



Combating Climate Change. Improving Livelihoods

Meeting Report

Short courses' development for professionals working in climate change in West Africa

Date: 24-26 November 2022

Venue: Hotel Sarakawa Lomé, Togo

Meeting type: physical presence

Lomé, November 2022

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1. Introduction

The development short courses for WASCAL Graduate Studies Programmes (GSPs) took place in Lomé, Togo from 23 to 26 November 2022. Nearly twenty (20) people participated in the meeting including:

- Chair of Scientific Advisory Committee (SAC), Prof Brice Sinsin;
- Director of Capacity Building, Prof Daouda Koné;
- 10 directors of GSPs or their representatives
- Staffs of WASCAL-Togo and some staffs of the capacity Building Department
- 3 directors of Key departments of University of Lomé

The following presentation were planned:

- Need assessment results for Togo
- The importance of need assessment
- Short courses developed for ten (10) GSPs
- Presentation of the Regional Centre for Poultry Science (CERSA) of University of Lomé
- Presentation of the continuous course department of University of Lomé
- Presentation of the SAC
- General discussion
- Site visit

Six (6) developed short courses' presentation were presented on the first day and four on the second day. The third day was dedicated to the site visit of CERSA.

2. Short course need assessment results for Togo

The short course need assessment results were presented by the Director of WASCAL-Togo, Dr Komi Agboka. A quick survey was conducted by the GSP from 21 to 23 November 2022 on 19 Togolese public and private institutions which took part to the WASCAL CLIMATE DAYS in order to know the need for short courses in the country. The suggestions of the stakeholders include the following thematics:

- Monitoring and evaluation of project
- Communication of scientific recherche efficiently
- Estimation of greenhouse gas emissions
- Soil, water management

- Climate modelling
- Objective whether forecasting
- Impact assessment
- How to install and maintain solar energy system/ solar irrigation installation
- Disaster or climate finance.

Prof. Sinsin recommended to put in place efficient communication strategies that will let the target institutions know on time about the availability of the courses at WASCAL. WASCAL should think of how to adapt courses to all situations and all needs in our countries.

Prof Adoukpe think a short course on technics of negotiation at the COPs or climate advocacy can be additionally developed.

Dr Beye suggest that the need assessment can use quantitative approach which will help prioritise short course needs.

According to Prof Kone, can link thematic to the various GSPs and help create new curriculum for new programmes. We should think of having tools that support in the estimation of greenhouse gas in each school and train students and professionals on those tools

3. Importance of need assessment

This topic was presented by the Director of WASCAL Department of Capacity Building, Prof Daouda Koné.

At the beginning of his communication, he reminder to all the participants the annual roadmap table and recommend us to comply with it.

He then highlighted some of the collaboration his department has with some institution and recommend to all the participants to encourage institutions collaborate with WASCAL and accept our students after their graduations such as the collaboration with the Niger Basin Authority (ABN). WASCAL was approach by ABN to develop for 9 countries of the Niger river basin a curriculum on Integrated Water Resource Management (IWRM). It is a module for training the trainers with 85 people trained to meet the needs of government and private organisations.

The need assessment conducted prior to the programme on renewable energy and green hydrogen helped in the decision to open the programme for the 15 countries of ECOWAS

WASCAL is also in collaboration with ACCRA which is an institution that conducted several projects for several years. This helps the institution to produce a lot of data and paper. These products can be used to provide services in the field of climate smart agriculture. Senegal, Ghana, and Mali are making the need assessment on it. A lot of knowledge is produced by researchers in CoC, and by students of GSPs through policy briefs and data collection but the knowledge is not used. WASCAL is in possession with more 400 papers. Prof Sinsin suggested that the best papers and thesis can be selected for publication as a book. This can be either at GSP level or WASCAL level.

