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Greece

Agricultural Situation

Wildfires Scourge Greece

2007

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Report Highlights: In the last half of August some 290 wildfires broke out in Greece and caused considerable loss of lives and livelihoods, particularly in agriculture. This report provides background on the areas damaged.

Includes PSD Changes: No
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Unscheduled Report
Rome [IT1]
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SIZE OF THE DAMAGE – PRELIMINARY ESTIMATES

According to the Greece's Ministry of National Economy, it is roughly estimated that the damage due to recent wildfires in the 4 prefectures of Elia, Messinia, Laconia & Arcadia and the island of Evia (East Central Greece) will be about €1.5 to €1.7 billion - $2.1-2.4 billion (0.6 – 0.8 percent of Greece's GDP).

Elia Prefecture is highly agricultural and some 22 percent of total production has been affected. Elia is also a relatively poor prefecture with a per capita GDP of only €10,190/annum, or 53 percent of the national average. The prefectures of Messinia and Laconia depend heavily on tourism, which generates some 70 percent of their GDP. The prefectures of Arcadia and Evia have somewhat more diversified economies.

The wildfires affected almost 100 percent of the western Peloponnesus and the southern parts of Evia. The impact on the local and the national economy will be significant for some of years to come. For example, the prefectural Hotel Owner Associations report that since Monday August 27, the advent of the fires, room cancellations by tour operators have been heavy. Devastation of the landscape and its unique composition of vegetation will keep tourists away from the badly hit regions. Ancient Olympia, the Lake Kaiafa Spas, the long western Peloponnesian coast and other well known tourist destinations have been affected. On August 26 and 27, the fires came close to the ancient site of Olympia, the stadium and the museum, and they were diverted only meters before they reached the buildings and ruins. The surrounding pine forest has been destroyed including the famous hill of Cronion, overlooking the stadium. Given the economic and cultural importance of this site, the GOG Ministry of Culture, in cooperation with the Institute of Forestry Research, immediately began implementing a landscape rehabilitation project in the area. The 2008 Olympic torch will depart for Beijing from this location.

THE AGRICULTURAL ECONOMY

The structure of the landscape in both Peloponnese and Evia is a mixed land use characterized by typical Mediterranean forest complexes and diverse agricultural activities, many villages, hamlets, single farms, and occasional small towns. Farm land ownership per farming family ranges between 1-3 hectares.

The olive oil industry and the livestock sector were the most severely affected. Mature olive groves were wiped out and new olive trees need 6-7 years to enter into production. The Ministries of National Economy and Agricultural Development estimate that the total damage connected to agriculture (primary sector and processing) may exceed €1.5 billion. More accurate information will not be available until field evaluations are completed by the Agricultural Insurance Fund (ELGA).

The Prefecture of Elia, which was damaged the most, with almost 60 percent of the prefecture affected. Some 50 to 60,000 hectares of tree crops and forests, as well as 1,500 houses and farm buildings in 141 villages were consumed. In Messinia, about 19,000 hectares of pines and firs were destroyed on the mountain of Taygetos and in various spots around the prefecture. In Laconia, about 1/5th of the prefecture has been burned.

Thousands of productive animals, feed lots, machinery and infrastructure (electricity and telecommunication networks, irrigation networks, processing facilities, farm buildings, warehouses, etc) were lost. Reportedly, in Elia 35,000 animals are lost, 3,000 head in Arcadia, 2,100 in Evia, 21,000 head in Messinia, and about 14,000 in other locations making

a total livestock loss of 75,000 head. Most of these animals (98 percent) are sheep and goats, and it is estimated that the fires killed 6-7 of the total herd. In Messinia, more than 25,000 animals have been left without pastures and feed is scarce. On Evia Island 15,000 hectares of pastureland were burned, affecting an additional 40,000 grazing animals. Significant pasture loss is also reported in Laconia.

