WEST AFRICAN REGIONAL NETWORK

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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
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.

**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**
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

<table>
<thead>
<tr>
<th>Project opportunities of the network</th>
<th>Actions implemented</th>
<th>Participation to Scientific meetings</th>
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<tbody>
<tr>
<td>- Funding acquired: START-PACOM (SN, GH, BF, ML). ‘CARBON’ PI (Dr Cheikh Mbow). 1 year</td>
<td>- Constitution of thematic groups, that you find on the web page</td>
<td>- Jena Meeting</td>
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<td>- Funding acquired: WANSEC-DANIDA (WATER, URBAN, Land Use, FIRE). 3 years</td>
<td>- A couple of small funding on carbon and environmental changes (START, DANIDA)</td>
<td>- Copenhagen Climate Meeting (March)</td>
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<td>- Approval from START for another funding for Landsat Data Dissemination</td>
<td>- Workshop on Radar applications (May 2009)</td>
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<td>- IAV meeting at Sao Polo (November 2009)</td>
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<td>- AMMA Meeting, Ouagadougou (July 2009)</td>
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<td>- Invitation to SADC Fire meeting</td>
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<td>- With JRC in 2009 (land cover validation)</td>
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<td>- With FAO in 2011 (land use validation)</td>
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BUSH FIRE MONITORING IN BURKINA FASO

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

I- What is the spatio-temporal distribution of fires in Burkina Faso?
II- what can explain this distribution?

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- agriculture, 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 an exact ritual: sacrifice, public demonstration …
   - The rite takes place on a specific date: every year, at the same date
   - It is forbidden to make fire before ritual fire…
   - It is meant a symbolic 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 brûlées 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