

# Forest Fires and Climate Change – The Italian Law 353/00 to address economical speculation, portal security, data analysis.

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**Key words:** ClimateChange; EconomicProblem; law; Authority; Geoportal; ClimateAction; Legislation

## SUMMARY

Climate Change, as defined by the United Nations, is a long-term changing of temperature and meteorological models, which may happen either in a natural way or due to human actions, such as combustion of oil, gas, and carbon. Deforestation increases carbon dioxide emissions while landfills are more responsible for natural gas emission. Moreso, energy production, factory, transportation, construction industry and agriculture are equally responsible on greenhouse gas emissions.

In this era and context, the consequences of climate change have been most notable and frequent in various areas of the globe, and may include drought, sea level rise, floods, polar glaciers melting, intense storms and typhoons, and wildfires. Their effects are not just on earth but also affect the world's inhabitants. In fact, if we maintain indifference towards this phenomenon, climate refugees will drastically increase in the near future.

The Mediterranean region is vulnerable and susceptible to climate change. In the last decade, temperatures are at their all time high, causing drought while precipitation changes in intensity and frequency.

Italy particularly, saw an alarming increase in wildfires and forest fires resulting in the destruction of the local flora and fauna, the destabilization of the natural ecosystem, and the production of relevant economic damage. In the 2022, the Ecomafia 2022 report, analyzed the relation of environmental crime with climate change, particularly with arson-induced forest fires.

Our paper will tackle the Law 353/00 or the “Framework Law on Forest Fires” by the Italian government, its application and its limitations. Moreover, this will include the “Provisions to Combat Forest Fires and Other Urgent Civil Protection Measures” promulgated through Law of November 8 2021 the creation of the 2022 Forest Fire geoportal by the Forestry, Environmental and Agri-food Unit Command of the Carabinieri, and how such geospatial instrument can facilitate monitoring and prevention of environmental crime and the territory as a whole.

**SUMMARY (optional summary in one other language in addition to English, e.g. your own language)**

Type the summary in the second language here ...

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## **1. INTRODUCTION**

The United Nations identifies “climate change” as all the long-term modification of temperature and meteorological models. They can be natural or due to human actions. The swim of climate change due to the acts of human first of all is the combustion of fossil fuel, carbon, oil and gas. As example of emissions that cause climate changes are dioxide and methane. Another important problem is deforestation of land and forest that release carbon dioxide. Dumps are the major source of methane emissions, Energy, factories, agriculture and land use are the main contributors of emissions.

As the major elements that provide the climate changes are dryness, lack of water, big fire, raising level of sea, flowing, melting polar ice, storms and lack of biodiversity.

## **2. EFFECTS**

Over the effects upon the earth, the climate change should be affects above health of human race, above is capacity to farm food and above security. Some of us are more vulnerable than others about the effects of climate change. For example, people or citizens that live in insular zone, due to the raising level sea, and the grow of salt, have to move away from their places. Long period of dryness, are the main cause of famine. In the next future, is expected a growing of “climate refugees”. If all that is caused by storms, flowing and changing of seasons, fire could have also economical interest.

It is difficult to see the water crisis when there are countries afflicted by floods.

It's hard to perceive the disappearance of the Arctic ice when the news talks about extreme weather events and increasingly harsh winters.

### **2.1 Dangerous Elements and Hopes**

But it is precisely this climate instability, caused by the slow warming of our world, that's perpetrating these Extreme. Its consequences can devastate economies, infrastructure and undermine stability. A situation that UN Secretary-General Ban Ki-Moon described in 2011 as A diabolical mixture.

Greenhouse gases are at the level of 4.5 million years ago. There were still mastodons and mammoths on Earth the last time the concentration disodium dioxide (CO<sub>2</sub>) in the atmosphere has reached today's levels at 417 parts per million, according to the National Oceanic and Atmospheric Administration.

Scientists say CO<sub>2</sub> levels today are comparable to those of the Pliocene epoch, which dates back to 4.1-4.5 million years ago, when sea levels were about 24 meters higher than today and the average temperature was almost 4 degrees warmer.

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The earth has seen 20,000 years of change happen in 170 years, since 1850 human activities have caused CO<sub>2</sub> concentrations to soar by 48%. It took 20,000 years for the earth to reach these levels naturally, from the last glacial maximum when the massive Laurentide Glacier covered a third of North America, from north to the height of N.Y.

