

# WIMEA-ICT

Improving Weather Information Management in East Africa for effective service provision through the application of Suitable ICTs - Newsletter

ISSUE 005- DEC, 2015

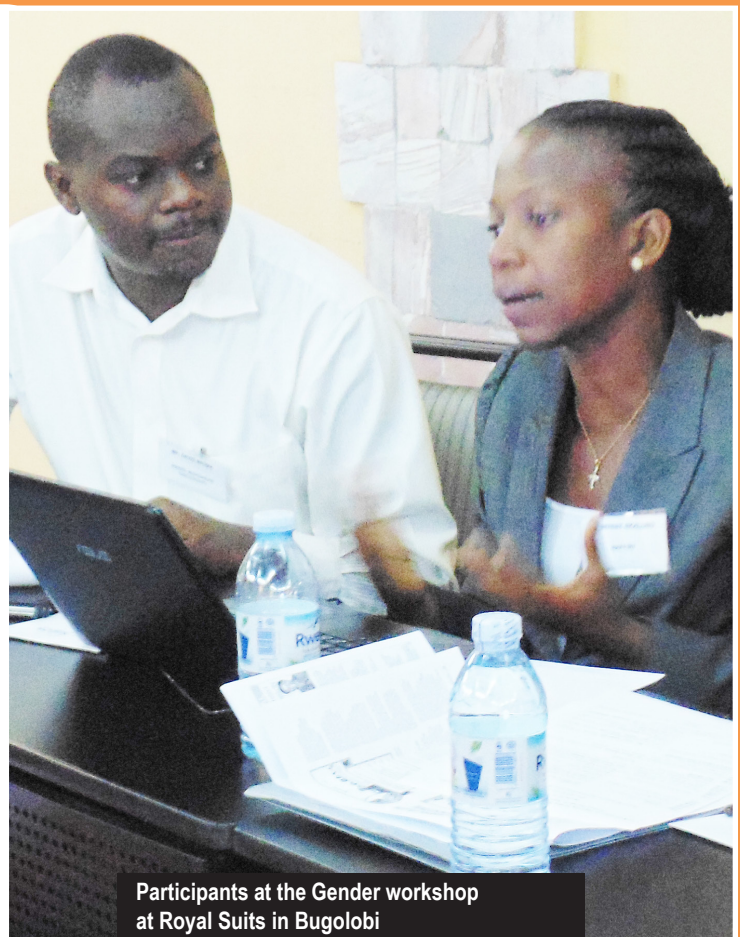
# GENDER

## and its role in weather information management and dissemination

**O**n June 24, 2015, the NORAD-WIMEA-ICT project held a workshop on Gender at Royal Suites Hotel in Kamala. Gender is a key aspect of the project; both in the participating institutions and at national level. The purpose of the workshop was to increase the understanding of gender-related issues as they relate with weather management and climate change as well as to promote gender awareness among key stakeholders.

The workshop was attended by participants from several institutions, schools, professionals and the media. Some of the facilitators included: Assoc. Prof. C. Obura, Principal, College of Computing and Information Sciences, Makerere University, Dr. Julianne Sansa-Otim, Makerere University (in the context of the project), Dr. Agnes Rwashana Semwanga, Makerere University (in the context of the gender component).

Others were, Assoc. Prof. Josephine Ahikire,  
(Continued on page 2-3)



Participants at the Gender workshop at Royal Suits in Bugolobi





Participants at the workshop

(From page 1)

Dean, School of Women and Gender Studies, Makerere University (Introduction to Gender Concepts). Mrs. Annet Kabarungi, Senior Gender Officer, Ministry of Gender, Labor and Social Development (Gender issues in Meteorology and Climate Change – as a Case Study), Mrs. Brenda Kifuko Malinga, UN Women Consultant, Ministry of Gender, Labor and Social Development (How to Promote Gender Awareness Among Stakeholder) and Mr. Fredrick Immanuel Kindi, School of Women and Gender Studies, Makerere University among others.