4. Short course presentation per country

Ten (10) short courses were presented by the directors of GSPs of their representatives from 24 to 25 November 2022 at Sarakawa Hotel of Lomé, Togo. These GSPs are:

- Togo
- Senegal
- FUT Mina, Nigeria
- Mali
- Ghana
- Côte d'Ivoire
- The Gambia
- Burkina Faso
- Cape Verde
- Benin

4.1. Togo

Dr Agboka presented the short course for Togo. He presented one a module entitled “Disaster risks management in crop production, livestock and aquaculture”. The module is made of three (3) sessions:

- Climate disaster risks in agriculture and food systems;
- Strategies for integrated climate risks management in crop, livestock and aquaculture production;

- Practical approaches in disaster risk management in crop, livestock and aquaculture

The targeted participants of the course are:

- Academia
- NGOs & Consultants
- Farming community
- Civil servants in Policymaking, planning
- Agrobusinesses

It has been suggested to Dr Agboka to clearly identify and show the need of communities. The course looks like for academic training. Therefore, there is a need to look at the indicators for the motivation and tools used to measure those motivation. There is also a need to focus on key points from the result of brain storming activity. It also suggested that some session can be split into several session in order to be more focus on the need of the participants.

The timeline for submitting this module to the capacity building department is 31 January 2023.

4.2. Senegal

The short course for Senegal GSP is presented by Dr Beye. The developed module is on "Climate finance". The module is made of five (5) sessions:

- Fundamentals of climate finance
- Analysis of climate projects
- Climate Finance: Instruments and products
- Climate Finance: Markets & Institutions
- Climate change and its economic consequences

The beneficiaries of the module are professionals and policy makers or any extensionists.

Other modules that can be developed by the GSP are:

- Cost benefit analyses
- Risk management in Agriculture
- Climate insurance

- Carbone market for west African projects (there are many opportunities in the area)

It has been suggested to the GSP to make the module in both French and English and the GSP should add the evaluation method to their draft.

The timeline for submission of the draft of the short course to the capacity building department is 31 January 2023.

4.3. FUT-Mina

The Director of GSP Climate Change and Habitat at the Federal University of Technology of Mina (FUT-Mina), Nigeria, Prof Okhimamhe, presented the short course module on “Green infrastructure and urban development”. The module is structured as follow:

- Green Infrastructure Principles, Policies and Practice
- Green Infrastructure Performance, Evaluation and Monitoring
- Green Infrastructure and Sustainable Cities
- Remote Sensing and GIS application case studies
- Field work

The beneficiaries are:

- Postgraduate Degree holders (Masters and PhD) with background in Geography, Climate Science, and related subjects
- Preference for people already working in NGOs, public
- working knowledge of the use of Geospatial Technologies is necessary

She stressed on the need to invest in facilities for the success of the module course.

The GSP intend to develop other modules such as:

- Spatial data for sustainable urban development
- Transportation planning and sustainable mobility
- Climate Change mitigation

As a skill in GIS is very important for the module, it has been suggested to develop a course in GIS, remote sensing and computing as a complementary module. The certification of the course will be done by the University and WASCAL.

The timeline for the GSP to submit the draft of the course to the Capacity building department is 31 January 2023.

4.4. Mali

The director of the GSP Mali is represented by Dr Samasse who presented seven (7) modules that GSP is developing:

- Module 1: Climate risks in pastoral ecosystems in West Africa
- Module 2: Integration of climatic factors into production systems
- Module 3: Crops production for enhancing food security in climate change situation
- Module 4: Agro-photovoltaic for better agricultural and livestock production
- Module 5: Agronomic suitability of soils
- Module 6: Integrated Soil Fertility Management in crop production in Mali
- Module 7: Introduction to Geospatial Technologies for Agricultural Monitoring

The module 1 entitled “Climate risks in pastoral ecosystems in West Africa is made of four (4) sessions including:

- Clarification of the notions of climate risks and ecosystems
- Pastoral systems practiced in West Africa
- Climate change and pastoral resources
- Strategies for adapting pastoral systems to climate change

The module 2: “Integration of climatic factors into production systems” has the following three (3) modules:

- Causes of climate change
- Consequences of Climate Change
- Mitigation strategies

The module 3 which examines “Crops production for enhancing food security in climate change situation” is divided into three (3) sessions including:

- Plant and its environment
- Plants production process (Crop productivity)
- CSA and value chain

Module 4 is entitled “Agro photovoltaic for better agricultural and livestock Production is a single session module.

