

WEST AFRICA AGRICULTURE PRODUCTIVITY PROGRAMME (WAAPP)
WAAPP CLIMATE CHANGE RESEARCH FORUM 1
SPLENDOR HOTEL, SANTASI; 4th - 5th September, 2013

1.0 Introduction

WAAPP Ghana developed an action plan for mainstreaming climate change adaptation actions into implementation of programme activities. The action plan is based on the West African Climate Change Adaptation framework and the agriculture sector strategies outlined within the National Climate Change Policy. Supporting the action plan is a road map, which aims at ensuring the start of implementation of action by 2014. To ensure identified actions are captured in activities for 2014, a number of sensitization meetings have been held with various stakeholders.

One of such fora was held with research scientists drawn from selected CSIR institutions on 4th and 5th September 2013. The forum was called to discuss climate change and the need for technology development and dissemination. The forum concluded with identification of priority areas for research and list of available technologies for dissemination.

2.0 Proceedings

2.1 Day one

2.1 Opening

The forum was called to order by Mr. Delali Nutsukpo of Crop Services Directorate; the facilitator of the forum at 9:30am. The opening prayer was said by Mr. Kojo Adofo Crops Research Institute (CRI) followed by a round of self-introductions by participants.

Dr. Regina Sagoe of CRI welcomed colleague participants on behalf of the Director of CRI. The welcome address was followed by short statements from Dr. Alphonsus Belani of the WAAPP Programme Coordinating Unit (PCU) and Mr. Emmanuel Asante Krobea, the Director of Crops Services. Both statements identified the increasing threats posed by climate change to sustainable agriculture productivity and production and the need to take necessary steps to address the problem. Both speakers viewed the forum as an important step towards addressing the challenges of climate change.

Mr. Nutsukpo gave a short over view of the processes leading to the forum and presented the objectives and expected outputs of the meeting as follows.

- Sensitize and create awareness
- Take stock of ongoing climate change adaptation mitigation actions
- Identify gaps in climate change research in relation to agriculture and food systems

- Create platform for future knowledge and information sharing between climate change research projects

The expected outputs from the forum are as follows

- List available climate change adaptation mitigation actions technologies for dissemination
- Agree on priority areas for the climate change mitigation research
- Agree on mechanisms for funding climate change research activities under WAAPP

Dr. Entsua- Mensah, the Deputy Director General of CSIR, delivered the official opening address. She indicated that discussions involving climate change should not be limited to researchers and policy makers alone but also farmers. She also called for a closer look at issues of ‘galamsey’. She additionally emphasized the need for work on agroforestry because of its long-term benefits of mitigating climate change effects. In conclusion she drew attention of MoFA to ensuring the involvement of adequate numbers of Agric Extension Officers to help in promoting technologies that have the potential of building resilience of operators against climate change within agriculture landscapes.

2.1.3 Technical Session

Four presentations were made on topics spanning climate science, research, initiatives, policy and experiences from on-going actions.

The following are the highlights of the presentations and some of the comments, questions and answers that followed.

2.1.3.1 National Climate Change Policy – Agriculture sector Strategy by Antwi B. Amoah EPA

Some of the key areas highlighted in the presentation include climate change impacts on socio-economic sectors, manifestation of climate change in Ghana, adaptation programs undertaken by the EPA in the Agricultural sector and the vulnerability of Ghana’s economy to climate change. The following are the thematic areas listed in the strategy

- Institutional capacity development for research and dissemination.
- Develop and promote climate resilient cropping systems
- Adaptation of livestock production system
- Support adaptation of fisheries sub-sector
- Support to water conservation and irrigation systems
- Risk transfer and alternative livelihood system
- Improved postharvest management

2.1.3.1.1 Questions, answers and comments

Prof. Adiku: ‘what percentage of GDP is lost as a result of climate change in terms of vulnerability of Ghana’s economy? I ask this because you have not stated this in your presentation’?

Mr Antwi: ‘the percentage of GDP is published in the policy Document. There are also published reports on the economics of adaptation to climate change.

Dr. Entsua: there should be collaboration between scientists and policy makers to address issues of climate change. She also called for dissemination of information from EPA to research institute and policy makers.

