West African Science Service Center on Climate Change and Adapted Land Use (WASCAL)

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Hydrologue au Centre de Competence - WASCAL

WASCAL (Centre Ouest-Africain de Service Scientifique sur le Changement Climatique et l’Utilisation Adaptée des Terres)
WASCAL

Aims to strengthen the research, educational and policy capacity and competency of West-African countries

to deal with issues of climate change through adapted land use on a scientific basis

in partnership with German institutions and others
Partner countries

WASCAL partner countries
- Benin
- Burkina Faso
- Côte d'Ivoire
- Gambia
- Ghana
- Mali
- Niger
- Nigeria
- Sénégal
- Togo
Operational structure of WASCAL

Graduate Research Programs
- National Universities/ German Partners

Coordination
- GRP Coordination Unit

WASCAL - HQ

Ouagadougou, Burkina Faso

Accra, Ghana

Planning & policy network
- Governments, authorities, politicians, policy makers, development agencies, etc.

Observation network
- Meteo, hydro, land, biodiversity, socio-economic, household

Core Research Program
- Climate change – adapted land-use

West-African research consortium
- Research institutes, universities, graduate research programs

German research consortium
- ZEF / Geography-Agriculture-Bonn University / Biocenter-Geography-Würzburg University / Augsburg University / Others (LAMA, etc.)
Graduate Research Program

PhD studies

1. African climate system in Nigeria
2. Climate change and water resources in Benin
3. Climate change and land in Ghana
4. Climate change and economics in Senegal
5. Climate change and agriculture in Mali
6. Climate change and biodiversity in Cote d’Ivoire

Master studies

1. Climate change and human security in Togo
2. Climate change and energy in Niger
3. Climate change and education in Gambia
4. Climate change and adapted land use in Nigeria
Integrated research programs

Agronomy

Climate

Socio-economic

Biodiversity

LULCC

Hydrology

Harmonization

Dataware house

Multi-criteria analysis

Simulation

Query

Analysis and reporting

An integrated database for multi-use
Hydro-Climatological Observatory

Weir for runoff measurement

Total & photo-synthetically active radiation

Scintillometer: heat flux

Eddy covariance

Water sampling
Spatial distribution of fifteen selected observatories within WASCAL window for the establishment of Observation Networks
The initial target region is the Sudanian savanna belt which is considered as the potential breadbasket of West Africa.
The experimental watershed of Dano

Area: 583 km$^2$
Population density: 59 inhbs/km$^2$
Equipment on Dano watershed

8 automatic climate stations

10 discharge gauges at different scales
Equipment on Dano watershed

- 14 piezometers for water table
- 3 water level stations in the reservoirs
Monitoring of the reservoirs silting

Plan topographique
WASCAL will thus contribute to:

• generate integrated knowledge and
• develop the analytical capability in the region on climate change and land resources to
• design resilient land use systems and
• develop measures to conserve or restore healthy ecosystems that allow
  • sustainable development across the region, and
  • preserves the natural resource base for future generations.
Merci de votre attention