Module 6 entitles “Agronomic suitability” of soils which is a single session module can be merged to the module 6: “Integrated Soil Fertility Management in crop production in Mali”. Module 6 has four (4) sessions listed below:

- General soil properties and plants physiology
- Integrated soil Fertility Management and crops production
- Climate, Agriculture and Environment
- Soil Classification and Land Evaluation

Module 7 “Introduction to Geospatial Technologies for Agricultural Monitoring is made of four (4) sessions including:

- Basics of Remote Sensing and Geographic Information System
- GPS and mobile based data collection
- Introduction to satellite-based crop monitoring
- Geospatial data analysis for crop monitoring

Depending the module, the beneficiaries can people with bachelor, Master or PhD degree, farmers association and policy makers.

It has been suggested that the courses are given in French and English depending to the need and Module 5 and 6 could be merged. All the teaching materials should be translated into both English and French when participants are a mix of anglophone and francophone people.

The deadline for submitting all the modules is 31 March 2023.

4.5. Ghana

The short course for Ghana GSP is presented by Prof Agyare from the Kumasi National University of Science and Technology (KNUST). The short course is entitled: “Collection, Analysis and Application of Climate and Land Use Data”. Five (5) sessions are developed in the module including:

- Climate and Land Use Data Sources and Acquisition
- Time Series Analysis
- Climate and Land Use Data Analysis and Applications

- Application of Spatial Econometric Approaches on Climate and Land Use
- Visualization of Climate and Land Use

The targeted participants are BSc or MSc students in science engineering, environment and related subjects, extensionists, policy makers.

Other modules that the GSP is working on or will develop later are:

- Soil and Water Conservation for Sustainable Land Management
- Land Tenure and Conflict Management
- Remote sensing and GIS for Land Use Planning and Management
- Practical approach to water erosion and flood control within communities
- Drone Piloting and Mapping for Use Planning and Monitoring

It has been suggested that the GSP can also develop courses on “soil carbon sequestration.

On the module on Drone piloting, it has been suggested to bring the course to national requirement and take into account what other institution are doing in order to propose an innovative approach in the area.

The timeline is 31 January 2023 for submitting the complete draft.

4.6. Côte d’Ivoire

The GSP Côte d’Ivoire presented their short course entitled: “Overview of the major components of Biodiversity”. The GSP is represented by Prof. Kouassi of the University Houphet Boigny.

The targeted participants are:

- Professionals
- Decision-makers
- Awareness-raisers
- policy makers
- nature-lovers

The three modules that will be developed are:

- Major plant groups;
- Plant formations and the ecological environments.

- Animals and their distribution across biotopes.

According, Prof Sinsin, it is important to design courses that target the following area:

- Traditional medicine
- zoo keeper /ranges
- animal ranger
- ornamental planting

Dr Beye suggested one Health approach can be used. Modules such as:

- Plant conservation for plant sellers
- Biodiversity for plant protection
- Key elements for animals and plant identification

Finally, the format or the template of the short course need to be checked in order to uniformized it with other GSP short courses.

The timeline for the first module is 31 January 2023.

4.7. The Gambia

The first module of the GSP The Gambia is “Climate Change Education as a Tool to Enhance Climate Change Adaptation and Mitigation in The Gambia”. The short course was presented the Director Prof Yaffa; from the University of The Gambia.

The key modules are:

- Introduction to Climate change
- Climate Change Impacts
- Adapting to Climate change Impacts
- Climate Change Mitigation
- Climate Change Mitigation Strategies
- Develop institutional capacity for adaptation
- UNFCCC Processes

The GSP expecting a minimum participation of ten (10) people from seven (7) institutions in The Gambia including: MECCNR, MoA, UNDP, TANGO, AAITG, MoF, Ministry of Fisheries.

