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
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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).

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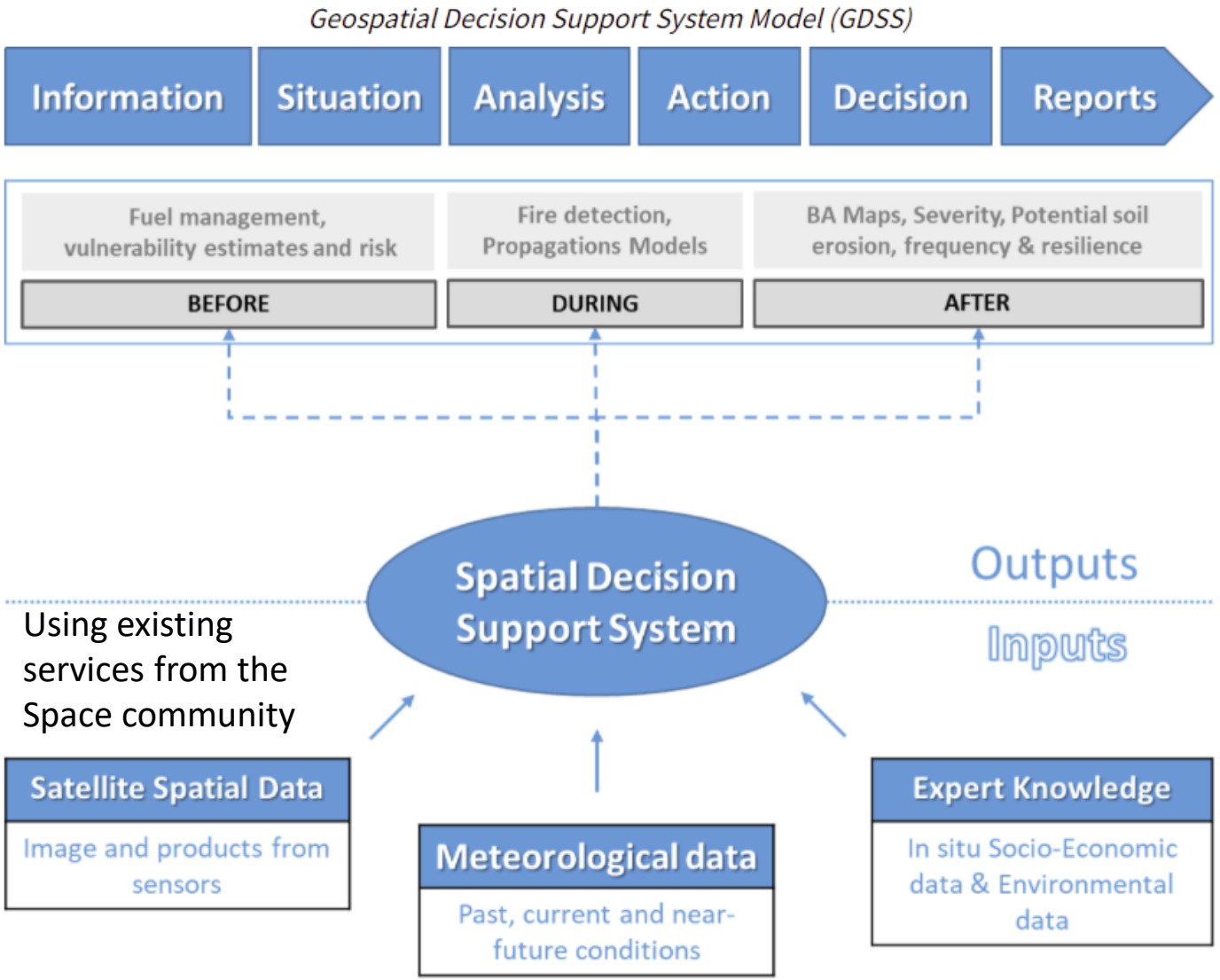
DSS of FIRE | UN-SPIDER | How does it work? | BEFORE | DURING | AFTER

