

TOMUN 2021 Background

Paper: The question of implementing effective environmental management techniques to reduce problems of fire



i. Introduction of Topic

Managing the spread of fire, being man-made or as a cause of nature, poses difficulties and is a global issue on the rise. Naturally, forest fires appear to be the main cause of large scale fires. The techniques used by national and local companies throughout the world do not always coincide with one another, causing confusion and disagreement on a global scale. However, putting out fires of such magnitude is considered unsustainable, from an environmental point of view. For this reason, the United Nations has made multiple efforts to examine how countries can collaborate and come up with a singular effective approach to eliminate fires occurring in different circumstances.

In fact, these countries have decided to come together to take care of this environmental issue in a way that could be applied internationally. The Incident Command System (ICS) was a system developed during the *International Woodland Summit* hosted by the United Nations in Sydney, Australia in 2005. It was resolved that this system would have to be flexible, in a way that it should suit a particular country's "*existing political, administrative or cultural systems, customs and values*" (FAO). The main goal was to have a more advanced and thought-out response to emergency situations such as wildfires. In this way, a universal approach to management of fires

would not only be beneficial, but proves to be essential. Since ICS is a practiced model in many countries, there is considerable advantage of this system. The way that this system operates can be categorized in four levels:

- Control - immediate response/surveillance of the incident
- Planning - collecting data on the accident and planning response actions
- Operations - gathering additional resources to combat the accident
- Logistics - gathering services, facilities (healthcare, social) to deal with the incident (FAO).

This model gives countries an option to further their awareness on the spread of fires. However, the ICS is only a prototypical option for countries dealing with large scale fires, with no official reinforcement. Thus, there is no laid-out plan yet for these harmful fires.

ii. Definition of Key Terms

EMS: (Environmental Management System) a system consisting of procedures and processes for training of personnel, monitoring, summarizing, and reporting of specialized environmental performance information to internal and external collaborators of a firm.

FAO: (Food and Agriculture Organization) a specialized agency of the United Nations that initiates efforts to defeat hunger and improve nutrition and food security, while involving local communities in the management and protection of their forests.

ERCC: (The Emergency Response Coordination Centre) coordinates the assistance to countries in which disasters have taken place, by serving assistance such as relief items, expertise, civil protection teams and specialised equipment. They specialize in man-made disasters and natural hazards at a European level.

ICS: (Incident Command System) A structured, on-site emergency response concept developed to enable its users to follow a specific operational system for the specifications of single or multiple events without being constricted by jurisdictional boundaries.

Implementing: To apply, or execute. In this particular context, to implement effective environmental management techniques to reduce the problems of fire.

Wildfire: An unplanned fire that burns wildlands and more often in rural areas.

Fire Danger: A generic term used to express an evaluation of fire condition variables that define the ease of combustion, the rate of spread, the difficulty of control and the effects of fire, also expressed as an index.

Fire Suppression: All operations associated with the monitoring and extinguishing of a fire following its discovery (synonyms: firefighting, fire control).

Planned Fire: A planned fire is a managed fire or wildfire that burns within specified boundaries, such as a fire limited to a predetermined location and produces the fire behavior and characteristics necessary to meet the planned fire conditions and/or the resource management goals.

iii. Background Information

Fires began occurring 405 million years ago, sometime before the Early Devonian period, although the issue truly started arising between 1750 and 1870 due to human involvement. This is due to the increase of the human population, which is closely linked to the expansion of agriculture and farming which require land clearing. Plenty of farmers at the time (and also more recently) resorted to burning wildlands in order to clear it up, and needless to point out, the method often got out of control. More causes

of fires are cigarette stubs, burning debris, unattended campfires, engine sparks, equipment failure, fireworks, and arson.

More recently, since the 1980s, wildfires have been starting because of climate change. The rise in temperature causes the moisture from the wilderness to evaporate, and ultimately becoming more susceptible to burning. Fires are an issue because they cause the destruction of properties, wildland, and may cause heart or lung diseases from smoke (Penney). Fires also contribute to the issue of climate change, given the destruction of forests and the general wilderness. 85% of wildfires nowadays are due to human involvement (Rinkesh).

Areas that have most been affected by fires are:

The Arctic: During the Summer of 2020, the Arctic, more specifically Northern Russia and Siberia, have had the worst fires in 60 years. The arctic circle reached the temperature of 38°C (the average summer temperature in the Arctic is 3-12°C). Thawed farmland in Russia (about the size of Belgium) was consumed by wildfires.