For the field visit participant will visit field visit livestock production systems in order for awareness raising on emissions. Landfill can also be the visited for adaptation and

mitigation development purposes as Gambia need to reduce its greenhouse gas emissions. The target participants are the urban population around the capital. According to Prof Yaffa, the participants are only required to know how to read and write in English but there is a possibility to give the course in local language

Prof Tona, the director of the Regional Centre on poultry science (CERAS) of the University of Lomé suggested that a participant can visit a poultry farm as poultry is the best place to monitor climate change. Poultry waste of CERAS can be used by WASCAL. Therefore, there is a need for WASCAL AND CERAS to collaborate in a common Master programme on waste management.

It has been suggested to the GSP to improve the outcomes and think of tools to be used in the field or laboratory to monitor greenhouse gas emissions.

On negotiation, it has been suggested to create a close to reality environment for the participants.

January 2023 is the timeline for the GSP to submit its draft to the capacity building department.

4.8. Burkina Faso

The GSP Burkina Faso developed a short course on “Climate modelling”. The course was presented by the director Prof Zoungrana of the University Joseph Ki-Zerbo of Ouagadougou.

The targeted participants are:

- Professional with minimum master level
- PhD students
- Researchers
- Academicians

The second course the GSP would like to develop is the training on “how to use Kobo tools box for remote data collection in insecure locations in Burkina Faso”. The GSP has already successfully organised two trainings on the tools.

Instead of training on climate modelling that needs very high qualification, it has been suggested by Prof Sinsin to rather develop a short course on:

- Available climate model products

- Existing tools to work efficiently with the model products and how to customise these tools for the specific needs of the participants
- Data management

For where to find high computing facilities, the GSP intend to work with institutions that possess the facilities such as the WASCAL Competence Centre, National Meteorological Agency of Burkina Faso.

It has been also suggested that the GPS should conduct a feedback survey to how the trains on Kobo have been useful to the participants.

4.9. Cabo Verde

Prof Koné presented the short course developed by the GSP Cabo Verde who want to train on “Data visualisation using Python”.

This course can be split into 3 key areas:

- Core Python3 and the essentials to master the libraries used in this course
- Analysing and manipulating data (master both NumPy and Pandas)
- How to display data in the form of interesting charts using Matplotlib, Seaborn and Plotly Express

Five (5) sessions are planned in this module:

- Python Introduction
- NumPy basics
- Data visualization
- Data manipulation
- Exploratory Data Analysis and Data Cleaning Preparation
- Model Development
- Model Evaluation and Communication

The suggestion of another module is “Protection from sea breeze”. Also, it is important to precise which techniques of machine learning is going to be used in the course

4.10. Benin

The GSP Benin represented by it director, Porf Adoukpe of the University of Abomey Calavi communicated on two (2) modules:

- Module 1: Water resources in agriculture, livestock and aquaculture

- Module 2: Greenhouse gas (GHG) inventory by economic sectors

Module 1 is developed in collaboration with GSP Niger. It is made of five (5) sessions including:

General hydrology, atmospheric, surface and ground water quantity

- Water physical, chemical, and biological characteristics
- Water quality for agriculture and food production
- Water quality for aquaculture
- Waste water for agriculture, supplying treated water and nutrient.

It targets participants:

- Master degree
- Extensionists
- Policy makers
- Decision-makers

Module 2 is divided into five (5) sessions including:

- GHG and Global Warming
- GHG inventory in energy sector
- GHG inventory in agriculture sector
- GHG Inventory in transport sector
- Developing National communication

The beneficiaries are:

- Civil servants, NGO, consulting agencies,
- Extensionists
- Policy makers
- Decision-makers.

It has been suggested to the GSP to work with GSP Federal University of technology of Akure (FUTA) as FUTA is the WASCAL GSP on climate system. It has been suggested by Prof Yaffa that the module on GHS is not fit to the GSP Benin's speciality. However, Prof Adoukpe said few years ago, WASCAL has paid for his training on GHS in the NASA in USA. But nothing has been done with his report since he came back. Prof Sinsin, said he should write a short note to explain the lack of training on

GHS in WASCAL and then Prof Adoukpe will be invited to present to the SAC. Perhaps, a short course at regional level can be proposed on GHS.

