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Research  
Capacity  
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Report of the training workshop on  
**HYDROLOGICAL/WATER ALLOCATION MODELLING IN THE VOLTA BASIN  
WITH MIKE BASIN**



*ORGANISED BY*  
**Sustainable Development of Research Capacity based on the GLOWA  
Volta Project**  
GIS Laboratory, University of Cape Coast  
Cape Coast, Ghana  
27 – 28 SEPTEMBER 2010  
(RESOURCE PERSON: DR. BARNABAS AMISIGO)

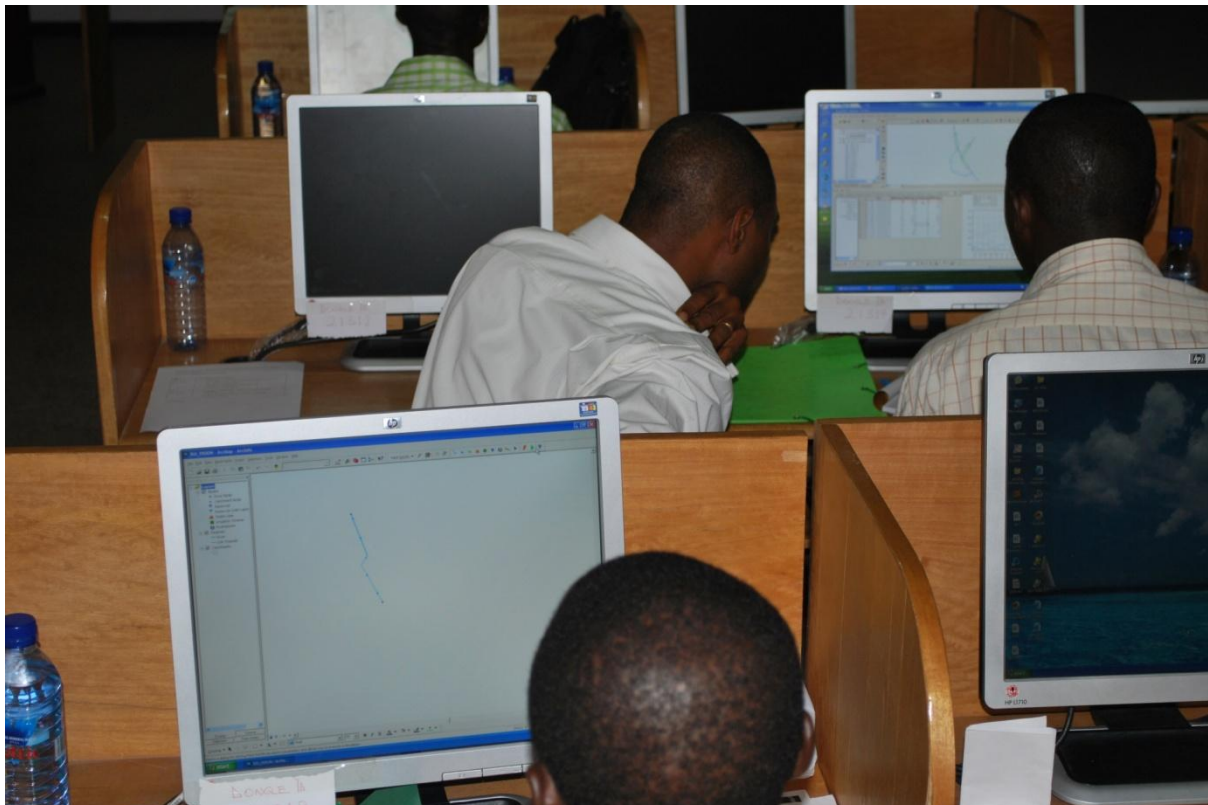
## Day I

**9:00GMT:** Arrival and introduction of participants and resource person for the programme. Dr. K. Nyarko started the workshop with a brief welcome address and information about the logistics, additionally introduced Dr. Barnabas Amisigo as the resource person. The official opening of the workshop was done by Dr. Barima Antwi (Head, Geography and Regional Planning, University of Cape Coast). In his welcome address, Dr. B. Antwi touched briefly on the essence of water, its allocation and the role women play in the use of water.

Dr. Barnabas Amisigo (the resource person for the workshop) started the workshop with a brief discussion on the outline of activities of the workshop:

- Simulating Water Allocation and Water Use Scenarios in River Basins;
- An introduction to water allocation and management modelling
- Introduction to hydrologic modelling in GIS,
- The introduction to and use of the MIKE BASIN software, and
- The practical session on water modelling using MIKE BASIN.

After the brief introduction on Water Allocation, the attention shifted to a practical tutorial on the use of MIKE BASIN. The resource person supplied practical tutorial data and other relevant materials.