Indonesia: Being a tropical country, the issue of climate change plays a smaller role in the wildfires. The fires in Indonesia started more so from the burning of land for agriculture. Central Kalimantan Province in Borneo declared a state of emergency because the fires had gotten out of hand.

Brazil: In June 2020, Brazil has had one of the worst fires in the Amazon forest in 13 years. The main issue is always due to farming and agriculture. Farmers set areas of the rainforest on fire in order to clear the land. Climate change does indeed have a play in this issue, since it caused droughts which makes the trees and ground more flammable, which makes fires spread more. The fires also affected citizens and indigenous communities who call the Amazon forest their home.

Argentina: Similarly to Indonesia and Brazil, many of the fires had been starting because of farming. Fires have spread across the grasslands in Central Argentina, resulting in an extremely dry winter season.

Australia: In the early months of 2020, Australia has passed the record for the worst wildfire season. A minimum of 30 people had died, as well as an alarming 3 billion animals. Climate change was a significant factor to the fires in Australia. With climate change, Australia's wildfires were 30% more likely to burn than if the world did not have climate change.

United States of America: Wildfires have been devastating the Western US, always because of climate change and the lack of moisture in the area. Areas such as California have always been prone to fires, being a relatively dry area. Fires in California were mostly started by power lines as well as cigarette stubs and fireworks. The western US has had a long dry season, making the environment much more susceptible to fire (Penney).

iv. Major Countries and Organisations Involved

Major countries:

- Australia: almost always suffers intense deforestation during the driest months of the year.
- Brazil: the fires set by farmers are getting out of control and they risk burning crucial pieces of the Amazon rainforest.
- USA: regularly experiences major deforestation because of forest fires, especially in the states in proximity to California (and California itself).

Major organizations:

- The World Conservation Union (IUCN)
- The Nature Conservancy (TNC)

- The Worldwide Fund for Nature (WWF)

These three organizations have come together to work with smaller organizations to do the following:

- Supporting research to improve the understanding of forest fires and their ecology, ecological and social costs and benefits, causes and management options.
- Building awareness amongst policy-makers, the public and the media of the underlying causes of catastrophic forest fires.
- Mandating and equipping managers to implement integrated fire management programs.
- Involving local communities and land managers in management planning and implementation, assisting them to participate effectively.
- Developing and enforcing compatible and mutually reinforcing land-use laws that provide a legal basis for the ecologically appropriate use of fire.
- Discouraging land management practices that predispose forests to harmful fires.
- Promoting management strategies to mimic natural fire regimes, including techniques such as prescribed burns and managed wildfires.
- Avoiding manipulating natural or well-established fire regimes.
- Establishing reliable fire monitoring systems that provide early warning of high fire risk and fire occurrence, and include evaluation of ecological and human impacts of fire.
- Preventing further forest loss and degradation from recurrent catastrophic fires, and reduce fire risk in forested landscapes, through ecologically appropriate restoration.

v. Timeline of Events

1970: Assistance in cases of natural disaster, invites the Secretary-General to submit recommendations on the planning of potential disasters at the national and international

levels, including technology that is able to support the immediate coping of disasters, including fires (UNDRR).

1971: Creation of the United Nations Disaster Relief Office (UNDRO). The UNDRO promotes the study, prevention, control and prediction of natural disasters (UNDRR).

1972: The first UN environment conference is held in Stockholm (Aljazeera).

1974: Strengthening of the United Nations Disaster Relief Office. The GA requests the Secretary-General to continue to investigate the feasibility of measures to strengthen the UN machinery involved in the disaster prevention and pre-disaster planning (UNDRR).

1981: Strengthening the capacity of the United Nations system to respond to natural disasters and other disaster situations. The GA stresses the need to take full advantage of information provided by the early-warning monitoring systems made for the UN to respond to natural disasters, and for early-warning systems (UNDRR).

1992: William Rees introduces ecological footprint; 'Earth Summit' in Rio de Janeiro (OntarioTech).

1993: International Decade for Natural Disaster Reduction. The GA agrees to convene in 1994 the World Conference on Natural Disaster Reduction (UNDRR).

1994: World Conference on Disaster Reduction, Yokohama, Japan. The World Conference was held in Yokohama, Japan, from 23 to 27 May 1994. Res. 49/22 A endorses the Yokohama Strategy and its Action Plan introduced at the World Conference (OntarioTech).