Through this workshop, it was discovered that the WIMEA-ICT project needs to have firm strategies on gender sensitization because resource mobilization in rural areas gives preference to men as opposed to women.

Weather information should put the plight of marginalized groups such as women into consideration. The question therefore is; are there strategies in place to bring marginalized groups on board? Without putting gender into proper perspective, the WIMEA-ICT project's objective will be 'lost'.

Associate Prof. C. Obura opened the workshop and was grateful that women incetivised through this project. However he wondered whether there

were any strategies for men in case they found themselves in a vulnerable situation concerning weather or agricultural related issues.

### What is gender?

Gender is not the study of women emancipation. It is the study of seeking a balanced relationship between male and female. However, in a bid to empower women so as to get equal opportunities with men, the men have become threatened and

in some instances hostile. Therefore, gender experts and activists need to still draw strategies to empower men as well in order to maintain and sustain a levelled gender ground.

The WIMEA-ICT project therefore has to have budgetary considerations at planning level to ensure that men are also engendered. The project must put into account the

gender issues for both men and women in relation to the available resources. WIMEA can attain gender balance by having equal opportunities for both women and men in allocation of available resources and opportunities. For example the 1.5 point entry privilege given to the girl-child as they join higher education in Uganda has promoted the education balance between men and women in Uganda. This can be maintained until such a time

**“ Uganda needs to generally develop ICT systems that enable effective sharing of information; systems that promote gender awareness to these different groups of people in our society ”**



when women and men are advantaged similarly in society.

### Gender issues and climate change

While talking about weather and climate change in Uganda, it is important to note that most of the women who are actively involved in agriculture in rural Uganda are illiterate. Is it possible for the illiterate woman to get the meteorologist information as compared to the literate? During this workshop, it was pointed out that it is indeed possible through proper empowerment of women with the right tools and resources. The existing weather information, especially seasonal forecasts, is not sensitive to gender because it doesn't consider the unique roles played by men and women.

Some women, especially in rural settings, do not plant trees as a source of income. A survey was conducted under the School of Women and Gender Studies, Makerere University, and one of the findings was that women do not plant trees on their marital land because they are not sure if they will last in marriage long enough to harvest the benefits.

Apart from the men and women, it is also important to get children involved in these weather information dissemination processes because climatic information is for all. Information should be packaged in a way that it is well and clearly understood by minors such as children for collective involvement.

(Continued on page 4-5)

## EDITORIAL

# Let us keep our gender lenses on

**C**limate change is gender neutral as it affects both men and women. It's effect on women is evident. For instance, it increases food insecurity and compounds access to water challenges, which roles are the responsibility of rural women. The effective handling of climate change in general and weather information management particularly requires strategies which consider marginalised groups such as women. Women; especially those in rural areas are marginalised in issues like, land ownership, decisions on land use as well as which TV or radio programme to access in the family. Some of the strategies to increase access of weather information for women include disseminating information during community meetings, including school children in information sharing as well as the use of ICT systems that can be accessed on mobile phones need to be developed. The WIMEA-ICT project appreciates the role of gender in weather information management. Join me in this issue as we discuss the lessons

learnt from the gender sensitisation workshops held in Uganda, Tanzania and South Sudan. Until next issue, let us keep our gender lenses focused.



**Dr. Julianne Sansa-Otim**  
(PhD)  
Project Principal Investigator



# Community dialogue key in articulating gender issues

(From page 3)

## Promoting gender awareness among stakeholders - Agriculture (land use), Environment, Fisheries)

Through community dialogue, women can now articulate their issues in some areas. Youth groups have also come up with community solutions. In Some communities, Female Genital Mutilation (FGM) is medically done in order to preserve culture and also to provide health services at the same time. Uganda has made strides but more can be done.

