



**WILDFIRE** 2011  
The 5th International Wildland Fire Conference

South Africa

May 9-13

# WEST AFRICAN REGIONAL NETWORK

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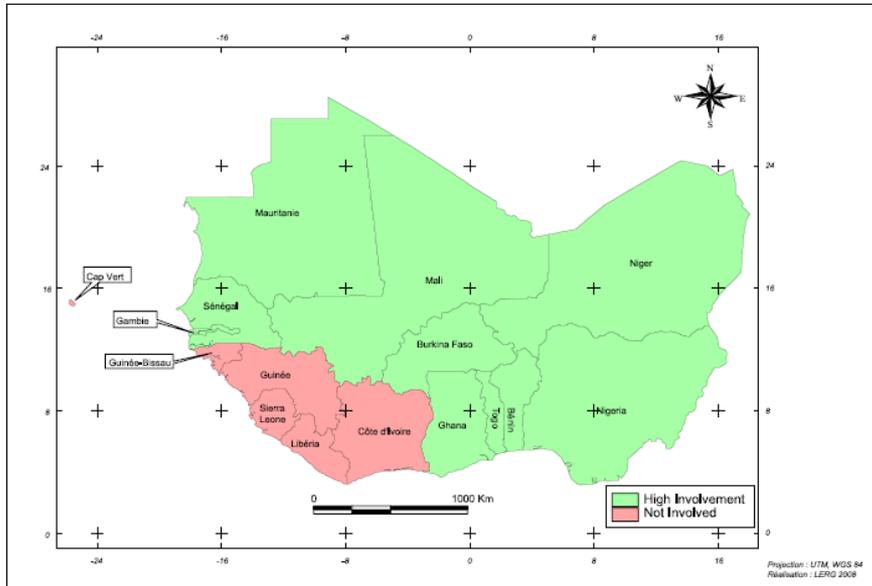
**GOFC-GOLD** The logo for GOFC-GOLD, consisting of the text "GOFC-GOLD" in bold orange letters followed by three orange cross symbols.

# I- WARN : Network structure, objectives and thematics

## I- 1- Network structure,

- *Designation of the Network Structure and Functioning*
- The structure of the Network will be implemented through Working Group or Task Forces
- WARN Secretariat is hosted at the Dakar University Remote Sensing Laboratory (LERG), Senegal.
- Network Coordinator is Dr Cheikh Mbow
- An Interim Steering Committee (ISC) of National Volunteers was mandated to consolidate the vision and activities of the WARN for a period of 6 months
- The WARN coordinator in collaboration with thematic leaders and GOFC-GOLD will implement the recommendation of the ISC
- GOFC-GOLD will support the Secretariat with seed money to enable it operate for an initial period of two years

## I-2- Countries included, objectives and thematics of WARN



**Countries included** : Benin, Burkina Faso, Gambia, Ghana, Mali, Mauritania, Niger, Nigeria, Senegal, and Togo  
Potential: Sierra Leone, Liberia, Cote d'Ivoire, and Cap Verde

The following key cross-cutting thematic issues have been identified and prioritized by the West Africa Regional Network:

**Water**

**Wildland Fires**

**Carbon/Forest/Climate change**

**Urban / Coastal Zone**

The primary objectives of the West African Regional Network are to:

- foster research in environmental change that build on existing bilateral collaboration links;

- help to develop research capacity among the partners involved through joint research activities on key aspects of environmental change; and train young scientists from African partner institutions in approaches and techniques for studying environmental change, such as the use of Earth Observation techniques and GIS.

## II- Synthesis of Main Research and activities using RS/GIS (2005-2011)

The first WARN discussion meeting was held in 2005 (Dakar) to develop an [Action Plan for West African Remote Sensing/GIS Network](#).

### II-1- Dakar meeting (August 2005)

#### Objectives of the network :

- To develop a cadre of human and technical assets to make use of emerging Group of Earth Observations resources to the benefit of West Africa
- To address common regional challenges for sustainable development.
- To support linkages and positive synergy within the region and with other relevant international networks and programs.

WARN was officially initiated in **2007**, at the [2nd West Africa Regional Network Meeting on Earth Observation and Environmental Change](#) held at the University of **Ghana (Accra)**.