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)
Information
Situation
Analysis
Action
Decision
Reports
Fuel management, vulnerability estimates and risk
Fire detection, Propagations Models
BA Maps, Severity, Potential soil erosion, frequency & resilience
BEFORE
DURING
AFTER
Spatial Decision Support System
Outputs
Inputs
Using existing services from the Space community
Satellite Spatial Data
Image and products from sensors
Meteorological data
Past, current and near-future conditions
Expert Knowledge
In situ Socio-Economic data & Environmental data

Terminal 1 (pre-existing conditions)

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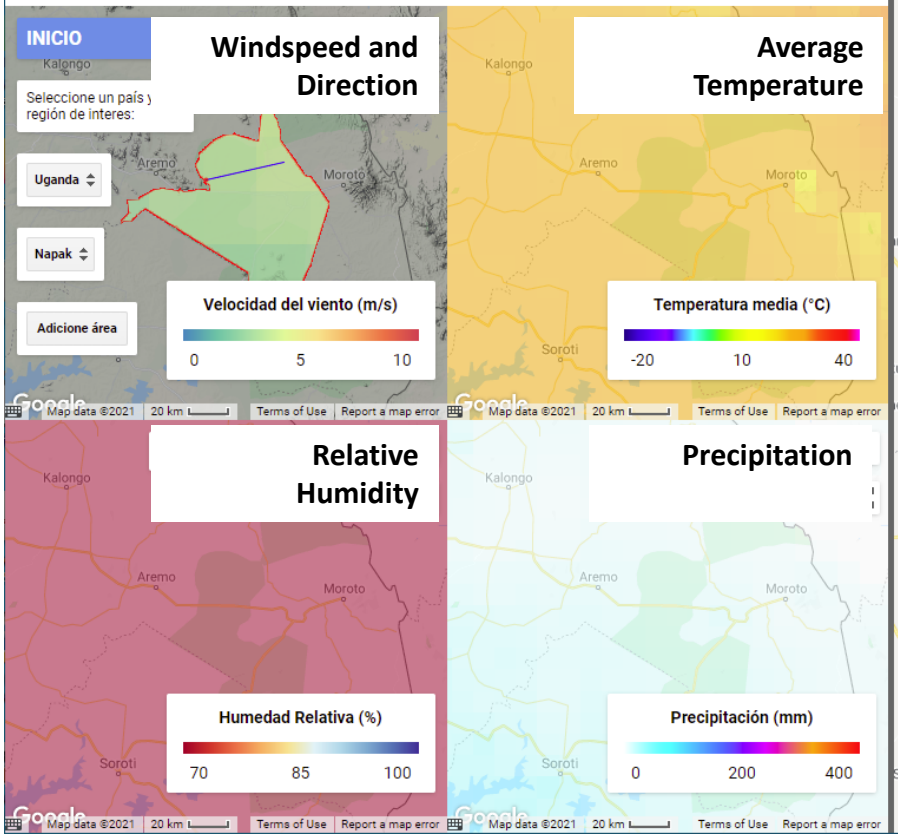
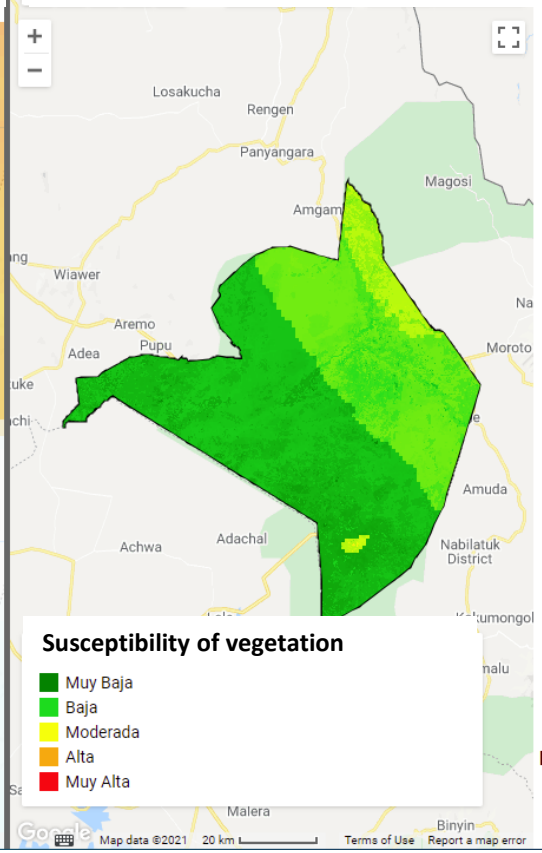
Climate and hydrometeorological conditions



