



UNITED NATIONS
Office for Outer Space Affairs

UN-SPIDER
prototype of a Decision Support System for
Forest Fires

United Nations Office for Outer Space Affairs
United Nations Office at Vienna
www.unoosa.org



Contributions to forest fire management

Forest fires continue to destroy thousands to hundreds of thousands of hectares of forests in many countries of the world.



Image of a forest fire in Honduras, courtesy of ICF MiAmbiente, Honduras



A decision support system to contribute to forest fire management

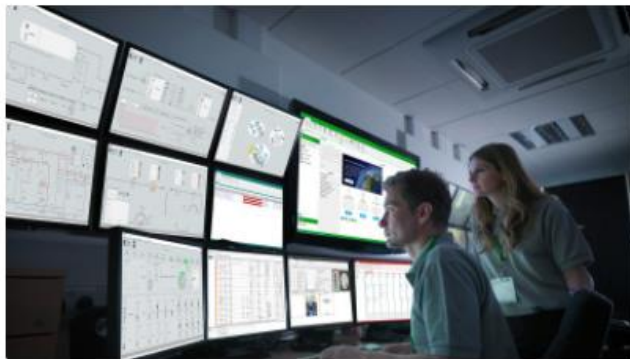
UN-SPIDER together with the support of the Latin American Network of Terrestrial Observation of Forest Fires (RedLATIF) to contribute to better management of forest fires:

The aim is to develop a system to visualize relevant and timely information regarding:

- Those weather and vegetation conditions that may predispose the manifestation of forest fires. (pre-existing conditions and those that may influence the behaviour of the forest fire in the next days).
- The status of hotspots and active fires as seen through EO imagery and EO products (current conditions).
- In case of fires, their geographical extent and burn severity. (conditions after a fire).



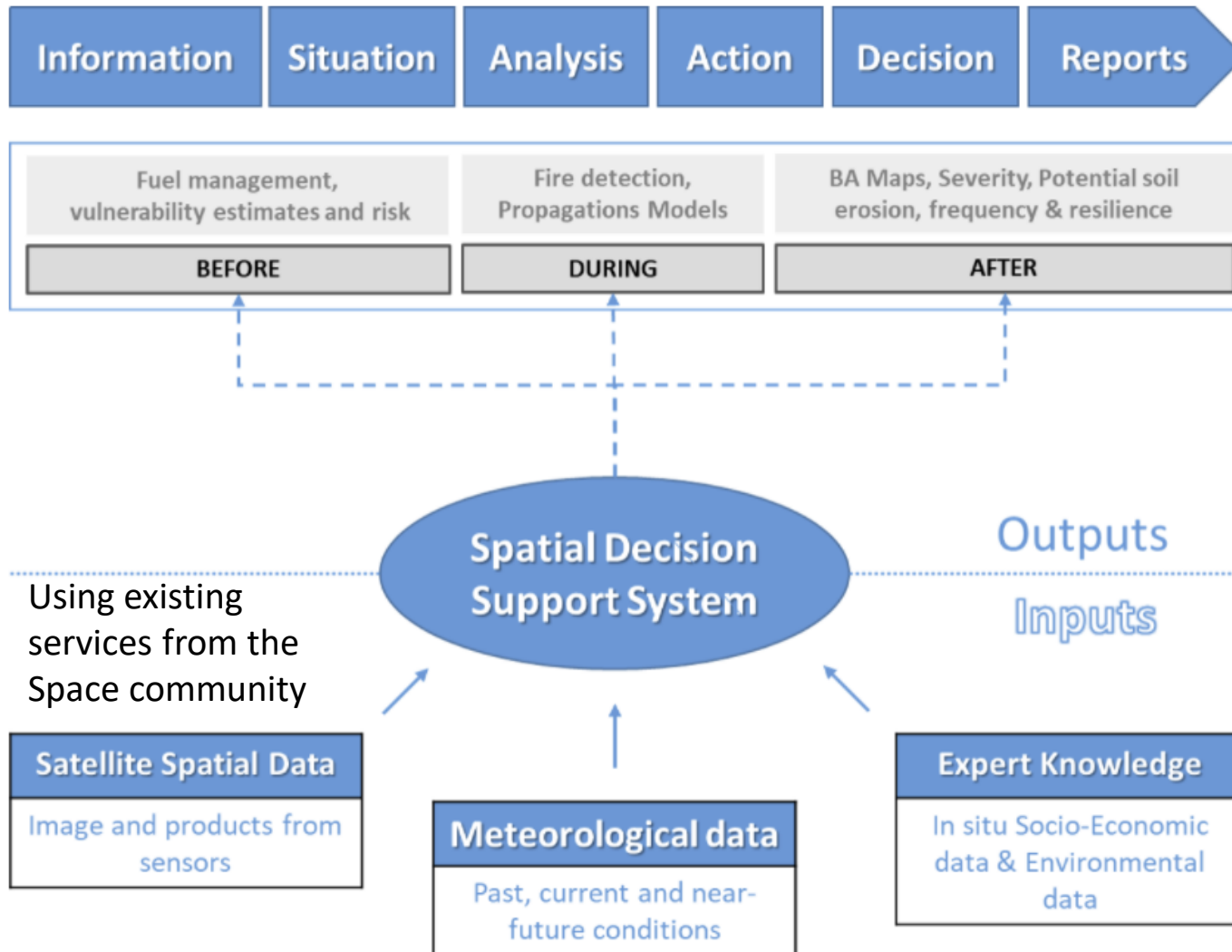
Decision Support System for Forest Fires: DSS-FIRE