Timeline for submitting the draft is 31 January 2023.

5. Guest presenters

On the fifth day, there have been the participations of three local guests of University of Lomé. Two of them gave us communications on how to implement short courses in their respective institutions. The guests were:

- Prof Tona Kokou, the director of the Regional Centre for Poultry Science (CERSA)
- Prof Bana, the director of continuous courses
- Prof Aholou Koffi, the director of the Regional Centre on sustainable cities (CERVIDA).

Prof Aholou had a short discussion with Prof Okhimamhe on areas of collaborations between the GSP FUT-Mina and CERVIDA.

5.1. Presentation of the short courses at the Regional Centre for Poultry Science (CERAS) of University of Lomé

The director of CERSA, Prof Tona shared on the implemented short courses at his institution. Eight (8) modules on the full poultry value chain, from the egg to the plate are implemented by the centre. Most of the case people are very interested in the course especially, poultry farmer in the region. The course can be taken online or by physical presence in several countries. To train physically in other countries, CERSA rely on its partners. Participants can take the whole package of the course or choose some modules. Usually, 25-50 participants are enrolled in the course.

5.2. Presentation of the short courses at the Centre of continuous course of University of Lomé

The director of continuous studies of the University of Lomé, Prof Bana gave a communication on short course of his institution. The short courses are legally guided by both Ministries of in charge of education and labour. The courses' beneficiaries work at the University of Lomé and outside. The courses are designed to enhance the capacity of administration works such as secretaries and accountants. The centre does not have teachers on its own but it relies on teachers from the university of Lomé and

elsewhere. The certification is provided by University of Lomé. They also train for bachelor and Master's degrees. The courses are given in the night and on Saturdays. The centre is funded by the university and external institutions. Participants from foreign countries can be trained in the centre.

Prof Sinsin made the remark that courses in the region are not customised for academic administrative work and are too general. He suggested to the centre to develop a course that is specific for academics. This will help academics in administration to be more efficient. At the University of Lomé, there are regular capacity building for secretaries and accountants but this is still not sufficient.

To reach their beneficiaries, the centre uses many media outlet such as radio, written press. The centre also has a department in charge of going to companies and sensitising workers to participate in the training of the centre.

From this, it appears that if WASCAL works well on its short courses it can fund its GSPs with revenues from short courses

6. Presentation of the SAC

The Chair of the Scientific Advisory Council (SAC), Prof Brice Sinsin gave the participants a short communication. The mission of the SAC is to give scientific opinion. It supports the WASCAL board to make scientific decisions. The SAC is made of ten (10) members from several countries appointed for three years and renewed once. The current SAC members are from Germany, France, Benin, Senegal, Côte d'Ivoire, The Gambia. The SAC members come from different scientific backgrounds such as Ecology, meteorology and climate sciences. The members of SAC are assigned to certain GSPs.

When to renew curricula, inform the director who will contact the SAC and a member of the SAC will be sent to participate in the process. Any problem can be discussed with the SAC after it has been contacted by the Director.

To the question how and who appoints SAC members, he said the SAC appoints itself. When a position is vacant, each current member is asked to make a proposition. After evaluation of the profiles based on the speciality that needs to be filled, the current members will decide on the person to be appointed.

The frequency of SAC ordinary meeting is twice per year. However, the SAC can be consulted whenever there is a problem.

(@Selasi: Prof Koné has not set me the PowerPoint on the presentation. So, if you have something to add here, don't hesitate, please)

7. Directors' meeting

The meeting for short course development has been an opportunity to hold GSP directors' meeting physically at the Sarakawa Hotel, Lomé Togo.

