WMO, CNR-IBIMET and AGRHYMET Regional Center

TRAINING PROGRAMME
Climate Change Adaptation and Disaster Risk Reduction in Agriculture

International Training Course on

Climate Change impacts: assessment and communication

Course Information Form

28 May – 22 June 2018 (Distance Learning)

25 June – 6 July 2018 (Classroom Learning)
Area di Ricerca CNR,
via Madonna del Piano, 10
50019 - Sesto Fiorentino (Florence) - ITALY

Background

The course is the third event of the Training Program on Climate Change Adaptation and Disaster Risk Reduction in Agriculture (PACC/RRC), financed by the Italian Agency for Development Cooperation (AICS) and realized by WMO in collaboration the Regional Training Center in Italy IBIMET-CNR and the AGRHYMET Regional Centre. The Training Program consists of four high education courses, two organized by the Regional Centre AGRHYMET in Niamey (Niger) and two by IBIMET-CNR in Florence (Italy), and a final conference in Rome

The four training courses are:

- Climate services for disaster prevention (IBIMET-CNR, November 2017),
- Agrometeorological Services for agriculture and water use (AGRHYMET, February 2018),
- Climate Change impacts: assessment and communication (IBIMET-CNR, June 2018),
- Agrometeorological Services for rainfed crops (AGRHYMET, October 2018)

Course Description

Weather and climate are some of the biggest risk factors impacting on farming and water resources management. Extreme weather and climate events such as severe droughts, floods, or

heat waves strongly affect crop production worldwide and particularly in the semi-arid tropics and sub-tropics. Climate change is expected to exacerbate the magnitude and frequency of such events with probable worsening of impacts on cropping systems. In western Africa, Climate Change is a major risk for rural population because it affects crop production and exacerbate food insecurity in an area where most livelihoods rely on small-farm agriculture and on annual rain fed crops for satisfying basic food needs. Crop production system, are, then, particularly fragile due to desertification, soil degradation, low soil fertility, high levels of crop and livestock diseases. Such a vulnerability to climate risks is worsened by population pressure and food insecurity and adds to poverty, that is definitely the greatest source of vulnerability to climate at all latitudes and time scales.

The general goal of this third training course is to strengthen the capacities of CILSS/ECOWAS Member Countries in developing effective climate services for Climate Risk Reduction and Climate Change Adaptation. The specific objective of the Course is to strengthen the capacity of national technical services on for a better assessment of climate change and its impacts on agriculture and water resources and the consolidation of a network among scientific and technical institutions to work on shared methodologies and to create an objective and harmonized base of information. The aim is to transfer and share the know-how, to expand cooperation in sensitive areas to national and regional levels and to promote exchanges and collaboration through the application of research products and operational tools.

The course is designed for technicians and experts of National Hydro-Meteorological Services and other technical Services involved in climate risk reduction and adaptation. The course will be realized in Florence, Italy.

The training course has two parts:

- Distance learning module open for 4 weeks (mandatory) from 28 May to 22 June 2017;
- Workshop in Florence lasting 2 weeks from 25 June to 6 July 2017.

The distance learning module will be carried out through a Moodle platform. The Distance learning is mandatory to participate in the Workshop. The estimated time to complete the DLC is 8 hours per week.

Expected Learning Outcomes

Through the course, participants will acquire theoretical and practical knowledge on current approaches to assess climate change impacts in West Africa, with particular emphasis on:

- General aspects of agro-climatic analysis using observed and projected climatic datasets
- Fundamentals of agro-climatic modelling for impact assessment
- Communication of climatic information
- Operational application of climate and spatial analysis tools for agro-climatic risk analysis and assessment.

Target Audience

The course is specifically designed for climatologists, agro-meteorologists, agronomists and hydrologists by creating an environment where climate, hydrology and agriculture actors could share a common view and develop a common language. Target countries are the CILSS/ECOWAS Member Countries.

Course Content

The course will be organized in two phases:

1. *Distance Learning module on General aspects of agro-climatic analysis*: this module aims to ensure that all the participants reach the same basic knowledge and comprehension of

agro-climatic analysis. The module will be open for 4 weeks and will be realized on the Moodle distance-learning platform from 28 May to 22 June 2017.

General aspects covered by this module will be:

- IRI/LDEO Climate data Library Tutorial;
- Data analysis and manipulation using the open source programming language R;
- Data analysis and manipulation with crop models.

2. Workshop in Florence, Italy – 25 June to 6 July 2017:

2.1 Climate Data and Projections: This module will address the following aspects:

- Climatic Datasets and projections: availability, differences and limitations for agro-climatic analysis (day 1),
- Spatial/temporal resolution, suitability for analysis and downscaling (day 2),
- Integration of observed climate trends with climate projections for the assessment of climate change in the short term, (day 3),

2.2 Agro-climatic modelling for impact assessment:
This module will address the following aspects:

- Methods and tools for climate analysis in relation to crop production systems (day 4)
- Modelling and assessment of the impacts of climate change on crops and water availability,
- Assessment of economic impacts of climate change (day 7)

2.3 Communication of climatic information: (8-9)
This module will address the following aspects:

- The complexity of Climate Change Communication (day 8)
- Media and Climate Change: Develop Positive Relationships (day 9)
- Climate Services as communication tools (day 9)

2.4 Hands-on sessions (afternoons)

- Climate analysis with R (days 1-3)
- Crop Modelling (days 4-7)
- Communicating climate projections and crop yield scenarios to stakeholders: institutions, media, public (days 8-9)

2.5 Final presentation of case studies (day 10)

A visit will be organized during the course.