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 interes de la base de división politico administrativa de GAUL-FAO-2015:

Uganda

Napak

Adicione área

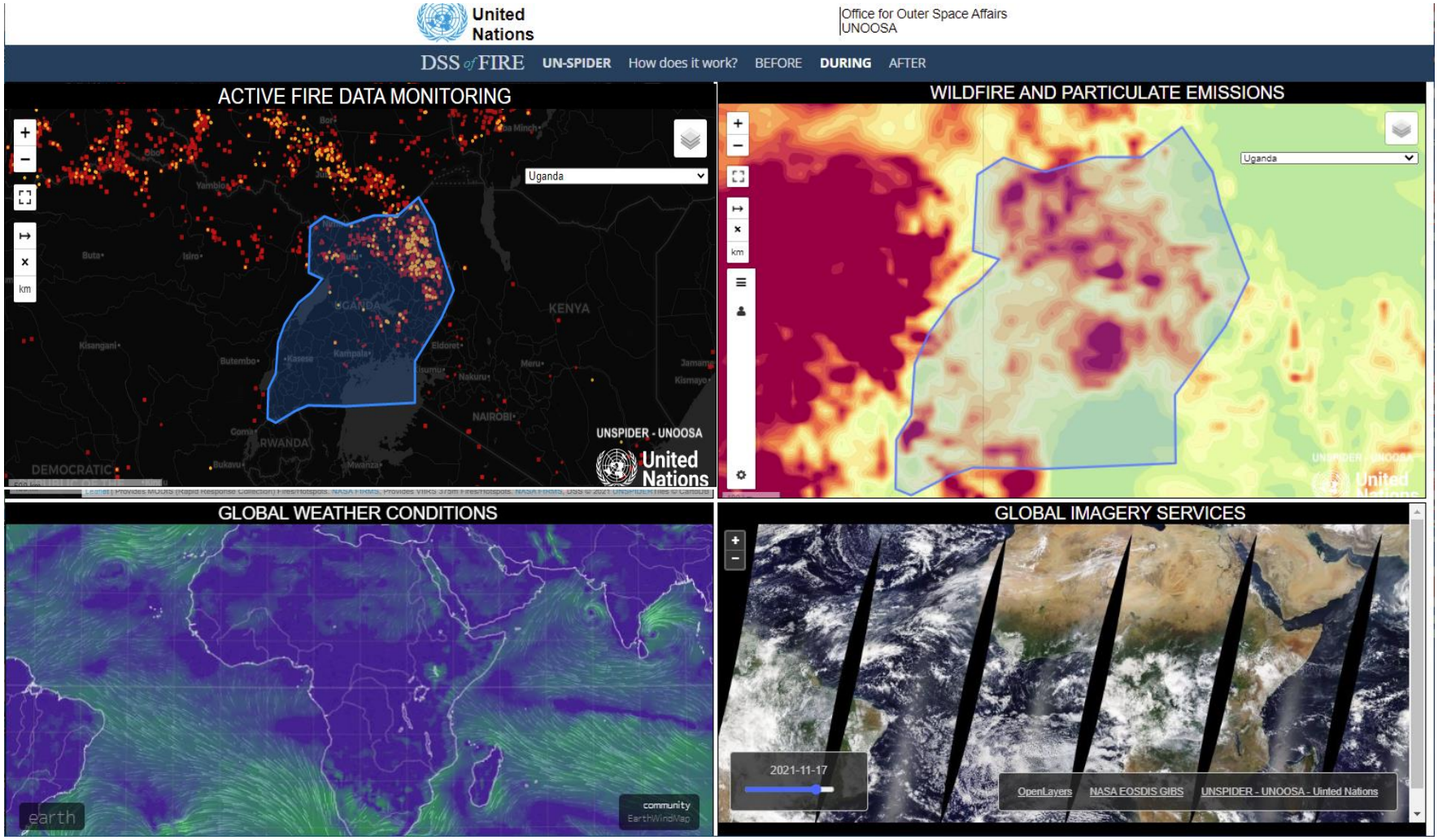
CALCULAR SUSCEPTIBILIDAD

ÍNDICE DE PELIGRO - FWI