The following topics have been discussed:

- Update on batch 4 and 5
- How to make available student research fund: advance stipend can be paid to students on time
- Delay in payment of lecturers
- GSP representative at various alms of WASCAL (Ministerial Council, Governing board, SAC)
- Tenth anniversary organization money and period
- Support of short course development
- Start of individual programme webinars: climate flash in Côte d'Ivoire.
- PhD student stipend extension

7.1. Update on batch 4 and 5 per GSP

- **GSP Togo**

Most of Batch 4 student have submitted their thesis. The next steps are submission to scientific committee and English editing and defense

Students of Batch 5 are in their respective countries for field research. However, there was a long delay in the payment of their research funds.

As challenge, two (2) students are lagging behind: students from Ghana and The Gambia. Their scholarships are suspended.

- **Benin**

Most of Batch 4 students are back to the GSP as they have to be back at least 6 months before the end of the scholarship. They are rapping up thesis writing. The submission of their thesis is due on 2nd December 2022 and the defense on 15th April 2023

The Batch 5 student received their research funds are doing their field research. The insurance paper work is completed and sent to Accra for approval.

The challenges are in student publishing paper as publishing at least one paper is the requirement before the defense. Some students are not very focused on their work.

- **Burkina Faso**

All Batch 2 students defended their thesis in July 2022 except the student from Ghana who is not responding. Latterly, he sent a half page note saying has not progressed with his work.

Batch 3 is finishing its third semester on mid-December 2022. their defense will be in July 2023.

- **Côte d'Ivoire**

Batch 4 students are expected to come back from Germany on 30th November 2022. Some are back but t 2; 2. Back from Germany but they have not published yet.

All the Batch 5 students are in the field for data collection except the student of Nigeria because of the issue of registration.

- **Senegal**

Most of Batch 4 student are back from Germany. Six (6) have submitted their thesis and the deadline for submission is 31st December 2022. The defense is planned for February-March-April 2023.

The Nigerian student is not progressing and measures are in place for closer monitoring of her progress.

Batch 5 are writing their proposal.

- **The Gambia**

Batch 4 student will be back on 1st December 2022 for their defense in February 2023. They have made good progress. Three (3) of them published a paper. Three (3) have their paper under review and might publish before their defense.

All batch 5 students are conducting their field research

All students are insured in The Gambia.

- **Ghana**

For the batch 4, there is challenge with two students: no response from the student from Niger and data collection challenge for the student from Nigeria. The defense is planned for 15th February 2023.

All the Batch 5 students are conducting field research except one who needs reassessment.

All students have been successfully insured in Ghana.

- **GSP FUT-Mina, Nigeria:**

Five (5) students of Batch 4 are back from Germany. Two (2) conducted internal exam. None has published. Hopefully they will be able to defend in January. Challenge with two students

Batch 5 student are very good working student. They gone for field research. Most of them have Germany supervisors except one. Unfortunately, two (2) cases (Togo and Ghana) of health issues went early back to country before completing their course exams. Discussions are ongoing to arrange exams in their respective countries.

- **Mali**

Some Batch 4 students have concerns on securing two-year data collection. The submission of their thesis is due on 25th November 2022. Some have publishing challenge as only two (2) papers were published by students. They might be able to complete their thesis on time as they have just finished their second-year data collection. The defense is planned for in March 2023.

All the Batch 5 student defended their research proposal are now conducting their field research in their respective countries in order to be able to meet the first-year data collection. All the students are insured.

From all the GSPs presentation it seems like there have been a lot of problems with Batch 4 students. According to Mrs Weto, most of Batch 4 were alumni from batch 3 who noted the stipend decrease. Therefore, many drop out as result of that and we have to rely on second or third best applicant. For Prof Sinsin, WASCAL should not chose second or third best applicant. It should rather relaunch the call for application in order to select best students. The need to improve selection process has been also

raised. However, According to Prof Rabani, many students drop out as result of good job opportunities as WASCAL programme opened a lot of good job opportunities for students.

7.2. Other discussed points

On how to make available student research fund on time, it has been suggested that advance stipend can be paid to students to allow them not to be late. Prof Sinsin suggested that the board can be contacted to discuss this issue if the problem come from functioning of WASCAL financial system.