**09:25GMT:** In this practical tutorial, participants were taken through the main tools and functions of the MIKE BASIN platform (an extension on the ArcGIS Platform). Using a schematic approach, participants were assisted by the resource person to:

- Digitize catchments.

- Create River Tributaries, Reaches and River Nodes.
- Create Diversions, Users, Reservoirs and Hydro Stations.

According to the resource person, the features outlined above are the major building blocks for modelling in the MIKE BASIN platform.

After creating the building blocks and indicating their properties/functions, a simulation run was done to observe how the model works. The run by some participants encountered errors, the resource person explained the reasons behind the errors in the running model and assisted them to solve and have a running model. Diversions or Bifurcations nodes (as in MIKE BASIN) were created to spilt flows in rivers.

**14:25GMT:** Before a running model is obtained, the resource person noted that, it was very relevant to have a perfect understanding of the Level-Area-Volume characteristic and other features of a Reservoir to model it correctly.

**16:00GMT:** The day's session ended with running model designed by participants.

## **Day II**

**09:00GMT:** The second day's session commenced with a recap of previous knowledge on MIKE BASIN and a re-visitation of models designed and run in MIKE BASIN.

The actual activities outlined for the day involved the use of practical data time series prepared for the day's assignment. Exercises on MIKE BASIN – White Volta water allocation modelling were given to participant to undertake. This gave participants a better understanding of modelling in MIKE BASIN, and given a policy dimension, organizes the data by way of modifications in the data so as to take care of errors and come out with a running model.

This practical exercise extended till lunch time.



### **13:15 GMT: Lunch Break**

### **14:15GMT: Open Forum – Comments and Recommendation**

This session welcomed the views of participants on the workshop.

A participant expressed the need to get software for personal use and practise on laptops of participants so as to ensure effectiveness and a practical understanding and application learnt from the workshop.

Another participant, in commenting on the number of days used for the workshop, requested that a minimum of three (3) days be used for effective training.

It was requested that organisers of the workshop provide participants with practical tutorials of the software that was used for the workshop.

It was also suggested that the tutorials could preferably be in video form to make it easier for participants to be more enlightened and also learn some functions by themselves by watching these video tutorials.

A participant thanked the resource person for a well prepared and digested presentation. According to him, in order to enhance the practical sessions, the last day should be characterised by using practical case scenarios for groups of two (2) or three (3) to work on a case study, use practical cases to solve problems and come out with challenges. This could be followed by a presentation of findings and challenges faced from the case study and the needed solutions addressed. This he believes will make the practise stick better.

A request was made for the list of participants to be emailed to everyone for better networking amongst participants.

In addition it was suggested that documentation be sent to participants prior to the workshop to aid appropriate preparation.

The resource person indicated that an attachment mail consisting of the working papers would be sent to all participants. He thanked the participants for their attention and corporation and added that the workshop has been very productive with the help of participants.

He then took the last session to present to participants a Four (4) – Slide presentation on the Volta Basin Water Allocation System.

The workshop ended at **15:48GMT**.

## LIST OF PARTICIPANTS

No	Name	Institution
1	Geophrey Anornu	Civil Dept-KNUST
2	Stephen Maclean	GIDA, Accra
3	B.O. Antwi	CSIR-Soil Research Institute, Kumasi
4	Thomas Atta-Darkwa	DAE, KNUST, Kumasi
5	Frederick Logah	CSIR-Water Research Institute, Accra
6	Barnabas Amisgo	CSIR-Water Research Institute, Accra
7	Boateng Ampadu	UDS FAS, EES, Navrongo
8	Mawuli Lumor	Water Resources Commission, Accra
9	Justice Inkoom	UCC, Cape Coast
10	Harris Andoh	CSIR-Soil Research Institute, Kumasi
11	Josuah Owusu Sekyere	Dept of Agric Engineering, UCC, Cape Coast
12	Emmanuel Obuobi	CSIR-Water Research Institute, Accra
13	Benjamin Kofi Nyarko	GLOWA-Volta Project, Accra
14	Edward k. Ackom	HSD-Accra
15	D.S. MacCarthy	UG-Agric Research Institution
16	Nicholas H. Okyere	AVRL/GWCL-Tema
17	K.Kankam Yeboah	CSIR-WRI, Accra
18	Gerald Forkuor	IWMI-Accra
19	Justice Camillus Mensah	DGRP-UCC
20	Mr.Vincent Gbedzi	University for Development Studies-Tamale
21	Emmanuel A. Mensah	DGRP-UCC
22	Sam Amoah	Dept of Agric Engineering, UCC, Cape Coast