

A M M A

African Monsoon Multidisciplinary Analyses
Afrikanske Monsun: Multidisiplinære Analyser
Afrikaanse Moesson Multidisciplinaire Analyse
Analisi Multidisciplinare per il Monzone Africano
Afrikanischer Monsun: Multidisziplinäre Analysen
Analisis Multidisciplinar de los Monzones Africanos
Analyses Multidisciplinaires de la Mousson Africaine

JL Redelsperger (on behalf of ISSC-EC)

- ❑ **General information from ISSC**
- ❑ **Goals & Agenda of meeting**

- ❑ **ICIG (Th. Lebel & D. Parker)**



IGB

Endorses the Science & Implementation Plans

Produces the Science & Implementation Plans

ICIG

Integrative Science

ISSC

Obs implementation

PO

WG1

WAM & global climate

WG2

Water cycle

WG3

Land surface-atmosphere feedbacks

WG4

Prediction of climate impacts

WG5

High impact weather prediction

ST4
Capacity building & training

TT1
Radio soundings

TT2a
Surface Layer

TT2b
Aerosol & Radiation

TT3
Gourma site

TT4
Niamey site

TT5
Quémé site

TT6
Oceaic campaigns

TT7
SOP-Dry season

TT8
SOP-Monsoon se

TT9
SOP-Downstream

ST1 LOP

ST3 Database

ST2 incl AOC

Links with International Programmes (WCRP, IGBP, THORPEX, ..)

AMMA National & Pan Scientific Committees



WG1: West African Monsoon and Global Climate

Co-leaders:

Arona Diehdiou (IRD, Niger)

Serge Janicot (LOCEAN, France)

Peter Lamb (Univ. Oklahoma, US)

2-way interactions between West African Monsoon & the rest of the globe
to determine the variability of the WAM and its global impacts

=> to understand and to predict the multi-scale variability of the aspects of global
climate linked to the WAM

ISSC recommendations

- To develop and promote clear linkages w/t operational seasonal-to-interannual prediction activities; e.g. including assessment of forecasts (statistical & dynamical; assessment of key processes in models etc).
- Core-membership should include representation from aerosol, chemistry and modelling
- WG should interact strongly with the IPCC process



WG2: Water Cycle

Co-leaders:

Amadou Gaye(LPASF, Univ. Dakar, Senegal)

Paul Houser (George Mason, US)

Jean-Luc Redelsperger (CNRM, France)

Analysis & Understanding of the water budget at *regional-scale, mesoscale* and *local scale*

Up/down scaling issues

ISSC recommendation:

Greater consideration should be given to shallow clouds in addition to MCSs; including cumulus congestus and upper-level outflows

→ TT8 & “Group on Convection & Atmosp processes”.



WG3: Land-surface-atmosphere feedbacks

Co-leaders:

Jan Polcher (LMD, France)

Chris Taylor (CEH, UK)

To provide increased knowledge & understanding of the feedbacks between the continental surface & the atmosphere

→ to bring together the various process studies (land and atmosphere) in order to better understand the coupling at *regional* and *mesoscale*.

ISSC recommendation:

Soon after the SOP, WG3 should agree a set of common case studies in common with WG2.



WG4: Prediction of climate impacts

Co-leaders:

Abou Amani (AGHRYMET, Niger)

Andy Morse (Univ. Liverpool, UK)

Madeleine Thompson (IRI, US)

“To provide the underpinning science that relates climate variability to issues of health, water resources, food security & demography for West African nations and defining relevant monitoring and prediction strategies.” One of 3 aims in ISP

- WG4 should interact with all other WGs stressing the needs of the users & decision-makers & how each WG can contribute to this.
- A majority of proposals in the PIAF deal with climate impacts → Important for WG4 that funding be sought to support these projects.
- WG4 is working to establish the 2-day workshop in Dakar (“closing the gap”).





WG5: High impact weather prediction and predictability



CORE Membership:

Ernest Afiesimama (Nigerian Met. Service)

Sarah Jones (Univ. Karlsruhe, Ger.)

Dave Parsons (NCAR, US)

Florence Rabier (Meteo-France)

Chris Thorncroft (SUNY at Albany, US)

Zoltan Toth (NCEP, US)

To improve our knowledge & understanding of high impact weather in following regions. Key timescale of interest is 1-15 days.

- (i) West African Continent: onset and duration of wet/dry spells including monsoon onset; risk of heavy rainfall/floods, aerosol?
- (ii) Downstream Atlantic: tropical cyclogenesis and intensity change; role of large-scale (e.g. shear, SAL, dry air, large-scale convergence)
- (iii) Extratropics: extratropical transition, Rossby wave trains





WG5: High impact weather prediction and predictability



Operational Activities

- (i) Impact of additional observations and especially radio-soundings over West Africa in analysis/forecasting systems for (a) West Africa, (b) Atlantic & USA and (c) Europe
- (ii) Targeted observations in tropical regions (SOP2 & SOP3)
- (iii) Tailoring forecast products for users in tropical regions (1-14day)

ISSC recommendation:

Greater emphasis be given to the role of soil moisture on prediction and predictability at 1-15 day timescales, especially given the growing interest at NWP centers in soil moisture initialization.



Main other discussions going on

❑ To fund new large field key instruments as recommended by ICIG & ISSC

❑ Top priority: Rain Radar in Niamey

❑ Other Priorities:

Geophysica (committed; Hangar, more flight hours)

Soil moisture Airborne measurements (SMOS/HYDROS)

Heat Low measurements

Soundings North Quadrilater

❑ Database & data policy

❑ ST4 establishment and funding



Status for Niamey Rain Radar

- NSF proposal to support the S-Pol radar not successful (problems in financial and human resources)
- A strategy to deploy a C-band radar in Niamey is being developed with NASA, with some logistical support from DOE(ARM).

(NASA interest for the water cycle). Link with SMOS/HYDROS is important

We are optimistic that NASA will support deployment of the MIT C-band radar & expect to know for certain in the coming weeks.

The ISSC recommends that the deployment should be for 10-weeks, covering the July-to-Mid-September period.



Main AMMA Meetings

- ❑ **September 2005, Biarritz** Meeting on Process Scale Studies & review on Implementation
- ❑ **28 Nov- 2 Dec, Dakar** 1st International Scientific Conference
- ❑ **3-4 Dec, Dakar** Workshop of WG4 (Climate Impacts)
- ❑ **6-9 Dec, Thies** Training/workshop agronomy impact

- **Jan-Feb 2006: Field operations SOP 0**
- ❑ **3-7 April 2006, UK** SOP Meeting : debrief SOP0 science
debrief logistics issues for SOP-1-2-3
- ❑ **Spring 2006, Niamey** Forecasting workshop for African forecasters
(Funding not secured) 15 people and 1.5 week ???

- **April-Sept 2006: Field operations SOP-1-2-3 (aircrafts June-Sept)**
- ❑ **6-10 November 2006, Paris** Debrief SOP123 / coordination of analysis work