On the delay in payment of lecturers, it suggested to well check the transfer. Sometimes, it is due to transfer malfunction.

On tenth anniversary organization money and period, the money is already in the account of each GSP. GSPs are recommended to organise theirs before the end of the year 2022 or in January 2023 the latest.

On the start of individual programme webinars: GSPs are encouraged to organise them whenever there is an opportunity. GPS Côte d'Ivoire has an event called "Climate flash"

On Batch 4 PhD student stipend extension, it has been suggested that student be inform about the extension of their scholarship until April 2023.

8. General discussion and way forwards

Many topics have been discussed and opened questions were asked. For example:

- Where to get seed money to start the short courses?
- How will short course operated?
- How to get equipment needed for the short courses as the course should be very practical?

It was suggested look for equipment in local institutions that could collaborate with WASCAL and be part of the courses by contributing to equipment and other facilities. This have been already experienced in PAUWES programme in Benin.

For in-service training, ministries are contacted by WASCAL of the country. The was case for course on "mitigation and adaptation" that many ministries have taken part and the Field work was conducted at Akossombo.

The initial idea for WASCAL short courses is that a certain number of courses will be advertised. The go-ahead will be given to the courses where the minimum numbers of participants are reached and those courses can be launched. We will start at country level before going regional.

Table 1 presents the repartition of need for short course per GSP. The table will be shared with directors so that they select the courses they can be able to implement. If there are areas where no GSP can give course, a need assessment will be conducted to see how to develop our capacity in those area.

Roadmap of 7 steps until June 2023 in table 2.

During the process of short course development, it is possible to validate the courses with stakeholders online. Before implementation, the courses will be tested. It highly recommended that each GSP come out with at least 3 courses.

It is suggested that stakeholders should be also prospectively trained in Green H2. They can also be trained on: how to look for funding or how to develop projects.

Table 1: Repartition of need for short course per GSP.

	Title of training	GSP
1	Monitoring and evaluation	
2	Communication of scientific research and fund raising	
3	Communication- cc and education	CCE,
4	Evaluation of GHG in different sectors	CCWR, WACS, CCAgric, CCHH
5	Water management	CCWR, CCAgric
6	Integrated soil management – sustainable land management	CAgric, CCLU
7	GIS training	CCHH, CCLU
8	Soil analysis	CC
9	Climatic projections (Scenarios)	FUTA, CCbiodeversity,
10	Agrometeorological modelling	

	Title of training	GSP
11	Climate modelling	FUTA
12	Practical Tools and methods in climate change mitigation	FUTA, CCWR
13	Planning of adaptation to CC	CCAgric
14	Agrometeorological modelling	FUTA
15	Impact assessment	CCBios, CCHH,
16	Biogas production	CCDRM
17	Vulnerability Adaptation and assessment	CCDRM
18	Solar pump for irrigation and maintenance	CCE
19	Drought resistant seeds development (fundamental research)	CCAgric, CCBios
20	Solar irrigation systems	
21	Disaster risk supporting with finance	CCE,
22	Integrated Disaster risk management in agriculture	CCDRM
23	Climate finance	CCEco
24	Negotiation	CCEducation, WACS
25	Building Capacity in Hydrogen	CCEnergy,

Table 2: Roadmap for the short course development.

Activities	Date 1	Date 2
Finalization of the complete draft of short courses and sent to WASCAL Headquarters	31 st January 2023	
Finalization of all short courses		31 st of March 2023
Review and feedback from WASCAL Headquarters		30 th April 2023

Activities	Date 1	Date 2
Director Meeting for validation with one of the SAC members -identification of stakeholders for validation		May 2023
Expert review		May 2023
Testing the short courses		June 2023
Director's meeting to discuss on the implementation of the short courses to launch		June 2023

9. Site visit

The directors visited the Regional Centre on poultry Science (CERSA) of the University of Lomé. The centre is located in the campus. It has an experimental poultry farm in the campus along with very sophisticated laboratories and the slaughter houses. The centre covers the full value chain from the egg to the plat.