## **II-2- Accra meeting (November 2007)**

### **Objectives of Accra Meeting (Nov.2007)**

- **To broaden and consolidate the organization and work of the West Africa Regional Network and establish linkages with other networks in Africa**
- **To strengthen the integration of space-based and in situ earth observations of land cover dynamics in West Africa, including operational early warning systems for fire**
- **To contribute to the works of the Group on Earth Observations (GEO) and related societal benefit areas in West Africa**

## II-3- Others

Project opportunities of the network	Actions implemented	Participation to Scientific meetings
<ul style="list-style-type: none"> <li>- Existing opportunities: ACCA, START, NFS, DANIDA, EU, etc.</li> <li>-Funding acquired: START-PACOM (SN, GH, BF, ML). ‘CARBON’ PI (Dr Cheikh Mbow). 1 year</li> <li>-Funding acquired: WANSEC-DANIDA (WATER, URBAN, Land Use, FIRE). 3 years</li> </ul>	<ul style="list-style-type: none"> <li>- A functional web page (<a href="http://www.fao.org/gtos/gofc-gold/net-WARN.html">http://www.fao.org/gtos/gofc-gold/net-WARN.html</a> )</li> <li>-Constitution of thematic groups, that you find on the web page</li> <li>- A couple of small funding on carbon and environmental changes (START, DANIDA)</li> <li>- Approval from START for another funding for Landsat Data Dissemination</li> </ul>	<ul style="list-style-type: none"> <li>- Edmonton Fire meeting: July 2008</li> <li>- Jena Meeting</li> <li>- Copenhagen Climate Meeting (March)</li> <li>- Workshop on Radar applications (May 2009)</li> <li>- IAV meeting at Sao Polo (November 2009)</li> <li>- AMMA Meeting, Ouagadougou (<b>July 2009</b>)</li> <li>- Invitation to SADC Fire meeting</li> <li>- With JRC in <b>2009</b> (land cover validation)</li> <li>- With FAO in <b>2011</b> (land use validation)</li> </ul>



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## BUSH FIRE MONITORING IN BURKINA FASO