In recent years, wildfires have dramatically increased in size frequency and impact, often straining the capacity of management systems especially in developing countries, producing large environmental and economic losses and having an impact on human lives. The Forest Fire Decision Support System Project (**DSS-FIRE**) grew out of the need to improve these decision-making processes, as well as to take advantage of improvements in [earth observation \(EO\)](#) technology, [cloud computing](#), information supply and geospatial analysis.




Geospatial Decision Support System Model (GDSS)





Terminal 1 (pre-existing conditions)



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DSS of FIRE UN-SPIDER How does it work? **BEFORE** DURING AFTER

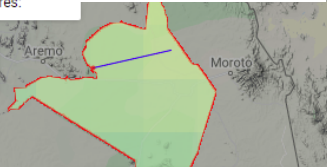
Climate and hydrometeorological conditions

INICIO

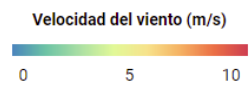
Kalongo

Seleccione un país y región de interés:

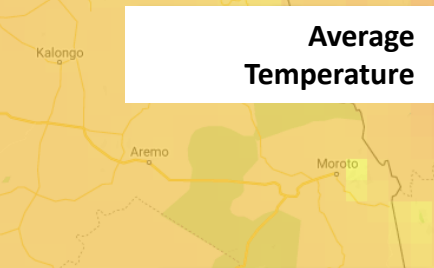
Windspeed and Direction



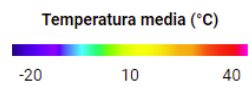
Velocidad del viento (m/s)



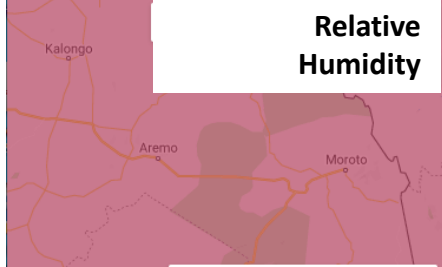
Average Temperature



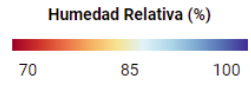
Temperatura media (°C)



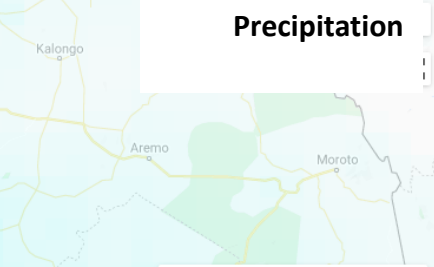
Relative Humidity




Humedad Relativa (%)



Precipitation



Precipitación (mm)



Susceptibility of vegetation to forest fires

El presente script permite elaborar un mapa de la susceptibilidad a la ocurrencia de incendios forestales a escala semi-detallada (1:25.000), mediante el uso de imágenes Sentinel-2 y/o datos secundarios.