10. Closing remarks from the SAC chair

The participation of Prof Sinsin, the Chair of SAC has been a wonderful asset for the meeting through his very insightful comments and suggestion. He said his take-home messages for directors are:

- Practical works need to be very stressed in the short course
- It is important to align short courses with country GSP
- Importance to create a training course on GHG.
- Each director should send to Prof Koné the statistics of students who dropped out of the WASCAL programme with the reasons for dropping out.

He finally shared a logical framework (Table 3) for short course presentation.

Table 3: Logical framework for short course presentation

Specific objective <i>i</i>	Problems to be solved or raised during brainstorming meeting	Background requirements of applicants	Background knowledge to be refreshed or to be improved	Experts available and their provenance (academic or professional)	Kind of practical works and time % allocated	Already identified sites for field work	Total expected applicants	Expected revenues

It is recommended to the directors to add this framework at the end of the template previously provided to them.

11. Annexe: Agenda of the meeting

Time	Activity	Moderator	Speaker
Day 1			
9h00-9h45	Session 2.1: Presentation of the need assessment results of the short courses	Prof Brice Sinsin	Dr Agboka
9h45-10h30	Session 2.2: Importance of need assessment	Prof Brice Sinsin	Prof. Kone
10h30-11h15	Session 2.3: Presentation of the short curricula development of WASCAL-Togo	Prof Brice Sinsin	Prof. Agboka
11h15-11h30	Coffee break and networking	Organisers	
11h30-12h15	Session 2.4: Presentation of the short curricula development of WASCAL-Senegal	Prof Brice Sinsin	Dr. Barry Ibrahima
12h15-13h00	Session 2.5: Presentation of the short curricula development of WASCAL-FUT-Mina	Prof Brice Sinsin	Prof. Okhimamhe
13h00-14h00	Lunch break	Organisers	
14h00-14h45	Session 2.6: Presentation of the short curricula development of WASCAL-Niger	Prof Brice Sinsin	Prof. Rabani Adamou
14h45-15h30	Session 2.7: Presentation of the short curricula development of WASCAL-Mali	Prof Brice Sinsin	Dr. Diallo Yacouba
15h30-16h15	Session 2.8: Presentation of the short curricula development of WASCAL-Ghana	Prof Brice Sinsin	Prof. Wilson Agyare
16h15-17h00	Session 2.9: Presentation of the short curricula development of WASCAL-FUT-Akure	Prof Brice Sinsin	Prof. Debo Adeyewa

Time	Activity	Moderator	Speaker
Day 2			
9h00-9h45	Session 2.10: Presentation of the short curricula development of WASCAL-Gambie	Prof. Kone	Prof. Sidat Yaffa
9h45-10h30	Session 2.11: Presentation of the short curricula development of WASCAL-Côte d’Ivoire	Prof. Kone	Prof. Konate Souleymane
10h30-11h15	Session 2.12: Presentation of the short curricula development of WASCAL-Cabo-Verde	Prof. Kone	Dr. Almeida Corrine
11h15-11h30	Coffee break and networking	Organisers	
11h30-12h15	Session 2.13: Presentation of the short curricula development of WASCAL-Burkina Faso	Prof. Kone	Prof. Zoungrana
12h15-13h00	Session 2.14: Presentation of the short curricula development of WASCAL-Benin	Prof. Kone	Prof. Adounkpe
13h- 14h	Lunch break	Organisers	
14h-15h	Session 2.15: Presentation of WASCAL short courses summary	Prof. Kone	Rapporteur
15h00-16h00	Session 2.16: Show case of UL professional training	Prof. Begedou	UL professionnel Training Director or Responsible
16h-16h45	Session 2.17: General discussions	Prof. Brice Sinsin/Prof Koné	Directors
16h45-17h	Closing remark	WASCAL Board Member SAC Chair	

Day 3			
9h-11h	Travelling Site visit	Organisers	