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.
Using existing services from the Space community
Terminal 1 (pre-existing conditions)

Climate and hydrometeorological conditions

<table>
<thead>
<tr>
<th>Windspeed and Direction</th>
<th>Average Temperature</th>
<th>Relative Humidity</th>
<th>Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Velocidad del viento (m/s)</td>
<td>Temperatura media (°C)</td>
<td>Humedad Relativa (%)</td>
<td>Precipitación (mm)</td>
</tr>
<tr>
<td>0</td>
<td>-20</td>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>85</td>
<td>200</td>
</tr>
<tr>
<td>10</td>
<td>40</td>
<td>100</td>
<td>400</td>
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</tbody>
</table>

Susceptibility of vegetation to forest fires

Evaluation of the susceptibility of vegetation to forest fires

A continuación agregue el país de interés de la base de división política administrativa de GAUL-PAO-2015:

<table>
<thead>
<tr>
<th>Adiciones</th>
<th>Adiciones</th>
<th>CALCULAR SUSCEPTIBILIDAD</th>
<th>ÍNDICE DE PELIGRO: FWI</th>
</tr>
</thead>
<tbody>
<tr>
<td>UGANDA</td>
<td>NAPAK</td>
<td></td>
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</tr>
</tbody>
</table>

Datos Externos: FWI
Terminal 2 (current conditions)
Post-fire conditions

Windspeed and Direction

Geographical extension and burn severity

Level of burn severity

- Alta Severidad
- Baja Severidad
- No Quemado
- Base Severidad
- Moderada Baja Severidad
- Moderada Alta Severidad
- N/A
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.
THANK YOU

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