2000: International Disaster Prevention Plan. The Economic and Social Council tough up on the mechanisms for the International Decade for Natural Disaster Reduction. The

GA endorses the Secretary-plan General to set up an inter-agency task force and an inter-agency disaster reduction secretariat (UNDRR).

2002: The Johannesburg Action Plan. The World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, in August-September 2002 presented the ISDR with a concrete collection of priorities within the context of the Sustainable Development Agenda, to which both the Inter-Agency Task Force on Disaster Prevention and the UN/ISDR Secretariat, along with partners, would gradually shift their focus and capacity towards integration and integration (UNDRR).

2003: International Strategy for Disaster Reduction. The GA agrees to convene a World Conference on Disaster Mitigation in 2005 to complete the review of the Yokohama Strategy and its Action Plan to identify concrete activities aimed at ensuring the fulfillment of the Plan of Implementation of the World Summit on Sustainable Development on Vulnerability, Risk Evaluation and Disaster Management (UNDRR).

2005: The Incident Management System. adopted by the International Wildland Fire Summit (Sydney, Australia, 2005). This conference developed the standard system of the ICS system (UNDRR).

2015: Launch of SDGs (Sustainable Development Goals). and urgent call for action that includes the issue of fires, specifically in SDGs 11 and 13 (OntarioTech).

vi. Relevant UN Treaties and Events

- The Statement of Forest Principles (1992)
- The United Nations Forum on Forests (UNFF)
 - The goal of the UNFF is to:
 - Reverse the loss of forest cover worldwide through sustainable forest management;

- Enhance forest-based economic, social, and environmental benefits;
 - Significantly increase the area of sustainably managed forests;
 - Reverse the decline in official development assistance for sustainable forest management and mobilise significantly increased new and additional financial resources from all sources for the implementation of sustainable forest management (Timeline)
- SDG #15:
 - Specifically states that all forest shall be sustainably managed by 2020 (FAO)
- SDG # 6
 - underlines the importance of forests for water sustainability (FAO)
- SDG # 13
 - Although forests aren't mentioned they are a key part in stopping of global warming (FAO)

vii. Main Issues

- Problems that fires may cause are the destruction of infrastructure, private properties, wildlands, habitats, vehicles, etc. Fires also make soil infertile, as burning it will decay the soil's nutrients. The burnt soil is not effective for agriculture.
- Firefighters and civilians may lose their lives trying to stop wildfires. A significant amount of wildlife is also killed, for example the 3 billion animals whose lives were taken in the Australian bushfires of 2020. This promotes endangerment of flora and fauna.
- Needless to say, trees and plants are burned, and can no longer produce due to their inexistence. Fewer trees, means there is less clean air.
- Generally, the destruction of these all contributes to great economic loss, which makes nations more frugal with their money (affecting their economy). Nations

could have potentially spent the money for reparations on funds for public services such as defence, health and education; but also improvements in the quality of life.

- Fires also create particle pollution within the smoke, which can enter and remain deep in the respiratory system. Particle pollution may trigger asthma attacks, heart attacks, strokes and may very well kill people.
- Possible solutions such as following local regulations and laws, may help to prevent accidental fires. Avoiding burning anything in nature should be the most effective way to prevent fires by human involvement.

viii. Previous Attempts to solve the Issue

- In march of 2018 there was a “Fire Funding Fix”. This increased the budget for the US response to forest fires from 1.4 billion to 2.5 billion, preparing better for forest fires helps to prevent deforestation but wasn't effective in solving the underlying problem (Pierre-Louis).
- The [Endangered Species Act](#) gives a background to the risks of losing whole ecosystems to forest fires, many potential policy implementations to help the fire problem have been built on the foundation of this act.

ix. Possible Solutions

- Implementation of the ICS to a higher extent: by having an international model/protocol that all countries abide to, is easier for them to obtain necessary materials and training. In addition, following local regulations and laws helps citizens stay aware of the dangers and consequences of fires (include proper disposal of potential flammable objects). It additionally encourages them to report any activity that could lead to large scale disasters.
- Use damaged/burnt wood (wood byproduct): using vegetation or already damaged wood that is more prone to fire as an alternative to burning fossil fuels. This will remove “greenery” from the forest but it would reduce the risk of the

entirety of a forest catching fire. Tree parts can be additionally turned into furniture or paper (Holst).

- “Establishing reliable fire monitoring systems that provide early warning of high fire risk and fire occurrence, and include evaluation of ecological and human impacts of fire” (Moore).

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