Evaluation of the susceptibility of vegetation to forest fires

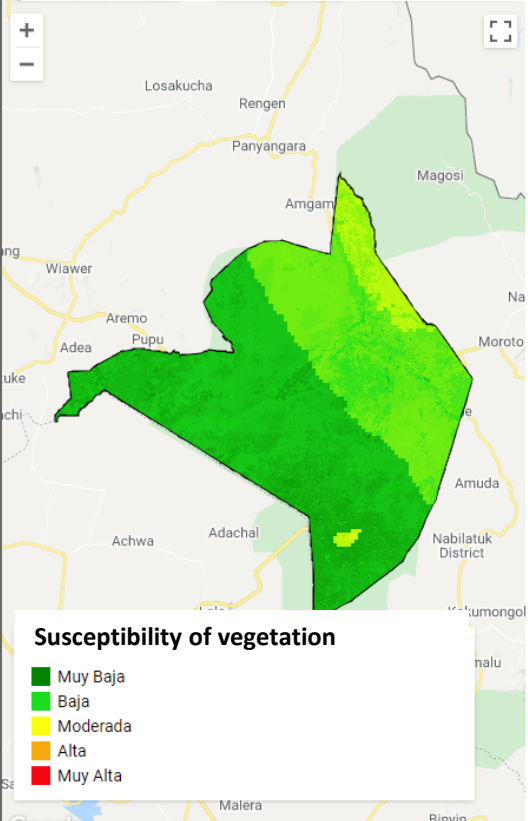
A continuación agregue el país de interés de la base de división político administrativa de GAUL-FAO-2015:

Datos Externos

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Susceptibility of vegetation

- Muy Baja
- Baja
- Moderada
- Alta
- Muy Alta

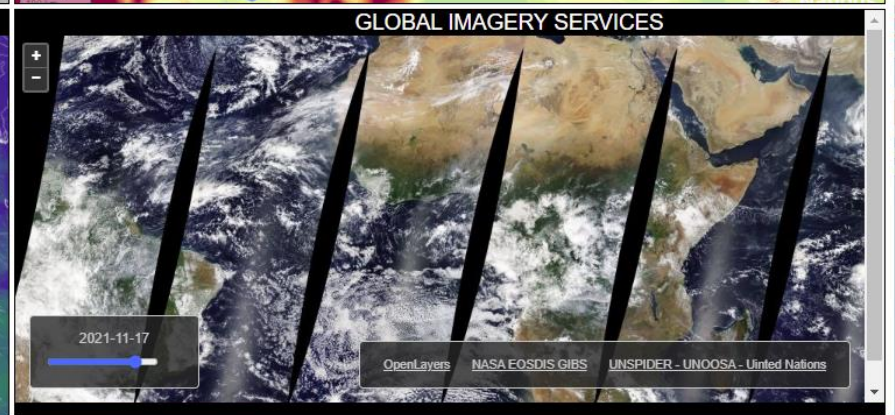
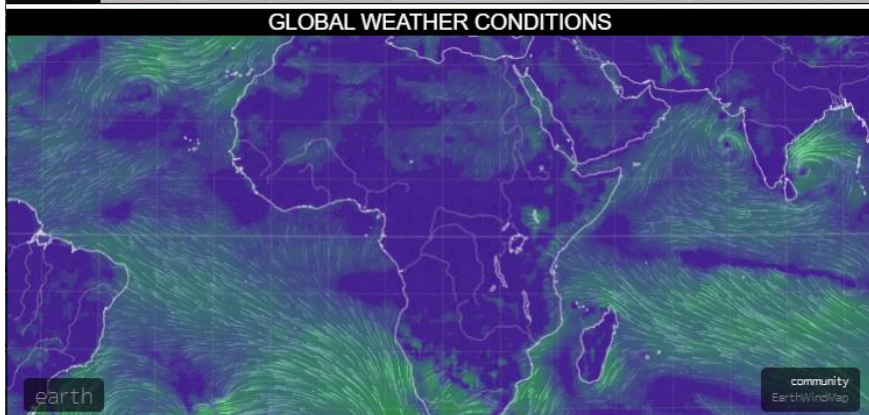
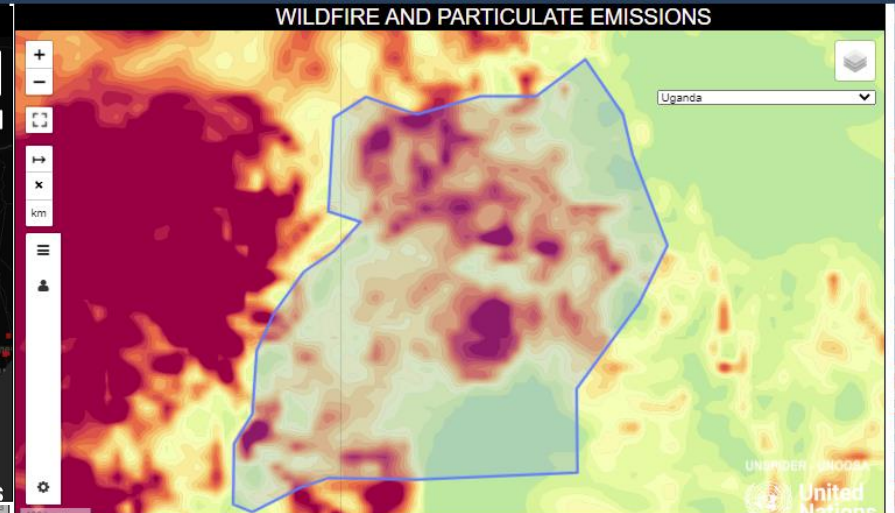
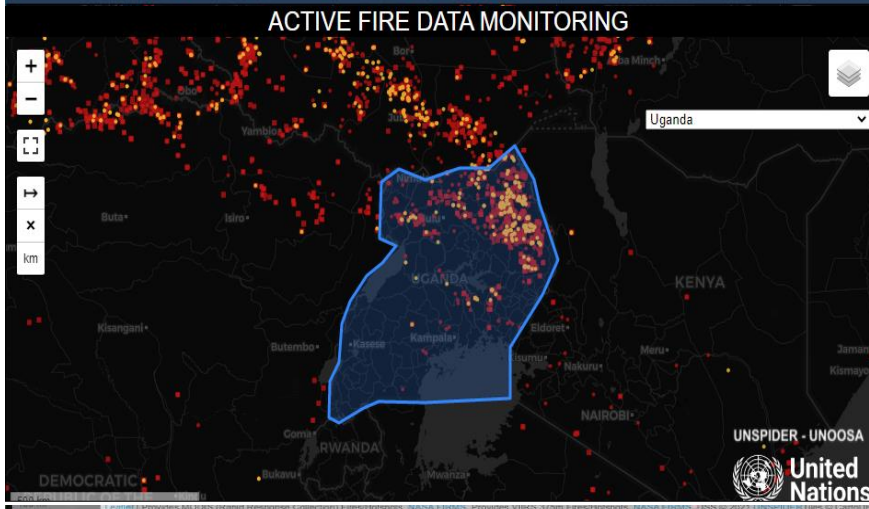