Prof. Adiku: ‘in your presentation you mentioned inadequate resources as a challenge. Do you have a research fund for people to contribute into when you talk about inadequate resources for climate change research’? He proposed the setting up a climate fund to make resources available for climate change research.

2.1.3.2 Climate Change research in Ghana, Progress and challenges by Dr. SGK Adiku, Dept. of Soil Science University of Ghana.

In his presentation he made mention of the need to understand climate science, what the causes of climate change are and who causes it. He also talked about carbon cycle, effects of temperature on rainfall patterns and increasing soil carbon concentration through residue management. He emphasized the need for basic and applied research and clear roles for different stakeholders as solutions to climate change.

In conclusion he proposed the need for intensified collaboration for climate change research and information dissemination either through the establishment of a consortium or formation of research teams.

2.1.3.2.1 Questions, answers and comments

Quest: Why is your research based on only carbon dioxide as a greenhouse gas but not the other gases?

Ans: this is because among the greenhouse gases it is carbon dioxide that can be measured at the moment. Secondly there is no data on the other greenhouse gases in the country.

The DDG of CSIR in contribution to the discussion supported the proposal formation of a consortium to bring together scientists, researchers and policy makers to address issues of climate change.

Mr. Nutsukpo appealed to researchers to make information available to policy makers for decisions to be taken on them. He proposed the use of policy briefs as an effective channel for getting research information to influence policy.

Prof. Adiku lamented on the ineffective or absence of land use policy for the country. He also asked for a careful look at the following

- Inadequate personnel on climate change
- When does the work of the scientist feed into that of the modeler?
- The variation of soil nutrients from location to location, its complex nature and how to move forward with it.

A participant proposed the generation of appropriate yield maps to determine the management practices suitable for each type of soil.

2.1.3.3 Promoting climate change research in Ghana by Dr. Regina Sagoe, CSIR-CRI

Dr. Sagoe's presentation focused on areas such as climate change and its impacts, using climate 'SMART' Agric to minimize impact of climate change, ongoing climate SMART Agric. research programs under CSIR and major challenges to implementing climate 'SMART' agricultural research in Ghana.

2.1.3.3.1 Questions, answers and comments

Prof. Adiku in a comment emphasized the need for a focus on gender dimensions of climate change impacts since different genders (women, men and children) are likely to be affected differently.

2.1.3.4 Mainstreaming climate change into programme implementation by Dr. Bredu, Forestry Research Institute of Ghana (FORIG)

Some of the key areas highlighted in Dr. Bredus presentation include; climate change related projects currently being undertaken by FORIG, causes and effects of climate change, carbon use efficiency, carbon cycle of a forest and the REDD plus project.

2.1.3.4.1 Questions, answers and comments

Adiku: 'what reward does the FORIG give to people who are into planting of trees in this country'?

Dr.Bredu: 'at the moment nothing is given but Ghana is about to execute a programme that will provide financial assistance to people who undertake planting of trees'.

2.1.3.5 Group Work

The participants at the workshop were divided into two groups A and B. The tasks assigned to the groups were as follows:

Group A: Discuss on going climate change related research, identify existing gap and proposed priority research areas for action

Group B: Identify and list available climate change adaptation actions/technologies that have that can be disseminated.

The first day of the meeting ended at 4:50pm

The meeting ended at 4:50pm

Day two, September 5 2013

2.2 Opening

The meeting started at 9:10 am with opening prayer by George Prah of Crop services Directorate. This was followed by a brief caption of the previous day's activities. The Director of CSIR-CRI Rev. Hans Adu-Dapaah joined the forum and chaired the day's proceedings.

2.3 Presentation and discussion of Group reports

The two groups presented the results of their group discussions followed by plenary discussions.

After the discussions it was agreed that the groups reconvene to sharpen their proposals to be more focused. Below are the list of priority research areas and available technologies/adaptation actions for dissemination

Priority research areas

- Generate and acquisition of data set for modeling in crops and animal production systems under increasing temperature, CO₂ and reduced rainfall amounts
- Ground truthing for efficient early warning systems in Ghana for crops and animal production
- Calibration and validation of existing models (DSSAT, APSIM, Roth C, Century etc.) under climate change scenarios
- Ideotype modeling for climate change adaptation
- Biodiversity changes under temperature increased, reduce rainfall, heat tolerance, drought resistant, flood tolerance, pest and disease tolerance
- Management of grassland systems in changing climate: the search for practical solution.
- Promoting Science-policy interface
 - I. Training of scientists in developing policy briefs
 - II. Research fund
 - III. Short training on modeling with breeders

Adaptation actions for dissemination

Weather forecasting

- Efficient Early Warning Systems

Good models that give accurate, timely predictive information and specific to communities.