## What more can be done in the meteorology field?

The number of meteorologist in Makerere University and Uganda at large is still low and it is even

lower for women. This shows a need for more capacity-building at partner institutions and on different levels of training.

Information sharing and advocacy among stakeholders should be emphasised. There is another challenge: there is no specific information on how weather information can be accessed. The Uganda National Meteorology Association (UNMA) has a challenge to ensure more people, especially in the rural settings, have access to weather information. Hopefully WIMEA-ICT can assist in this area by developing and packaging information for communities in time.

Structures need to be put in place from the top to the grass root level. UNMA also needs to establish partnerships

of collaborations towards community developments.

In Uganda, meteorology training appears to be silently taken on, and is only taken seriously once a tragedy occurs. There is minimal disaster preparedness in any given situation. Unfortunately most organisations and institutions do not consider weather information to be important to their activities / sectors. Gender desegregated data is also minimal. We need to have statistics to identify the gaps with strategic evidence.

During the course of this project, some PhD students should be sent out to various organisations for industrial training. This will help organizations to appreciate and understand the use of weather



Participants at the workshops

“ Apart from the men and women, it is also important to get children involved in these weather information dissemination processes because climatic information is for all ”

information for the betterment of the country and disaster preparedness among other benefits.

There is World Meteorology Organization (under the United Nations Organisation) in charge of meteorology and hydrology whose syllabus is from Geneva. This should be utilized. ICT is a wonderful tool but there is need to have a concrete way on how it can improve weather information communication in meteorology because weather information decays very fast. It was recommended that UNMA work with WIMEA-ICT researchers to upload any climate updates in a timely manner.

## Who makes land use decisions?

Sensitization of both men and women on the benefits of

growing improved crop varieties such as improved maize is paramount. Who benefits in cases where land is rented? It is usually the men. Key informants should ensure that women are included in decision making. There is need to know the seasonal characteristics to ensure both men and women have key information. This can be done through churches, mosques and other places of worship as well as through SACCOS.

Information should be translated to the community on seed quality in relation to weather and climate of a given area. Does the community know when to plant what?

Post-harvest handling, storage and marketing are necessary with a bias towards women since they do most of this work at village level and are most disadvantaged in terms of information access. Seeds selection before rain should be carefully communicated to the farmers, clearly showing how it will improve the quality of their produce. In addition, seeds should be affordable and they should be able to be planted again for sustainability purposes.

Uganda needs to generally develop systems that enable effective sharing of ICT information; systems that promote gender awareness to these different groups of people in our society.

To this end, presenters and participants were encouraged to emphasise training and awareness: Meteorologists should be more pro-active as practitioners through community/school awareness campaigns. New proposals should be written to deal with how to transform ideas shared in the workshop into actual results.





# DIT hosts research seminar on High Performance Computing

**D**IT organised a research seminar titled “The Application of High Performance Computing (HPC) in Africa with a case study in South Africa.” This event took place on July 17, 2015. More than 70 participants attended the event that included University of Dar-es-Salaam (UDSM), Open University of Tanzania (OUT), St. Joseph University in Tanzania (SJUIT), Muhimbili University of Health and Allied Sciences (MUHAS), Dar-es-Salaam Institute of Technology (DIT), and University of Dodoma (UDOM). A good number of female students from UDSM, SJUIT and DIT were invited to encourage women joining engineering fields, especially the computational related subjects.

DIT’s Principal Prof John Kondoro made welcomed participants. All the presentations and some photos are available on (<http://coeict.ac.tz/hpctalk/>.)

It was noted that the biggest challenge could be that most prospective users lack the basic knowledge of HPC, thus there is need to start some trainings. Prof. Cress noted that in SA, HPC usage has the following...