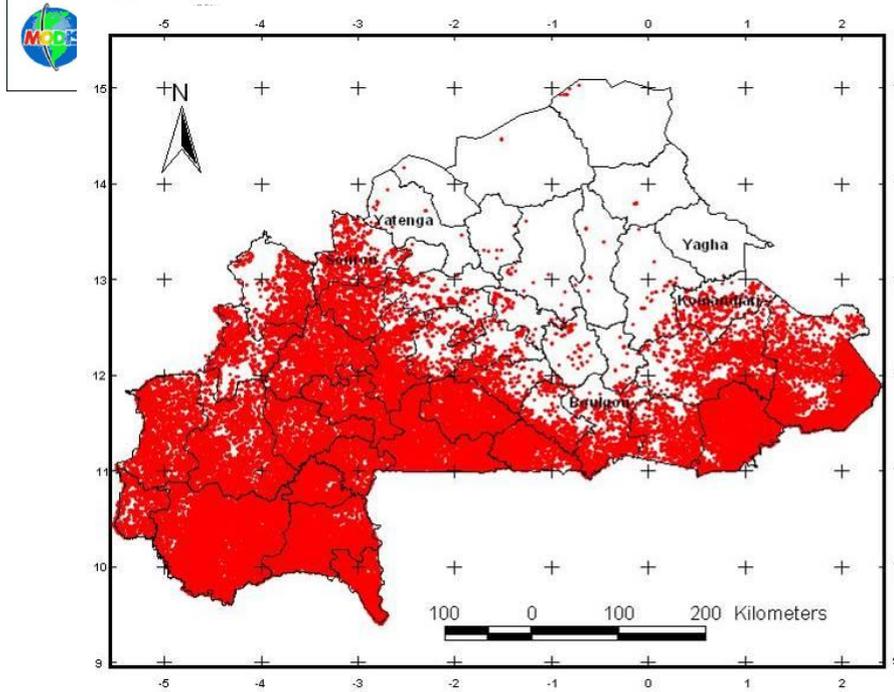
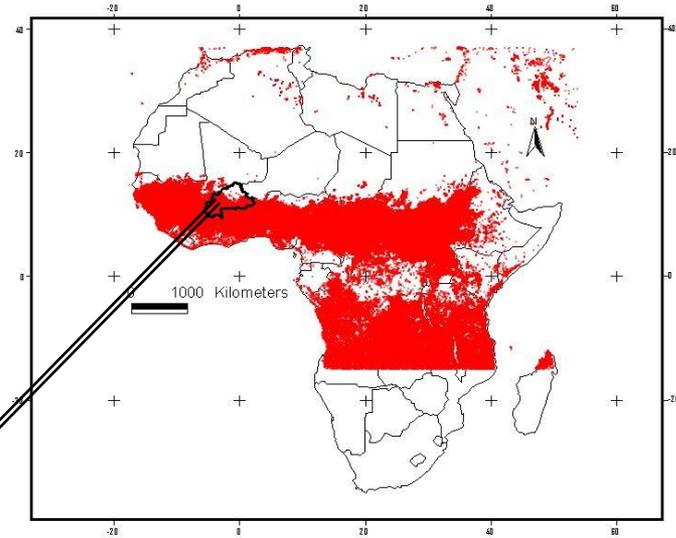
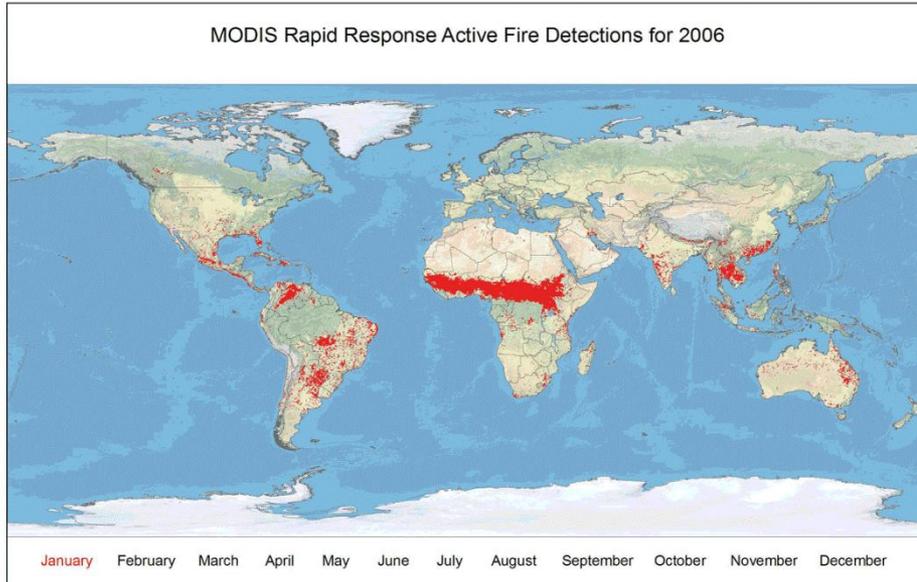
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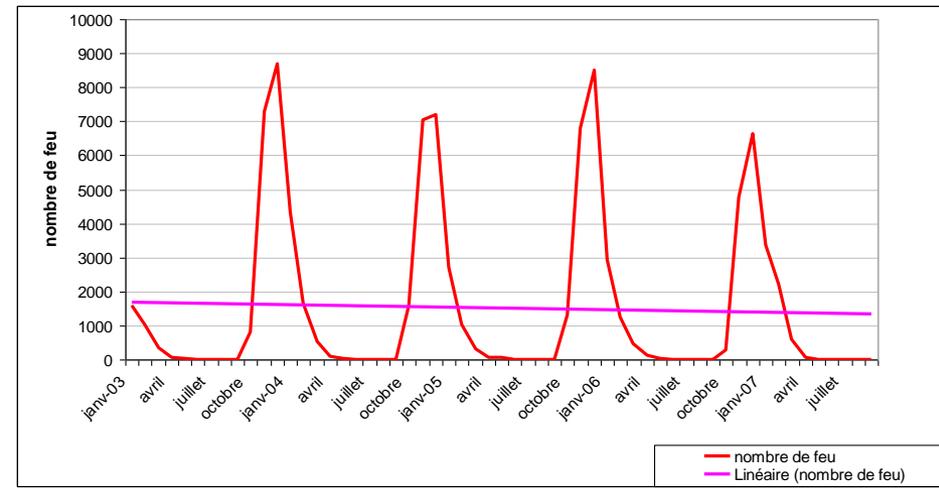


**GOFC-GOLD** 

# I- What is the spatio-temporal distribution of fires in Burkina Faso ?



In Africa, fire is general phenomenon  
In Burkina Faso, we remark that fire has an regular recursive cycle in annual periods