July 2021 was the hottest month on record since records began 142 years ago. Worldwide, both land and ocean temperatures were 0.93° higher than the 20th century average of 15.8°C

Planting trees is not enough, it is a beautiful, noble, regenerative activity, but it is not enough. To reach zero emissions by 2050, it would mean planting 1.6 billion hectares of new forests, or five times the size of India, or more than all the world's agricultural land.

The extinction of bumblebees, the most important pollinators, are endangered due to several factors or causes, such as insecticides, climate chaos that leads many species to move or even die. Their loss could have dire consequences for ecosystems and agriculture.

Spring arrives earlier, nature tries to keep up with the early springs and sparse autumns brought by the rising temperatures. The first oak leaf in 2020 arrived 10 days earlier than the average for the 2000-2009 period.

Antarctica loses of ice every year equivalent to one Everest, that is, it is losing 151 million tons of ice every year.

The homes of 200 million people will be below sea level in 70 years. Countries such as China, Bangladesh and India are particularly vulnerable to rising seas, coastal storms and flooding, as are the Netherlands and the United Kingdom

Deserts are expanding, every year more than 12 million hectares of land are lost due to desertification, land degradation and drought, the same area as Germany.

75 million children are food insecure; 155 million people were exposed to severe food insufficiency in 2020 due to extreme weather conditions, conflicts, economic crises.

Deaths caused by heat waves are increasing. Extreme temperatures are proving increasingly fatal. Globally, this caused the premature deaths of 296,000 people in 2018 alone.

The concept of a point of no return is scary. What many people don't understand about the current level of warming of the plants is that if we exceed a certain threshold, physics will take over.

Once the ice caps have reached a certain rate of melting, they will no longer be able to support their mass. This is called surface mass balance, and exceeding the point of no return means that the ice sheet can no longer sustain its own mass. If the Paris Agreement were to remain as stipulated in the Paris Agreement, the 1.5° increase would not exceed this critical point. But on the basis of the values of the last century, the prospects are not good.

But we have hopes, Renewables are rising, Even if the request of carbon and gas is growing, renewable try to reach over half the request of electricity in 2021. Renewable try to grow up 8% and the price of electricity they give is less expensive than the electricity come from carbon.

Some animal species are living a new era, like blue whale and humpback whales. Thank to oceanics zone under control with sustainable management.

New technologies give us answers, the human race has the ability to compensate some damages that us had been create. The man should be good to protect environment as much as to destroy it.

The World is waking up, recent study gave the result that during a survey the 70% of 3000 people today know and understand that the human activity is dangerous for climate and understand that degradation is dangerous for himself.

## **2.2 The Mediterranean region**

The Mediterranean region is highly vulnerable and sensitive at the climate change and take place for intensity and frequency, of natural extreme disasters. During the last years in that contest, had been registered consequence in diffusion of fires, dysfunctions and pathogens, that have been caused real effects not just upon the ecosystem of the forest but also in the local economy. In the next close future, the highest temperature and the dryness get worse the period of dryness for the Mediterranean forest, putting at risk their health and functionality, decreasing their productivity and ability to provide ecosystem services.

Italy particularly, saw an alarming increase in wildfires and forest fires resulting in the destruction of the local flora and fauna, the destabilization of the natural ecosystem, and the production of relevant economic damage. In the 2022, the Ecomafia 2022 report, analyzed the relation of environmental crime with climate change, particularly with arson-induced forest fires.

From the analysis of the last twenty years, it appears that in Italy 40-50% of the territory affected by fire is made up of forests (source ISPRA), while most of the fires concern urban-rural interface areas that often spread to the forest coming from outside. It is clear that climate change is exacerbating the criticality, frequency, intensity and duration of the phenomenon of fires that develop throughout the year with very serious damage to ecosystems and biodiversity.

Fires are prevented and stopped above all thanks to interventions and actions from the ground, for the effectiveness of which concrete investment in prevention, planning and programming is irreplaceable.

Among these actions, Law 353 of 2000, implemented both in Sicily and in Sardinia, establishes that "wooded areas and pastures whose stands have been crossed by fire cannot have a destination other than that which existed before the fire for at least five years" and "it is also forbidden for ten years, on the aforementioned stands, the construction of buildings as well as structures and infrastructures aimed at civil settlements and productive activities".