Rain forecasting

Train farmers on how to use the models

Sensitization

Soil issues

- Soil erosion control methods
- Tillage methods
- Soil and water conservation methods

e.g. planting of Vertivar grass to slow down the impact of run-off erosion

- Tied ridging
- Soil amendments and Biochar use
- Sawah rice system
- Promote use of soil testing kits

Crop Issues

- Drought tolerant varieties
- Varieties resistant or tolerant to pests and diseases
- Seed and nutrient priming
- Use various maturity groups of varieties
- Flood or drought tolerant pasture species
- Post-harvest technologies
- Triple bagging in cowpea and grains and cereals

Animal Issues

- Promote indigenous poultry, goats, sheep, crossbred small ruminants that are adapted to local conditions
- Technologies to disseminate reduction in keet mortalities in guinea fowls
- Promote feed conservation
- Establishment and management of fodder banks
- Promote crop residues as feed
- Crop/livestock integration

Food Issues

- Post-harvest technologies such as convenient foods production, alternative flours, processing and value addition of root and tuber crops, cereals, fruits and vegetables
- Promote use of renewable energy (e.g. solar driers).
- Nutrient enhanced varieties e.g. Orange flesh sweet potato promotion
- Sensitization on food safety and nutrition

Water

- Irrigation, drip and sprinkler
- Promote use of renewable energy systems in irrigation (solar pumps)
- Field water harvesting (tied ridges, square bonds, pits systems, stone filtering systems)
- Bore holes, small dams and dugouts, wells
- Technology for locating high level water table
- Afforestation around water bodies

Fisheries

- Aqua culture
- Cage production
- Promotion of high prolific fish breeds
- Formulated feeds

Farm or field School

- Encourage its establishment in various communities and develop curriculum for the various technologies and knowledge transfer
- Encourage use of innovative platform concepts

2.4 Development of Roadmap

- Discuss the possibility of using ‘CARGS’ funding mechanisms to support priority climate change research actions
- Possibility of Public-Private-Partnership should be explored
- The forum should assume the status of a Climate Change consortium which should meet regularly to share information.
- Current Research proposals for funding under the ‘NCOS’ should be reviewed where appropriate to capture climate change strategies.
- Representatives at forum should give feedbacks to their Directors to be abreast with issues discussed.

2.5 Closing remarks by Dr. Hans Adu Dapaah

He thanked the participants for their contribution to the workshop and expressed the hope that representatives at the meeting will brief their colleagues at their work places on the outcomes of the workshop.

The meeting ended at 1:20pm with closing prayer said by Dr. Bredu of FORIG.

3.0 List of Participants

Name	Institution
Alhassan Lansah Abdulai	CSIR-SARI
Abubakari Mutari	CSIR-SARI
Patricia Obeng-Darko	CSIR-CRI
Antwi B. Amoah	EPA
Stephen Yeboah	CSIR-CRI
Dr. Regina Sagoe	CSIR-CRI
Edmund Osei Owusu	CSIR-PQRRRI
Dr. Edward Yeboah	CSIR-SRI
Chris M. Asare	CSRI-SRI
Eric Haver Quaye	RS
D.K. Asare	BINARE/GAEC
J.Y. Asibuo	CSIR-CRI
Kwadwo Adofo	CSIR-CRI
Bright Boakye Preprah	CSIR-CRI
Dr. C. Domozoro	CSIR-ARI
Dr. E.K. Adu	CSIR-ARI
Dr. B.O. Antwi	CSIR-SR
Dr. Charles Tortoe	CSIR-FRI
Dr. Stephen Adu-Bredu	CSIR-FRI
Peter Addo	CSIR-FRI
Dr. Entsua-Mensah	CSIR, HEADQUARTERS

Dr. A.K. Belani

WAPP, PCU

Emmanuel Lanor Omenyo

CSIIR-CRI

Prof. S.G.K. Addiku

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George Prah

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