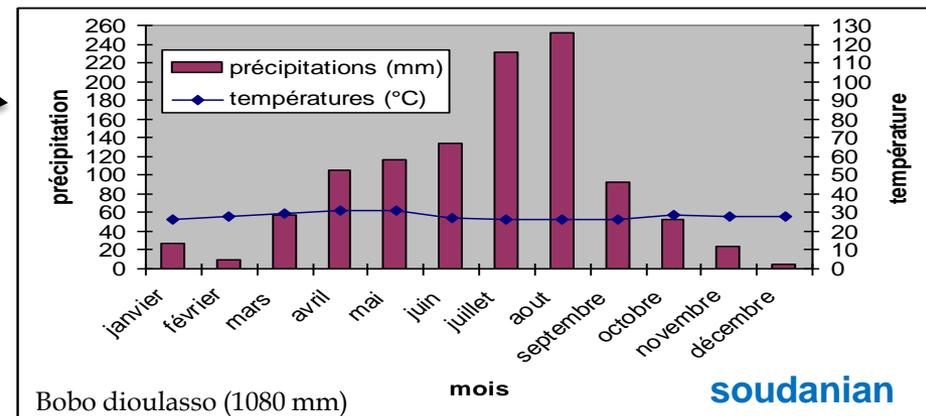
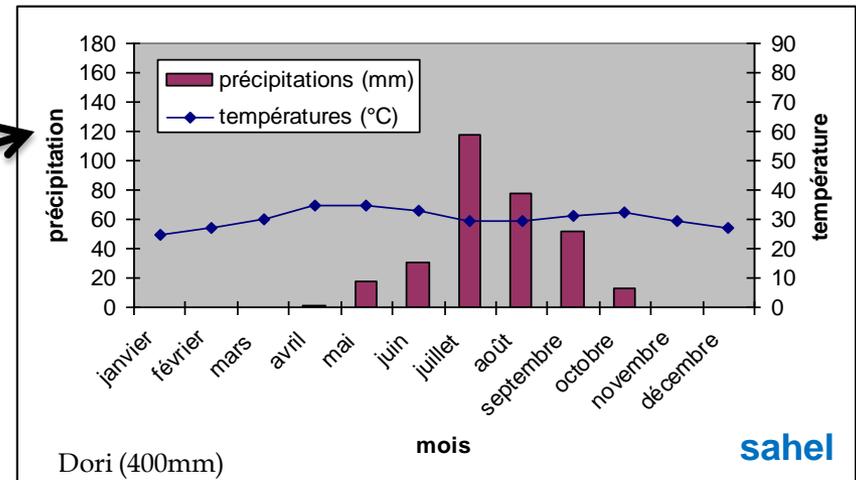
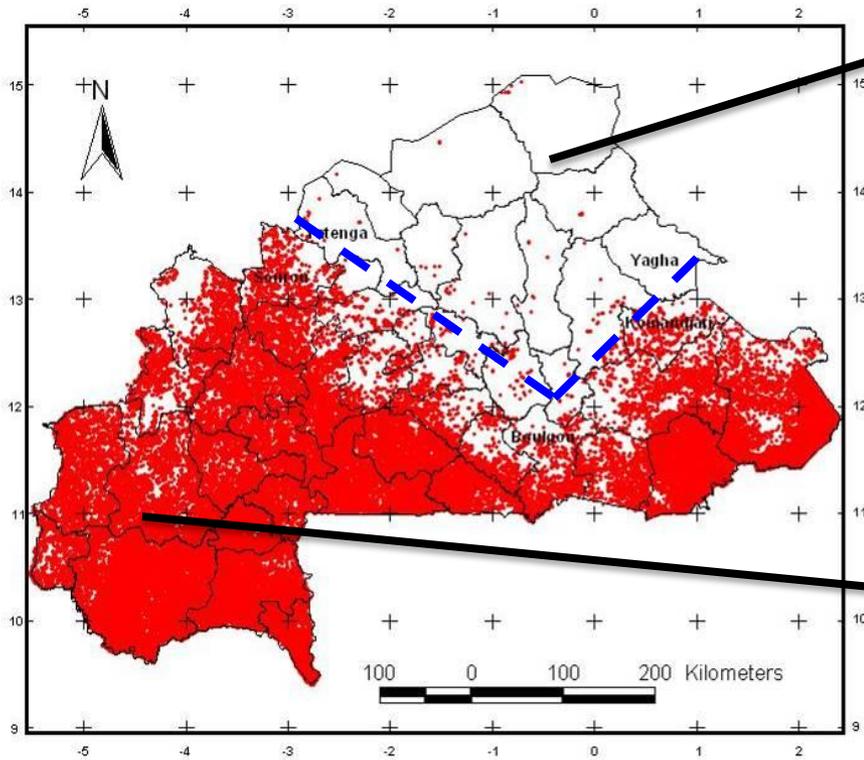
# II- what can explain this distribution?