Terminal 2 (current conditions)



DSS of FIRE UN-SPIDER How does it work? BEFORE DURING AFTER





Post-fire conditions

Windspeed and
Direction

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DSS of FIRE
UN-SPIDER
How does it work?
BEFORE
DURING
AFTER

Geographical extension and burn severity

El sistema de respuesta ante los incendios forestales, permite evaluar el impacto del incendio conociendo el área afectada y el nivel de severidad del fuego.

Haga Click en un punto sobre el mapa para inspeccionar los valores:

Tenga en cuenta!

El cálculo del área quemada y la severidad de los incendios se realiza mediante complejos algoritmos sobre más de 35 capas, esto puede tomar algunos segundos en función de la velocidad y el ancho de banda de su conexión a internet...

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INGRESAR ÁREA DE INTERÉS

CALCULAR ÁREA QUEMADA

CALCULAR SEVERIDAD

Level of burn severity

- Alto Rebrote
- Bajo Rebrote
- No Quemado
- Baja Severidad
- Moderada-Baja Severidad
- Moderada-Alta Severidad
- NA

Map data ©2021 10 km

Keyboard shortcuts | Terms of Use | Report a map error

existentes a nivel regional y nacional con el fin de proporcionar una visión y evaluación integrales de los regimenes de incendios y los efectos de los incendios a nivel mundial y proporcionar herramientas para respaldar la gestión operativa de incendios forestales desde el nivel nacional, a escalas globales.

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informa
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A continuación agri
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Adicione área

ESTADÍSTICAS DE Á

PERDIDA O RECUPER

Datos Externos

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Next steps

- **Complete the technical development of the decision support system.**
- **Present it to national forestry institutes in selected developing countries.**
- **Develop specific systems at the request of selected national forestry institutes.**
- **Assess the functionality.**





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THANK YOU

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