Course Format

4 weeks of distance learning through the Moodle platform (from 28 May to 22 June 2018)
2 weeks (from Monday to Friday) of frontal/classroom course (25 June to 6 July 2018) in Florence (Italy), which includes lectures, group discussions, case studies, practical training sessions.

The program accords a 50-50 sharing of the training time between lectures and practical sessions.
The training will be held at the Research Area of CNR in Sesto Fiorentino (Florence).
The scientific coordinator of the course will be Dr. Maurizio Bacci (IBIMET-CNR).
Students and teachers of the course will largely benefit from the Moodle platform through which educational material will be shared and assessment procedures conducted.

Evaluation

The training courses will be subjected to an effectiveness evaluation at multiple levels:

- Each activity will be evaluated for the initial response of participants to the relevance, effectiveness, engagement, and impact of the intervention. This feedback will be gathered via surveys.

- Participants will be awarded with badges for incremental competency development and certificates for completion of online, frontal, and follow on activities. During the workshop learners will be evaluated through practical exercises and quizzes covering essential course content.
- For the assessment of long term impacts, participants will be requested to:
    - share the course content in the participant's local institution and upload on the Moodle evidence documentation in multiple formats (photos, presentations, reports, video);
    - prepare a poster (typical conference poster) presenting an application of acquired knowledge to a case study relative to their own country/area. Posters will be presented at the final conference. Posters will also be evaluated and will used as evidence to a badge.

An award will be granted to the 4 participants that are deemed to have performed best, one for each training course, including the follow-on activities, on the basis of the acquired badges and a qualitative assessment. The 4 winners will be invited to the final conference in Rome where they are invited to present with a speech their poster and training experience during the plenary session.

Instructors' institution, tentative names and topic

CNR-IBIMET	M. Baldi	Climatic Analysis
CNR-IBIMET	V. Tarchiani	Disaster Risk Reduction
CNR-IBIMET	M. Pasqui	Climatic analysis and communication
CNR-IBIMET	E. Di Giuseppe	Climate data analysis
CNR-IBIMET	M. Bacci	Agroclimatic Analysis
CNR-IBIMET	R. Magno	Vegetation monitoring
CNR-IBIMET	E. Rapisardi	Communication
CNR-IBIMET	F. Ungaro	Soils to ecosystem services
CNR-IRPI	L. Brocca	Soil moisture monitoring
CNR-ISAC	E. Palazzi	Climate modelling
CNR-ISAC		Climate modelling
CNRS-LOCEAN	M. Gaetani	Climate modelling
University of Florence	R. Ferrise	Agroclimatic modelling
LOCEAN / IPSL	B. Sultan	Agroclimatic impact Analysis
Slovenian Environmental Agency	Tanja Cegnar	Communication
Agence Française de Développement IRD	P. Roudier L. Descroix	Climate Data projections Hydrologic impacts of Climate Change
AGRHYMET		
WMO		

Language
Trainings will be conducted in English
Tutoring in French will be guaranteed for practical sessions.
Training material will be available in both languages as far as possible.

Participant Qualifications for Admission

- *Education Level:* to be specialized in meteorology, climatology, hydrology, agricultural

sciences, or water management.

- *Position/Task:* from National Hydro-Meteorological Services, National Agricultural Services, or Research Institutions from CILSS/ECOWAS Countries
- *Basic knowledge of geostatistical analysis (R)*
- *Basic knowledge of crop modeling*
- *Experience:* At least 3 years of relevant working experience Climatic analysis
- *Language:* To be proficient in English

Application and Selection Process

Interested candidates are requested to complete the attached Participant Application Form, which includes the nomination by the national Permanent Representative with WMO. Applications, as specified in the Form, should be sent by the WMO PR of the country to the IBIMET-CNR and will be forwarded to WMO ETR Office and the AGRHYMET Regional Center.

PRs are kindly requested to submit up to 3 nominations, of which no more than 2 should be from the National Meteorological and Hydrological service and the others from National Agricultural Services or Research Institutions. PRs are asked to ensure gender diversity. Participants' selection will be made by the three project partners (WMO, IBIMET-CNR, AGHRYMET), with the goal to broaden national and institutional engagement.
At least 17 participants will be selected among nominations from PRs of member countries. The selection will be based on the following criteria: geographical representativeness (in principle, 1 participant from each country), as well as the suitability of the participant based on the CV and nomination form. In the case that one or more countries do not propose participants, or the proposed participant from a given country do not meet the selection criteria, additional places will be allocated to the other target countries.

Up to 8 additional participants will be directly invited to each course, based on partners' consensual decision, coming from national, regional or international technical or research organizations of the target countries. Furthermore, up to 5 further participants can be accepted to participate in the course with funding from sources outside the project. The maximum number of participants is therefore 30 per training course.

Admitted participants are requested to prepare:

- a climatic dataset (30 years of data) for at least 3 climatic stations in their own country to be used for the practical sessions of the course
- crop and soil characteristics in the stations' area
- a report/presentation on their (or their service's) experience on the themes of the course for the purpose of knowledge exchange.

The Institute of Biometeorology guarantees equal opportunity and accepts applications without distinction on the grounds of age, race, political, philosophical or religious conviction, gender or sexual orientation and regardless of disabilities, marital status or family situation.

Costs

Tuition is free for all the admitted participants

Selected participants funded by the project will receive:

- A prepaid flight ticket,
- Prepaid accommodation in Florence,
- Transport from/to hotel/course venue,
- Lunches and coffee breaks during the course
- Pocket money for other expenses not previously listed.

Health insurance and costs for obtaining Visa are not covered by the project.
Other participants admitted but not funded by the project have to cover their own travel and accommodation expenses. IBIMET-CNR will provide help for booking accommodation in Florence.

Deadline for Application
11 March 2018