Damages from Greek Wildfires (From August 18 - 30, 2007) 1/
Preliminary Estimates (multi - source)

REGION	Prefecture	Hectares Burned (ha)	Forests Shrub land & Other natural Vegetation (ha)	Farm Land Pastures & Gardens 2/ (ha)	Number of Houses Burned (Fully & Partly)	Farm Buildings (Fully & Partly)	Other Buildings & Churches
Peloponnese	Elia	93,600	60,000	33,600	762	732	42
	Arcadia	61,200	41,200	20,000	295	328	9
	Messinia	25,000	19,000	6,000	135	41	6
	Corinth	2,500	2,000	500		15	1
	Achaia	30,000	24,000	6,000			
	Laconia	58,700	20,700	38,000	41	122	
	Argolis	1,500	1,000	500			
Thessaly	Larissa	2,500	2,000	500			
	Magnisia	8,000	7,000	1,000			
Central Greece	Evia	37,000	20,000	17,000	276	124	1
	Attica	6,500	6,000	500	4		
Crete	Rethymnis	1,000	1,000				
TOTAL		**327,500**	**203,900**	**123,600**	**1513**	**1362**	**59**

1/ Table is compiled by AgAthens, data are collected from various sources - (subject to revision)
2/ These are mostly olive tree and fruit orchards, pasture lands, some citrus & various field crops

SPECIAL CASE: PELOPONNESE - Character & structure of the agricultural sector

The Peloponnese peninsula forms the southern part of mainland Greece, and is separated from the mainland by the canal at the Isthmus of Corinth. A large, mountainous body of land jutting south into the Mediterranean Sea, the peninsula has an area of 8,278 sq mi (21,439,192 sq km). It is divided into 7 prefectures, Argolis, Corinth, Achaia, Arcadia, Elia, Messinia and Laconia. The latter 4 prefectures were hit by the recent wildfires.

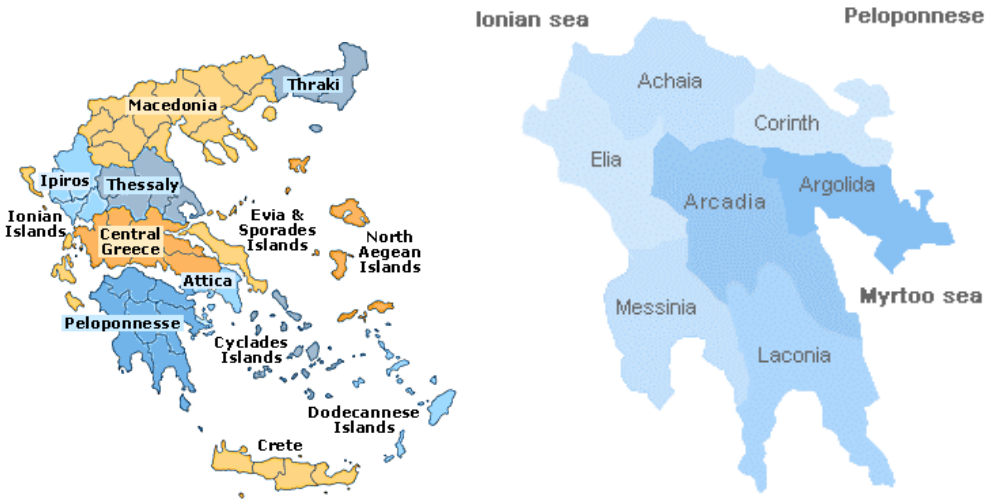
Predominately agricultural and pastoral, the Peloponnese produces black currants, sultanas, apricots, wine and table grapes, figs, citrus fruit, olive oil and table olives, chestnuts, apples, tree nuts, open air and greenhouse vegetables, processing tomatoes, cereals, forage plants, sheep & goat milk, feta cheese. The most fertile parts of the peninsula are the coastal strips in the north and in the west. Sheep and goat raising and fishing are among the major sources of agricultural income in rough locations in the mountains and along the coastline. The largest olive tree population in Greece is in the Peloponnese (about 48 million trees, 50% in Elia and Messinia prefectures - see following table).