Datos Externos

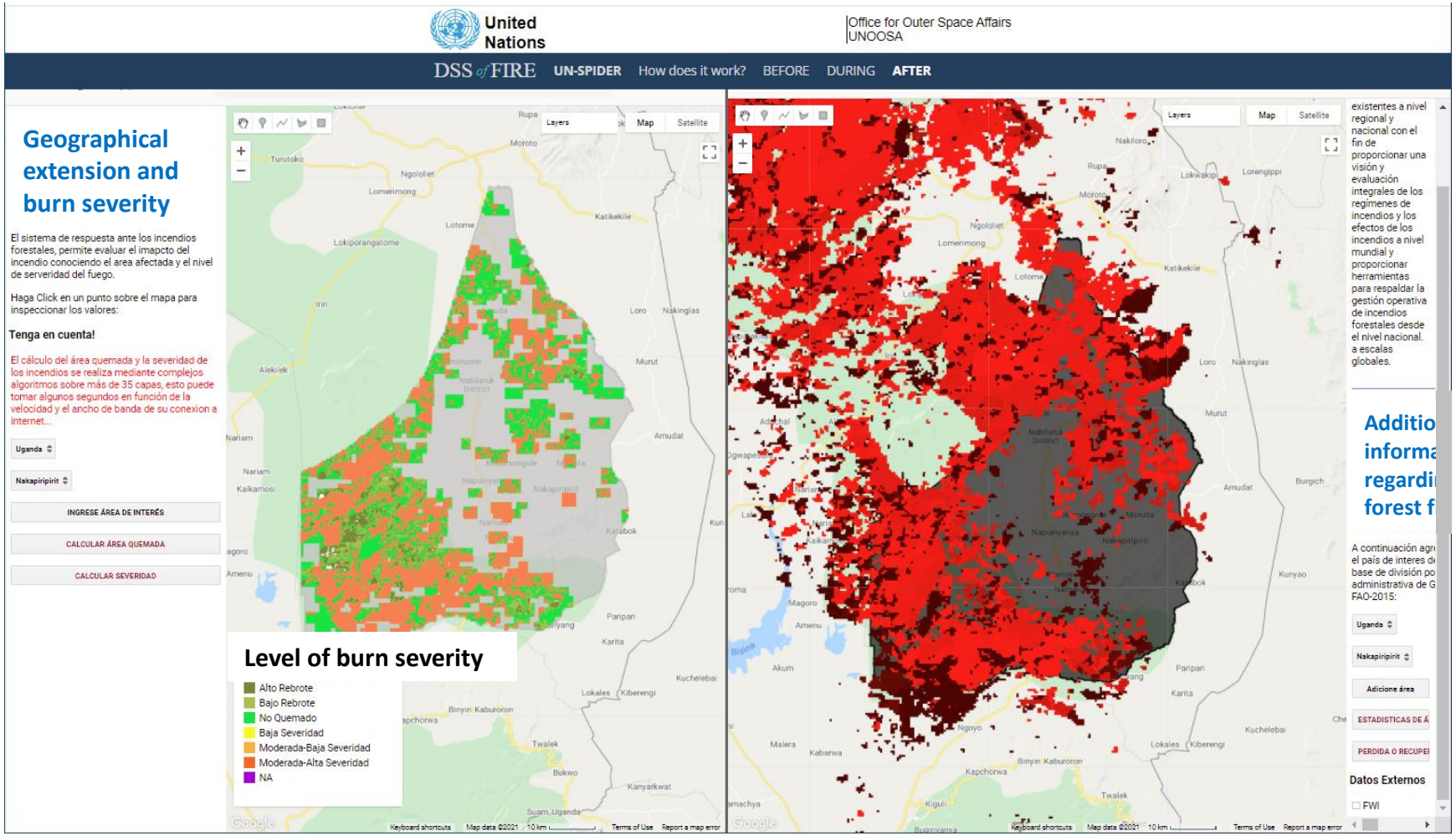
☐ FWI

Terminal 2 (current conditions)



Post-fire conditions

Windspeed and Direction



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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