



WMO, AGRHYMET Regional Center



and CNR-IBIMET



International Training Course on Agrometeorological Services for Agriculture and water use

February, 1st – February, 14th, 2018 (Distance Learning)

February 19th – March 2nd, 2018 (Classroom Learning)

Venue: Centre Regional AGRHYMET
BP 11011 Niamey, NIGER
Website: www.agrhymet.ne

Background

The course is the second event of the Training Program on Climate Change Adaptation and Disaster Risk Reduction in Agriculture (PACC/RRC), funded 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 AGRHYMET Regional Centre 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),
- Methodologies for Climate Change impact assessment (IBIMET-CNR, June 2018),
- Agrometeorological Services for rainfed crops (AGRHYMET, October 2018)

Course Description

In light of climate change, agriculture sector must simultaneously address three challenges: (i) ensuring food security through increased productivity and incomes, (ii) adapting to climate change and (iii) contributing to the mitigation of the impacts of climate change and disaster risks. In Africa, in particular in West Africa, a smart agriculture should be developed in order to take into account the increasing pressure on natural resources due to the predominant extensive agriculture system and the growing population. The development of such smart agriculture requires the development of tailored agrometeorological products and services. Indeed, agrometeorological services play a very important role in the development of disaster risk reduction strategies in the agricultural production sector mainly in water scarce regions.

In West Africa, especially in the Sahel, the scarcity of water resources combined with the high dependence of people's income on agricultural products creates a vicious circle in food insecurity issue. With regard to the vulnerability of the rainfed agriculture to climate change in these countries, the development of agrometeorological services regarding the efficient use of water in irrigated agriculture is crucial for improving people's livelihoods, therefore, a means to reduce food insecurity. However, such agrometeorological services for off-season cropping in the Sahel, are rare and / or poorly adapted to the needs of farmers.

The overall objective of this training is to strengthen the capacities of CILSS / ECOWAS countries on the effective development of climate services for disaster risk reduction and adaptation to climate change in agriculture.

The specific objective is the training of national technical services staff on agrometeorological services for agriculture and water use in the light of climate change.

The training will address the relationships between soil, water, climate and plants and the adaptation of agricultural irrigation systems to climate change. It will also address innovative irrigation techniques. The pedagogical approach emphasizes the sharing of knowledge and the promotion of exchanges and collaboration through the operationalization of research products and tools.

The training will be split in two parts:

- 2 weeks for an online course (mandatory). The training modules will be implemented in a moodle platform which will also be used for information sharing, training materials and evaluations. This first step of the training will take place from February 1st to February 14th, 2018;
- A two-week training workshop held in Niamey from February 19th to March 2nd, 2018.

Expected Learning Outcomes

Through this course, participants will acquire theoretical knowledge on agrometeorological products related to the efficient use of water in irrigated cropping systems. They will also benefit from the current practical approaches for coping and adaptation to climate and climate change in the domain of irrigation. This training will have a focus on off-season cropping system. The main covered topics are the followings:

- Basics on irrigation;
- Crop water requirements;
- Irrigation water demand;
- irrigation techniques and tools;
- Operational management of irrigation;
- Smart irrigation practices in the context of climate change;

Target Audience

The course is specifically designed for agrometeorologists, agroclimatologists, hydrologists, agronomists and on-farm water management related disciplines with the aim to create an environment where climate, hydrology, water resource management and agriculture actors could share a common view and develop common approaches in the field of crop irrigation. Target countries are the CILSS/ECOWAS Member Countries.

Course Content

The content of the course is the followings:

1. *Distance Learning module: It will focus on Instat+, CROPWAT software and ETo computation using Instat+:* this module aims to ensure that all the participants reach the same basic knowledge and comprehension on the concerned software and application to ETo computation.
2. Face to Face training course: general aspects covered by this module will be:
 - Introduction: General concepts on irrigation;
 - Basics on the development and planning of irrigation;
 - Climate: main factor for water needs in irrigation;
 - Components of an irrigation system: soil, water, plant;
 - Field water balance;
 - The soil-water-plant-atmosphere relationship;
 - Crop water requirement and irrigation schedule;
 - Different irrigation techniques;
 - Operational management of an irrigation system;
 - Smart irrigation practices in the context of climate change.

Course Format

The program accords a 50-50 sharing of the training time between lectures and practical sessions. The scientific coordinator of the course will be Dr. Moussa WAONGO (AGRHYMET Regional Centre).

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 and face to face courses, and also of 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:

- o share the course content in their local institution and upload on the Moodle evidence documentation in multiple formats (photos, presentations, reports, video);
- o Prepare a poster (typical conference poster) presenting an application of the 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 be 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 will present their poster and training experience during the plenary session.

Language

Trainings will be conducted in French with tutoring in English.

Training materials will be available in both languages as far as possible.

Participant Qualifications for Admission

- *Education Level: At least Senior Technician (BAC+2 years) degree* in agrometeorology, agroclimatology, hydrology, agricultural sciences, or water management.
- *Position/Task: from National Hydro-Meteorological Services, National Agricultural Services, National water management services from CILSS/ECOWAS Countries*
- *Basic knowledge of crop water management related software*
- *Experience: At least 3 years of relevant working experience on agrometeorological assistance or on-farm water management.*
- *Language: To be proficient in French or in English. Fluency in both languages will be an advantage.*

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 AGRHYMET Regional Centre and will be forwarded to WMO ETR Office and the IBIMET-CNR.

PRs are kindly requested to submit 3 nominations, of which no more than 2 should be from the National Meteorological and Hydrological service. PRs are asked to ensure gender diversity. Participants' selection will be made by the three project partners (AGHYMET, IBIMET-CNR, WMO), 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 organisations 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 report/presentation on their (or their service's) experience on the themes of the course for the purpose of knowledge exchange. They are also requested to prepare a daily dataset of climatic data (rainfall, radiation, temperature, wind, Relative Humidity to be used for the practical sessions of the course).

The AGRHYMET Regional Centre guarantees equal opportunity and accepts applications without distinction on the grounds of age, race, political, philosophical or religious conviction, gender 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,
- Transport from/to hotel/course venue,
- Lunches and coffee breaks during the course,
- 50 euros/day as pocket money for other expenses not previously listed, for non-resident
- 30 euros/day as pocket money for other expenses not previously listed for resident in Niger
- 50 euros as Health assistance for foreigners.

Other participants admitted but not funded by the project have to cover their own travel and accommodation expenses. However, the fees for the training course is 1 000 000 FCFA. AGRHYMET will provide help for booking accommodation in Niamey.

Deadline for Application

The deadline for applications is December 21st, 2017, 12h30 pm. After this deadline, no application will be considered in the selection process.