## LA CLASSIFICA REGIONALE DEGLI INCENDI DOLOSI COLPOSTI E GENERICI NEL 2021

Regioni	Reati	% sul totale reati	Superficie boscata e non boscata (ha - ettaro)	Persone Denunciate	Persone Arrestate	Sequestri	Illeciti amministrativi	Sanzioni amministrative
1 Sicilia	993	18,4%	81.590	16	2	3	130	121
2 Calabria	674	12,5%	35.480	26	2	5	156	160
3 Puglia	601	11,2%	3.660	13	1	4	914	975
4 Campania	553	10,3%	5.564	47	3	14	217	228
5 Lazio	391	7,3%	6.854	40	2	8	258	258
6 Toscana	379	7%	233	112	0	8	319	317
7 Basilicata	331	6,1%	2.351	37	2	3	174	182
8 Sardegna	293	5,4%	19.228	82	0	19	179	0
9 Liguria	198	3,7%	402	53	1	11	196	200
10 Lombardia	163	3%	102	31	0	5	166	181
11 Emilia Romagna	155	2,9%	13	52	0	5	86	87
12 Piemonte	136	2,5%	820	33	0	4	188	178
13 Umbria	121	2,2%	162	23	1	4	34	34
14 Abruzzo	119	2,2%	2.514	24	1	3	28	29
15 Marche	98	1,8%	30	36	1	10	50	50
16 Molise	92	1,7%	466	7	0	1	89	90
17 Friuli Venezia Giulia	35	0,6%	71	3	0	0	5	5
18 Veneto	30	0,6%	12	6	0	0	81	81
19 Trentino Alto Adige	19	0,4%	23	16	0	0	24	24
20 Valle d'Aosta	4	0,1%	0	1	0	0	0	8
<b>Totale</b>	<b>5.385</b>	<b>100%</b>	<b>159.575</b>	<b>658</b>	<b>16</b>	<b>107</b>	<b>3.294</b>	<b>3.208</b>

Fonte: Elaborazione Legambiente su dati del Comando Unità Forestali, Ambientali e Agroalimentari Carabinieri (CUFA), dei Corpi forestali delle regioni a statuto speciale e in Sicilia delle 2 ordinanze di custodia cautelare eseguite da carabinieri della Stazione di Noto (Siracusa); i dati relativi agli ettari sono quelli rilevati per superfici superiori ai 30 ettari dall'EFFIS (European Forest Fire Information System) 2021.

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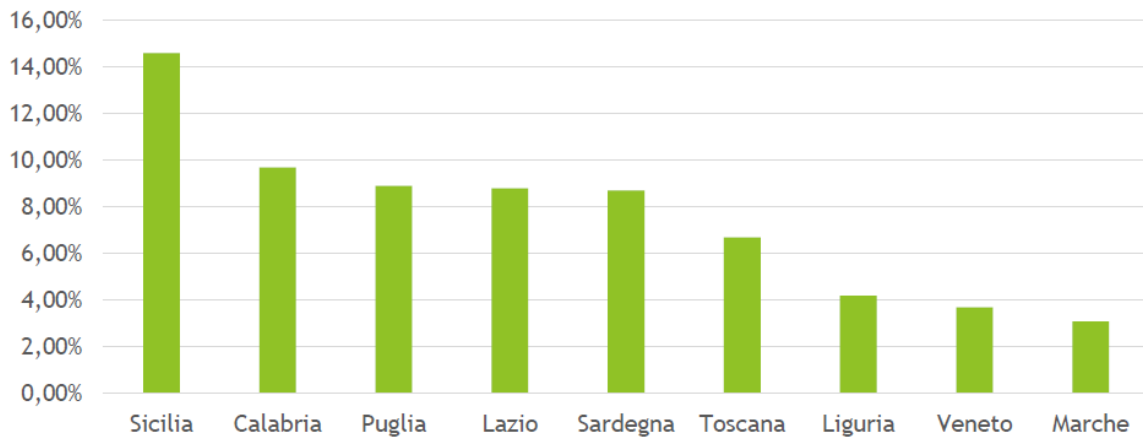
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## 2.3 ECOMAFIA 2023

Ecomafia identify all the sectors where the organize crime had choose traffic and illegitimate disposal of waste. 1991 is the first time when is verify the crime of this type. The word ECOMAFIA appears for first time in 1994 in a public document from Legambiente.