Prefecture / Region	Number of Olive Trees
Argolida	3.300.000
Arcadia	2.200.000
Corinthia	3.400.000
Laconia	13.500.000
Messinia	16.600.000
Achaia	1.600.000
Elia	7.000.000
Peloponnese	**47.600.000 ***

(Estimates for olive tree population in 2006 by FAS Office in Athens, based on official statistics provided for the year 2000 and planting trends since then, ***Basic Source:*** *Statistical Review of the Olive Oil Sector. EU Reg 1332/02)*

** Greece's olive tree population is roughly estimated at 135 million in 2004*

The prefectures of Messinia and Iraklion of Crete have the largest olive oil production in Greece. Approximately 25-28 percent of the total olive tree acreage in Peloponnese is irrigated, mostly new and relatively young orchards, and mostly with drip irrigation systems. Some indirect irrigation of groves takes place in mixed cultivations with field vegetables and spring crops, or grape vines. Total Peloponnesus olive oil production can exceed 150,000 tons, which represents more than 30 percent of total annual Greek olive oil produced in a good year.



Reportedly, about 4.5 million olive trees were lost or partly damaged by the wildfires in Elia, 1 million in Messinia and another 1-1.5 million in the remaining regions; a total of about 7.0 million trees altogether. It is early to predict how many partly damaged trees will survive or when will produce again. The local "koroneiki" variety is mostly grown in these areas, a variety exclusively for oil rather than table olives. It is anticipated that a number of trees among those partly damaged will recover in the years to come, but it is too early for precise estimates. In the municipality of Zaharo (coastal Elia Prefecture) the olive oil is listed among Greece's top geographical indication. In Zaharo out of a total 20 villages, 18 have been totally destroyed (with the majority of houses and farms).

A return to full production will take at least 4-5 years, and only if new trees are planted in the immediate future. Local farmer organizations and agronomists are urging the Ministry of Agriculture to promote and proceed with tree replacements using the same varieties traditionally grown in the area and not to introduce new ones. As it is estimated that the Peloponnese alone will require some 4 million young trees it remains to be seen just what will happen. At present, the Greek tree nursery sector cannot supply such a large number in the short time required. It may be necessary for appropriate tree varieties to be imported. Certainly Greek nurseries will have to implement a massive promulgation program, and will certainly need to be financially supported.

The total number of trees lost in the Peloponnese corresponds to a production of 30,000 – 35,000 MT of olive oil. Nevertheless, Greece's olive oil production in 2007 is expected to be 20 percent higher than a year earlier, and should reach 380,000 MT.

In the prefecture of Laconia 20,000 hectares covered mainly with olive orchards mixed with forest vegetation have been destroyed. Laconia's tree crops are predominately olives and citrus. While a large number of citrus trees were lost, the Ministry of Agriculture (Farm Insurance Fund - ELGA) has not yet reported any details yet. ELGA is the Ministry's agency in charge of damage assessment and farm compensation payments. Compensation payment funding comes from both EU fund and the national budget.

GOG has paid the following immediate compensations to farmers hit by the wildfires. These "first aid" payments will be followed by additional compensation upon completion of damage evaluations. As of the end of September 2007, ELGA announced that total compensation payments reached €56 million, to over 46,000 farmers. This amount is part of the total payment expected to be made after the final damage evaluations have been recorded.

Initial Relief Payments

Activity and/or property damaged	Compensation paid In Euros per land unit/animal
Olive crop	1,500 Euro/Ha
Citrus and Apricots	3,000 Euro/Ha
Figs and stone fruit	1,000 Euro/Ha
Pistachio orchards	1,500 Euro/Ha
Almonds	500 Euro/Ha
Grapes, raisins, kiwis	1,500 Euro/Ha
Vegetables	2,000 Euro/Ha
Field crops	1,000 Euro/Ha
Sheep and goat	80 Euro/Head
Bovine animals, Horses	300 Euro/Head
Beehives	60 Euro/unit
Farm buildings, animal feed, loss of machinery etc	Compensations are programmed
Immediate support per family	3,000 Euro
Immediate support for affected families	€10,000 (+) €10,000 for loss of life (+) €8,000 for each injured family member
Student support	1,500 Euro/person
Tax payments are postponed in the regions suffered (VAT, Income Tax Payments, National Insurance payments, other)	Until 31st of October, according to the case (based on Relevant Ministerial Decisions signed – GOG Ministry of National Economy)

THE FOREST COVER LOSS

Over 200,000 hectares of forest cover and the diverse flora and fauna it was composed of have been lost. When added to the croplands affected the total burned hectarage is 328,000; the size of one of Greece's 51 prefectures. An approximation of closed canopy forest existed locally in numerous spots with large specimens of species like Quercus coccifera (indigenous oak), with mature Cupressus sempervirens (Cypress) and well-developed Pistacia lentiscus (wild pistachio shrubs), Pinus halepensis, Pinus maritima, Pinus brutia and Pinus nigra (common Mediterranean pines). Pinus halepensis is a natural survivor or regenerative, following burning on thin soils, and is planted as shelterbelts and slope-stabilizers. Indigenous fir forest cover (Abies Cephalonica) at much higher altitudes was also destroyed or affected in the mountains of Taygetos, Parnon and Menalon in the Peloponnese and the national park of Parnis near Athens.