natural factors

## 1- Climatic situation of Burkina Faso

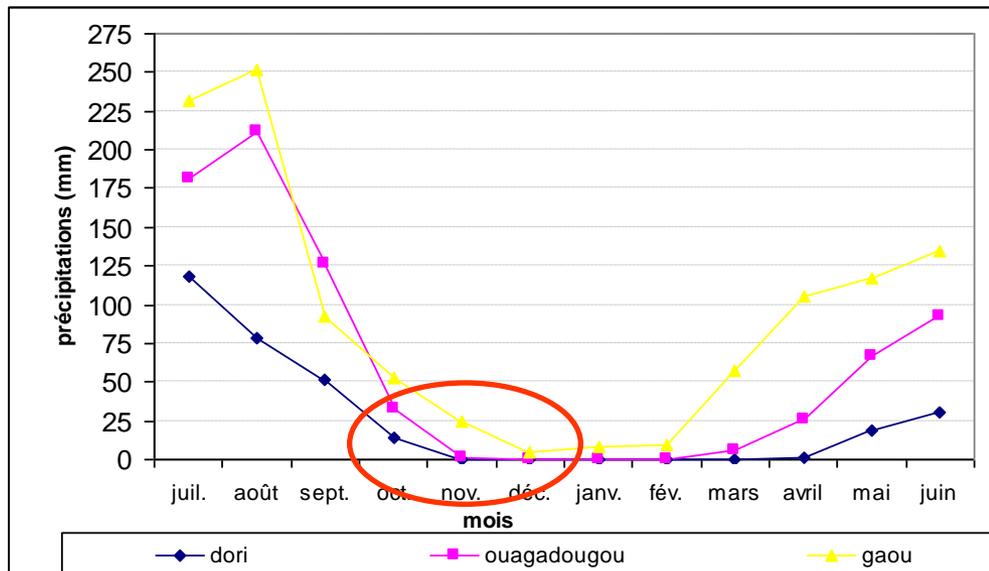
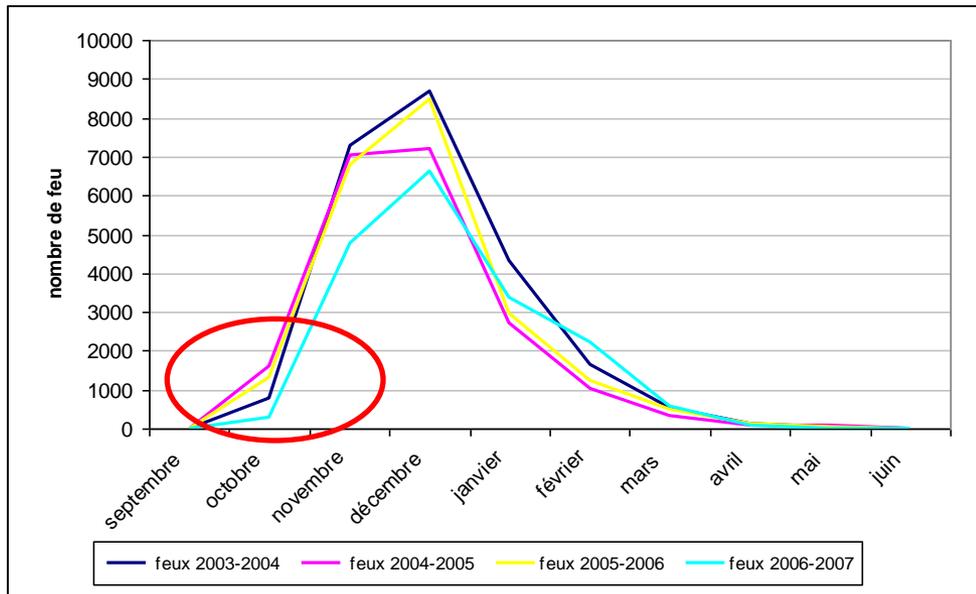
a- Seasonality of rainfall : Short rainy season (2-6 months) and long dry season

b- Interannual rainfall variability : drought = high fire risk - good rainy season = more biomass, intensive fires)



