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UN INTERNATIONAL STRATEGY FOR DISASTER REDUCTION (ISDR)
INTER-AGENCY TASK FORCE FOR DISASTER REDUCTION
Working Group 4 on Wildland Fire (WG-4)

Wildland Fire, Early Warning and Sustainable Development

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Rationale

One of the driving reasons for the formation of WG-4 is the fact that sustainable development in rural societies in many countries with different natural vegetation types and land-use systems are often jeopardized by wildfires that devastate valuable vegetation resources (forests, farmlands, pastures, plantations, etc.), in both the short-term (economic losses and humanitarian problems due to destruction of crops and other values at risk) and the long-term (degradation of stability and productivity of ecosystems and land-use systems).

These fires often occur as consequence of extreme weather situations, e.g. interannual climate variability such as droughts caused by El Niño, coupled with application of fire in land-use systems that escape control. The underlying causes of damaging wildfires are deeply rooted in the problems of rural societies that are undergoing rapid demographic changes, experiencing

the loss of traditional knowledge and skills due to the trend of globalisation, and confrontation with external pressure on limited vegetation resources.
Secondary effects of destructive wildfires include the loss of vegetation that protects the soil. As a consequence the fire-affected sites are often degraded due to wind and water erosion. Increased water runoff also leads to disastrous floods and landslides, affecting drinking water availability and quality, or leading to siltation of reservoirs.

Community Involvement in Fire Management

Wildland fire risk, hazard and danger are determined by humans (ignition sources), ecosystem properties (presence of fuels that determine fire intensity and severity) and weather (desiccation of the vegetation). Fire prevention at the community level traditionally involves instruments such as awareness raising, public information and incentive elements (e.g. participation in advantages gained by successful prevention of destructive fires).

Integrated fire management measures includes fuel management, thus enabling people to proactively work in fire prevention. On the other side, weather as the natural driver of fire danger is the only element that cannot be manipulated. However, it can be predicted. Early warning systems of fire danger have been developed for many climate and vegetation types. They are mainly designed or operational at national or regional levels and are of low resolution. Some pilot products have been designed for application at the community level. Widespread application or technology transfer, however, is still in its infancy stages.

Challenges

The greatest challenges ahead are transfer of knowledge and adapted technologies to the grassroot levels of those population groups that are dependent on using the ecologically beneficial effects of fire in their land-use systems, while at the same time becoming increasingly vulnerable to the destructive effects of uncontrolled wildfires. These population groups cannot take advantage of sophisticated fire warning and information systems or the theories and practical approaches of Integrated Fire Management that are available, but outside their reach.

It is suggested that an action programme is needed which facilitates the transfer of knowledge in fire management to the most vulnerable population groups, land-use systems and ecosystems.

Due to its nature and impacts the fire problem in many countries cannot be addressed by single administrative bodies. Local to national Round Tables in Fire Management must be used as an instrument to build consensus on national to local approaches in Integrated Fire Management.

An action programme would include the development and / or transfer of:

- Integrated Fire Management (Community-Based Fire Management) Systems
- Locally applicable fire management information systems including early warning components
- Fire management training for local application.

Priority Area

The global scale early-warning system for fire occurrence and fire risk already exist and can be accessed and used at that scale by organizations that have the training and technology.
The priority is to develop and establish operational early warning systems for sub-regional and local areas that require site specific data and local interpretation. Organizations or groups must be available to adapt these systems and technologies to the local situation.

The geographical priority areas are those that have a defined fire problem.

Delivery Systems

Local bodies (e.g., "Fire Management Committees") must be entrusted to take responsibility for fire management, including early warning. They can range from a strong federal or national system down to a local, community-based group. The full range of systems exist and work well in various parts of the world. The particular organization needed is dependent on the local/regional social and political system.

They are responsible, with the assistance of regional/international experts, to:

- develop the mechanisms
- organise collection and processing of data
- produce the indices, and
- communicate the risk to the local population who would then commit to a series of actions to mitigate the risk.

The delivery system for developing the local expertise is a key action that needs to be undertaken. It includes:

- application of a "system" for predicting fire danger and risk
- organization to implement the process, and
- provision of the needed equipment and protocols.

Mechanisms for developing such community-based fire management approaches exist but they are not widely applied. What is needed are the resources to organize the transfer of the technical knowledge and provide training and support.

Implementing Partners

The establishment of fire management networks can be a very effective tool for providing support to local communities. As with the "Fire Management Committees", the networks can be at various levels; regional, national, or local groups. The network's purpose will also vary from assisting with the highly technical use of remote sensing data and products, to the application of local fire risk methods for communities.

UN and other international organizations and programmes, such as the FAO, WMO, WHO, NGOs, as well as national government and non-government institutions including academic ones, could be actively participating in the networks.