According to a report published by the World Wildlife Fund (WWF) Hellas and drafted with the cooperation of The University of Thessaloniki's School of Forestry, it is estimated that a little over 30,000 hectares of Protected Landscapes of Ecological Importance were destroyed. These areas were designated for protection under the EU Natura 2000 Network. According to the report, damage estimates were made for a number of areas by mobilizing remote sensing techniques, in particular using the NigeriaSat-1 satellite images with 32 meter resolution (near infrared - false colour) in cooperation with DMCii in the UK. A more systematic analysis is needed to better classify land use and cover loss from wildfires based on a photo interpretation and image analyses that can provide a supervised classification data base and define hazardous areas for landslides, flooding and soil erosion. Such hazards need to be evaluated accurately and as soon as possible to prevent further loss of life and property (For WWF's Report in Greek language visit: http://www.wwf.gr/storage/additional/FIRE_report_Peloponnisos.pdf)

It is reported that any emissions due to wildfire massive deforestation will not count against Greece's legal obligation to control greenhouse gas emissions. Under the Kyoto Protocol, Greece was allowed to increase its emissions by 25 percent over 1990 levels. Natural sources, such as wildfires do not count. While forests have a natural cycle of fire and re-growth, this balance could be upset by global warming. Hotter, drier and longer summers mean more frequent forest fires with a net emission of CO2.

Apart from the loss of human lives, the destruction of forestlands will have far-reaching effects and result in an overall rise of temperatures, floods, soil erosion and landslides. Increasing unemployment in burnt over areas is expected and emigration of local populations to Athens and other big cities a likely result. The Peloponnese will face a serious decline in agriculture output (crop and livestock products), since those areas were key producers of olive oil, sheep & goat meat, feta cheese, fruits and vegetables, as noted above.

The GOG Forest Service, in cooperation with local forestry authorities, initiated urgent soil stabilization and flood prevention projects in the stricken areas, to be followed by reforestation attempts. Forest workers from all over the country, the Army and the local population will be enlisted to help.

Traditional methods and techniques are being used including wide-spread logging for creating wooden dams in selected high-risk spots to prevent erosion and collect sediment. Forest engineering groups and environmentalists are expressing their doubts about these methods. Various suggestions are being proposed, including the avoidance of logging, the

introduction hydro-seeding from the air with native seed blends followed by the spreading of straw or mulch and other soil stabilization materials, the usage of biodegradable light and easy to transport materials like straw wattles, blankets, etc. These techniques have not yet been introduced in Greece, and the materials mentioned are not yet manufactured or well known in the Greek market or among GOG reforestation agencies. Nevertheless, Greece possesses the largest airplane fleet in Europe for fire abatement and hydro seeding applications.

The U.S. Embassy in Athens, in response to the GOG's request, invited a six-member team of disaster-relief experts, including specialists from the U.S. Agency for International Development and the U.S. Forest Service to survey the affected regions. US Forestry Service has prepared a Workplan for Technical Assistance to Greece focusing on a Burned Area Emergency Rehabilitation (BAER) proposal. BAER assistance will be coordinated by the U.S. Forest Service International Programs and Disaster Assistance Support Program (DASP), with technical support from the following USG resources:

1. U.S. Forest Service Remote Sensing Applications Center (RSAC), Salt Lake City
2. U.S. Geological Survey EROS Data Center (EROS), Sioux Falls, SD
3. USAID/OFDA Geographic Information Unit (GIU)

The United States is sending another US$250,000 in relief supplies to the Greek Red Cross, bringing the U.S. contribution to more than US$1.5 million (€ 1.1 million). There is certainly room in this disaster for a continuing role for the US Forest Service.