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## 1. Rationale

Fire forms a crucial process in the healthy functioning of our ecosystems, yet fires threaten natural systems, infrastructure and most importantly life. Spatio-temporal awareness of fire likelihood, occurrence and behaviour forms a key to appropriate prevention, response and management.

The Eastern and Southern African Fire Information System (ESAFIS) supports the services in charge of the protection of human life and property, forests and wildlife against fires in the RCMRD member states by providing an up-to-date and reliable information, and near real time alert on occurrences of wild fires in the Region.

## 3. Approach/Project Activities

- ▶ All Data Captured From IPOPP output files is stored in PostgreSQL with PostGIS extension
- ▶ The database runs queries on newly added fire point to identify nearby conservation areas and town under 50 Km /31 Miles.
- ▶ ESAFIS then sends notification to subscribed users if their area they have subscribed fore is affected by fire or near fire.

## 5. Results

- ▶ Developed an automated system that handles data entry, visualization and notification

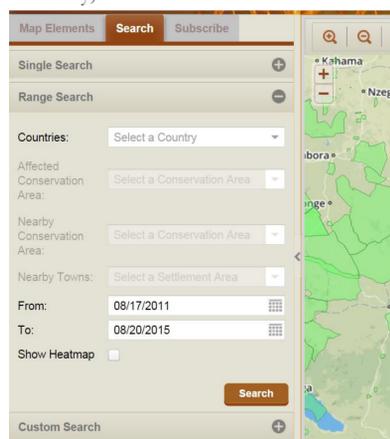


Figure 3: The search tab, through which historical data can be searched and visualized

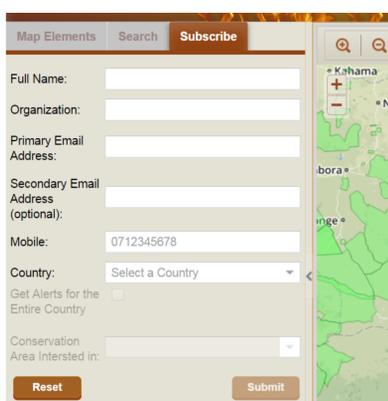


Figure 4: The subscribe form through which users can subscribe to receive alerts



Figure 1: Bush Fire in Mount Kenya (Source: Mount Kenya Trust)

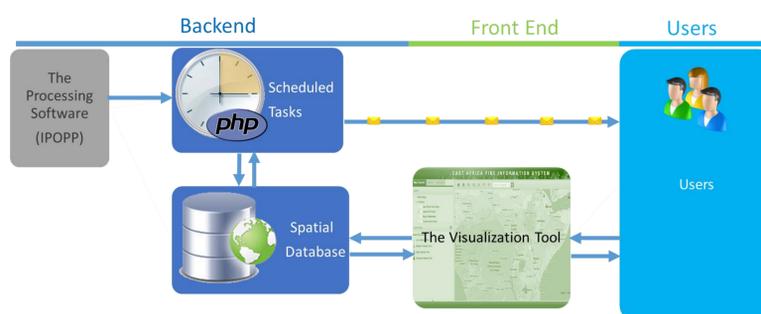


Figure 2: ESAFIS Process

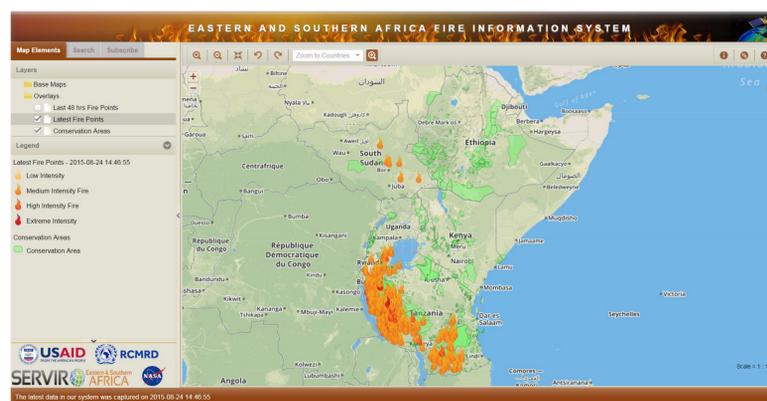


Figure 5: ESAFIS – Eastern and Southern Africa Fire Information System Front-End <http://apps.rcmr.org/esafis/>

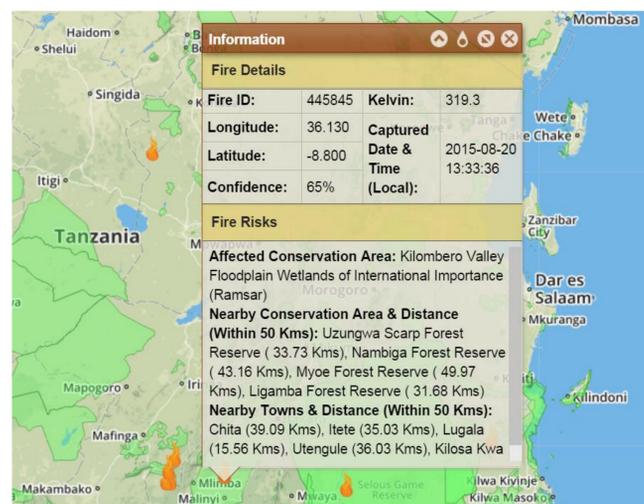


Figure 6: A popup showing fire information and the risks

## 2. Objectives

- ▶ To provide fire early warning system to fight forest fire through SMS and email
- ▶ To provide a user friendly user interface that enable users visualize fire point, query historical data and subscribe for notifications

## 4. Earth Observations and Other Inputs

- ▶ The system uses MODIS Active Fire product from Aqua and Terra sensors obtained from RCMRD MODIS receiving station.
- ▶ NPP VIIRS at 375m resolution
- ▶ Conservation areas shapefile
- ▶ Towns of the region shapefile



Figure 7: RCMRD MODIS Receiving station, Nairobi, Kenya

## 6. Outcomes/Anticipated Impacts

- ▶ The system will improve fire early warning and response on forest fires
- ▶ The system will enhance fire disasters preparedness through fire prediction and trends analysis

## 7. Project Partners

Currently, the project partners are:

- ▶ Kenya Wildlife Services
- ▶ Kenya Forest Services

## 8. Project End Users

- ▶ Governments Department of Disasters Affairs
- ▶ National and District Forest Agencies
- ▶ Fire Fighters
- ▶ National defense forces concerned with forest fire
- ▶ Environmentalists
- ▶ Foresters
- ▶ Wildlife Agencies
- ▶ National Park Administration