Climatic factors are main drivers:

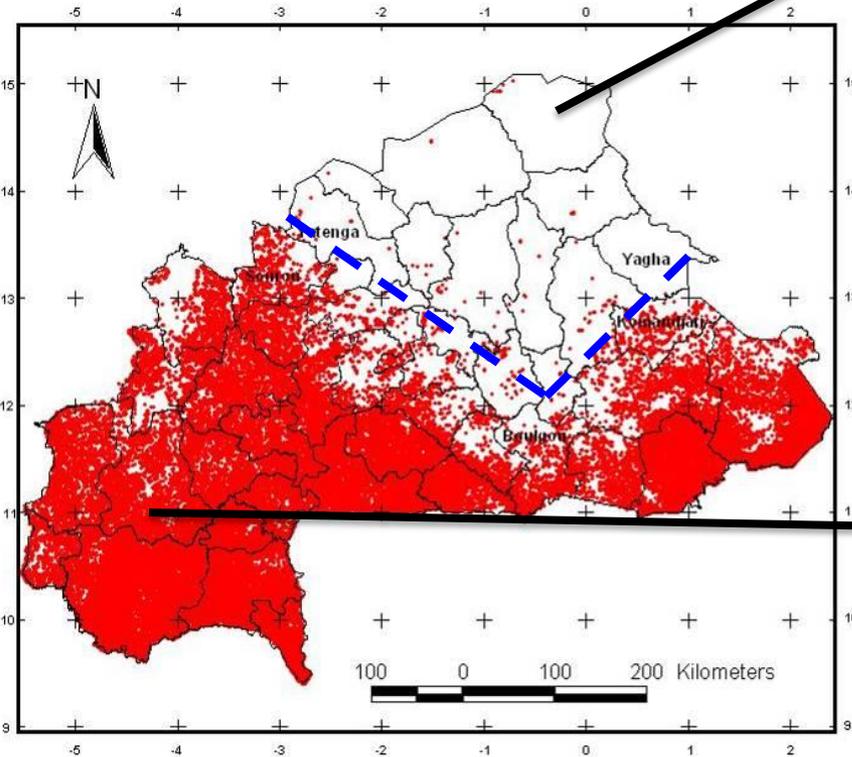
When dry season starts, fire begins



## 2- Savanna ecosystems characteristics

(herbaceous layer that dries rapidly after the rainy season)

- a. High range of ecosystems (400-1200 mm: sahel, soudan, ), various savanna type and rangelands, variability of the fire regimes



### 3- agricultur, pastoral and ritual fire

**Human behavior** (local livelihood, natural resource perceptions, agriculture and pastoral systems, forest resource collection)

- a. Main activities based on natural resources extraction (more than 60% of the population live in rural areas)
- b. Fire is the main tool (agriculture and pastoral)
- c. In some faiths , there is a cultural practice related to the “rite of fire”, the main religious authorities together with the population participate in a ceremony which marks the start of the fire season.
  - Make annual fire with a exact ritual : sacrifice, public demonstration ...
  - The rite takes place on an specific date : every year, at the same date
  - It is forbidden to make fire before ritual fire...
  - It is mean a symbolyc purification of the village ...

# III- Why and how the changes in fire practices shown?

## 1- Agriculture fires

- Early use of fire or not use of it at all (grazing)
- action des projets de gestion de feu (sensibilisation à la mise à feu juste après la saison des pluies, utilisation des fourrages non brûlés etc.)
- No land to burn, all was taken for other land uses (agricultural and grazing), in some cases using the same land for both practices.

Intensively agriculture and very high population density



## 2- The fire rite and culture

- Reduction in the areas dedicated to the ritual fire
- Disappearing of the fire rite
- Fire places are not any more sacred and are used as a cropland or other uses

- **The main reasons**

- - No available cropland due to population density increasing
- - New population arriving with new agricultural and graze practices
- - Influence of some religions (Christianism and Islamic) with different beliefs breaking traditional systems



<http://video.google.fr/videoplay?docid=5600249379993103084>





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