Deputy National Operational Commander, Autoridade Nacional de Protecção Civil, Portugal			22 Aug 2014
Luigi D'ANGELO	Head of International Affairs, Presidenza del Consiglio dei Ministri, Dipartimento della Protezione Civile, Italy	14 Aug 2014		4 Sept 2014
Philippe NARDIN	Chef de la Mission des Relations Internationales, Ministere de l'Interieur, France	14 Aug 2014		3 Sept 2014
Spyridon GEORGIU	Civil Protection Attaché, Permanent Representation of Greece to the European Union	14 Aug 2014	No response	
Peter Billing	Deputy Head of Unit, DG ECHO, B1- Emergency Response Unit,	11 Aug 2014		10 Sept 2014

Table A1.2 Document reviewed

Reference	Description
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Reference	Description
EFFIS	Forest Fires in Europe, Middle East and North Africa 2013
EFFIS	Forest Fires in Europe, Middle East and North Africa 2012
EFFIS	Forest Fires in Europe, Middle East and North Africa 2011
EFFIS	Forest Fires in Europe 2010
EFFIS	Forest Fires in Europe 2009
EFFIS	Forest Fires in Europe 2008
EFFIS	Forest Fires in Europe 2007
European Commission	Forest and Wild Fires 2012 season
European Commission	Lessons Learnt Meeting – Forest Fires in Europe – Brussels, 10 November 2010
European Commission	Lessons Learnt Meeting – Forest Fires in Europe – Summer 2009
European Commission	Outcomes of Technical Level Lessons Learned Meeting on 29 October 2013
European Commission	Summary Report of the Lessons Learned Meeting of 6 February 2008 on the 2007 Forest Fires
European Commission	Technical Level Lessons Learned Meeting – Thematic Focus on Forest Fires

Table A1.3 Overview of countries requesting assistance and countries offering assistance in case of forest fire emergencies during the period 2009-2013

Requesting country	Year	Assisting country / countries
ALBANIA	2007	Italy, Czech Republic
ALBANIA	2007	None
ALBANIA	2009	Greece
ALBANIA	2009	change in situation
ALBANIA	2009	change in situation
ALBANIA	2011	change in situation
ALBANIA	2011	Italy, Greece
ALBANIA	2012	Slovenia
BOSNIA AND HERZEGOVINA	2012	Croatia
BOSNIA AND HERZEGOVINA	2013	Croatia
BULGARIA	2007	None
BULGARIA	2008	France, Spain
BULGARIA	2012	Romania
CYPRUS	2007	None
CYPRUS	2007	Greece
FRANCE	2010	EUFFTR
FRANCE Corsica	2009	EUFFTR
FRANCE Corsica	2009	EUFFTR

Requesting country	Year	Assisting country / countries
FYROM	2007	Slovenia, Norway
GREECE	2007	Italy, France
GREECE	2007	Italy
GREECE	2007	France
GREECE	2007	None
GREECE	2007	Austria, Cyprus, France, Germany, Hungary, Italy, Netherlands, Norway, Portugal, Romania, Slovenia, Spain, Sweden
GREECE	2008	France, Italy, Cyprus
GREECE	2009	EUFFTR, France, Italy, Spain, Cyprus
GREECE	2011	ACR-5
GREECE	2012	Italy, Croatia
GREECE	2012	ACR-5 not available
GREECE	2012	ACR-5 not available
ITALY (bilateral)	2007	France, Spain
ITALY	2007	France
ITALY Sardinia	2009	EUFFTR
MONTENEGRO	2008	Italy
MONTENEGRO	2012	Croatia
PORTUGAL	2009	EUFFTR
PORTUGAL	2009	Italy
PORTUGAL	2009	EUFFTR
PORTUGAL	2010	Italy
PORTUGAL	2010	EUFFTR not available
PORTUGAL	2010	Spain
PORTUGAL	2012	ACR-5
PORTUGAL	2013	Croatia, France (bilateral), Spain (bilateral)
SLOVENIA	2012	Italy (bilateral)

Source: DG ECHO

Annex 2 General overview and statistics on the EUFFTR

EU Forest Fires Tactical Reserve (EUFFTR) – Number of deployments				
Country	Date	Type of intervention	Duration²¹	No of drops
France (Corsica)	08.07.2009	Rapid intervention	3h40' each	25 drops each
France (Corsica)	23.07.2009	Rapid intervention	3h25' each	10 drops each
Italy (Sardinia)	24 – 26.07.2009	Rapid intervention	37h10' (18h + 19h10')	62 drops (29 + 33)
Portugal (Monte Real Airbase)	14 – 20.08.2009	Prep. and deployment	Duration: 29h57' (16h27' + 13h30')	38 drops (21+17)
Greece (Attika)	22 – 25.08.2009	Deployment	Duration: 18h19' (5h20' + 12h59')	78 drops (23+ 55)
Portugal	05 – 12.09.2009	Prep. and deployment	Duration: 60h (30h + 30h)	60 drops
Portugal	11 – 16.08.2010	Deployment	n/a	n/a
France (Herault)	30 – 31.08.2010	Rapid intervention	14h10	30 water drops

Source: DG ECHO

²¹ Time for intervention operations