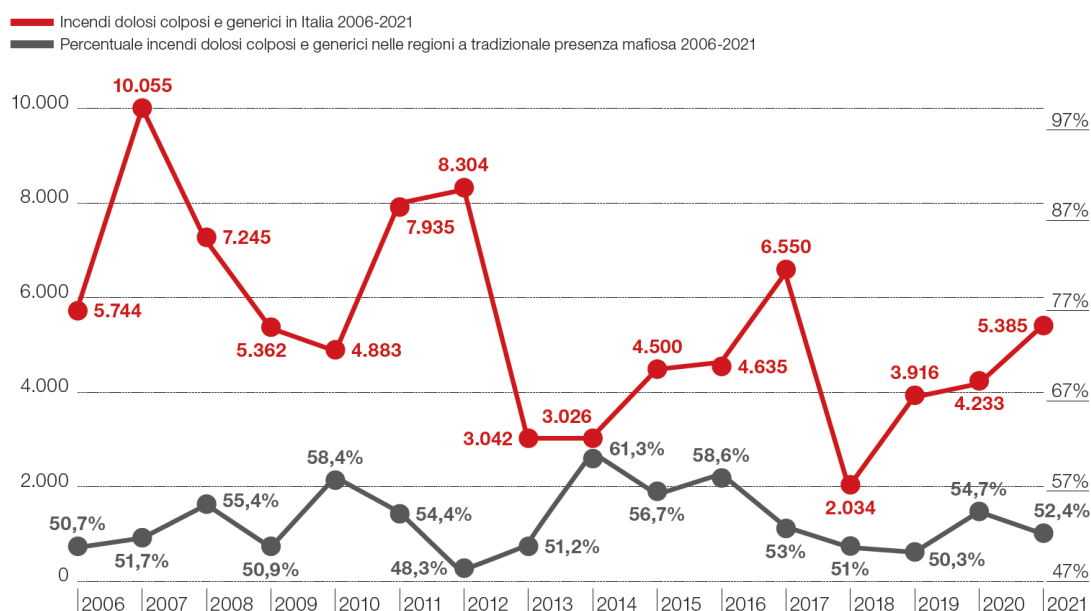
The way to work for ecomafie, is littering waste in the environment and waters, Removal of toxic waste classified as no toxic, Illegal burn of waste, exportation of dangerous waste in developing countries. The consequence are high damages of workers during the movement of wastes, Environment pollution of transit zone or destination zone of that wastes. Damages at the ecosystem of that district.

During 2022 an increase of +28.7% from 2021 in illegal way of concrete and +4.3% against fauna.

Analyzing the last twenty years, in Italy 40-50% of land hit by fire is Forests, however, fires affect rural area that are close to land or forest.

The damage caused by fire is not just for forest heritage, but also for his habitat, biodiversity, animals. More are the fires in the same areas, during the time, more damage and problems for animals, fauna.

## INCENDI DOLOSI - COLPOSI - GENERICI IN ITALIA (2006-2021)



Fonte: Elaborazione Legambiente su dati del Comando Unità Forestali, Ambientali e Agroalimentari Carabinieri (CUFA) e dei Corpi forestali delle regioni a statuto speciale (2006/2021)

### 2.4 Law 353/2000

A law that protects destination of use of lands due to pyromania. This law establishes “the forest zone and pasture that are hit from fire, couldn’t receive a different destination of use from the first before the blaze for 15 years.” Moreover “it is also forbidden for ten years the construction of infrastructure or structure for residential settlement and productive activity”. In cities where is no present local strategic plan, is forbidden for ten years every construction, for five years is forbidden reforestation with public incentive, forbidden also for ten years hunting and grazing and for three years the opportunity of harvest.

In case of transgression of those bans, monetary sanctions or penal case are given to the transgressor.

57% of fire are from human actions, 14% due to agriculture actions, 2% natural case, and 27% undefined cause.

The 41% start point of fire are inside forest, 14% in grazing land. 19% start point of fire are in non-agriculture zones, 24% close to roads, 2% undefined cause.

An important aspect is the abandonment of agricultural zones are increasing, and that may cause possibility of fires or fire risk.

The law gives to the Regions, the obligation to write a regional program of prevention and fight against fires. Under regional guidelines, an approved regional program must determine preventive actions, that means to identify areas and periods that are under risk of fires; preventive activity also means mitigations of damages with the use of all the control systems of areas and cultural actions right to improve vegetable asset of natural sites.

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To establish priority and urgent actions necessary to prevent and mitigate damages, the local authority should use survey directly on the field.

The action of fight against fires, are patrol activity, supervision, sighting, allarm and putting out with transportation by land and by air with the use of firemans.

Regions are called to coordinate all their fireproof structures with the National structure, establishing and managing during the period of emergency with an operative center that control constantly the problem.

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## **BIOGRAPHICAL NOTES**

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