Damas Makweba, High Performance Computing Coordinator at DIT explaining to participants about the HPC facility available at DIT



## The need for HPC

- 1. HPC usage is encouraged through provision of research funds to researchers**
- 2. Her experience was that it is easy to run a messy code on HPC than asking researchers to re-write good optimised codes for parallel programming.**
- 3. CHPC would be glad to ask their researchers to assist Tanzania colleagues working in the same field to acquire HPC skills or use specialized software available at CHPC.**
- 4. They will look at the possibility of extending their summer school to Tanzanian students**

# WIMEA-ICT FORUM ON GENDER & CLIMATE CHANGE ADAPTATION

This forum took place on Thursday October 1, 2015 at ASA Lounge, Dar-es-Salaam Institute of Technology. The objective of this forum was to increase awareness on climate change adaptation in relation to gender issues. It was attended by 30 participants out of which 15 were from DIT and 15 outside DIT. Here are a few highlights from presenters...

“

1

## DR. JULIANNE SANSA-OTIM, WIMEA-ICT PROJECT INVESTIGATOR

The WIMEA-ICT project was started to improve weather information management through the application of suitable ICTs. Out-dated weather information infrastructure, insufficient number of meteorological personnel with limited career development in the field and unresponsive curricula created a need for the WIMEA-ICT project. Currently the project has 8 PhD students, 2 (1 man and 1 woman) of these are Tanzanians researching on Weather Information Modelling and Density on Weather Stations and 13 more are expected to be Master students.

”



2

## MS HELLEN MSEMOM, FROM THE TANZANIA METEOROLOGICAL AGENCY



“

Gender and climate change matter a lot as climate affects both males and females. Women are more vulnerable to climate change because of their roles in reproduction and community productivity. Tanzania Meteorological Agency (TMA) spread weather disaster information through “Disaster Committee” at the village level and also use Community Radios as well as through the TMA website. The challenge for weather information to reach women in rural areas can be resolved through the following ways;

(To page 8-9)



(From page 7)

- a) Understanding the needs and use of weather and climate information
- b) Developing programs to benefit both men and women
- c) Developing mechanism at the local level to reach women
- d) Developing mutual resources used at household level
- e) Developing educational and outreach programs in schools and rural communities

As long as access to information is a problem to women especially in rural areas, it was suggested that WIMEA-ICT Project should capacitate academic institutions so as to solve these and other problems facing TMA. It was reported that the WIMEA-ICT project will improve access to weather information as this solution will be customized in all countries involved in the project.

”



3

### DR. AMOS NUNGU, PROJECT COORDINATOR AT DIT

“ The Masters Program in Computational Sciences and Engineering at DIT is a product of WIMEA-ICT Project. This course started in November 2015. So far the course has the following admission status: 27 applicants, 25 are males and 02 are females and 05 scholarships to DIT staff. Engendering the curriculum will be dealt with during the curriculum review exercise that will happen after the program has run for the first year.

”

### DIT PRINCIPAL (PROF. JOHN KONDORO)

Prof. Kondoro informed members about the affirmative actions DIT has been making to encourage females to join Engineering studies. Some of the actions include; minimum qualification for females while the males compete for cut off points, conducting pre-entry programs which are sponsored for females, conducting female sensitization in secondary schools upcountry, every year secondary students have been sensitized to join DIT for their future studies.

4



5

### DR. AGNES SEMWANGA, THE GENDER FOCAL PERSON ON THE WIMEA-ICT PROJECT



Dr. Agnes Semwanga (Makerere University) giving her presentation at the gender workshop in Kampala. Below, at a DIT workshop in Dar-es-Salaam, Tanzania. Right, Dr. Julianne Otim, Project Principle Investigator

“ The effect of climate change on women is more evident as it increases impact on food security and water access. Therefore there is need to ensure access to timely and accurate information on climate change, the use of language that women understand and gender equality on staff employment in the meteorological industry. The current number of PhD female students has increased as follows: There are 2 in Uganda and 1 in Tanzania. There is need to look at the meteorological curriculum to ensure that it is engendered (looking at the needs of both male and female) and to encourage women to study science subjects at primary and secondary school level. Some of the gender specific activities in the project are; gender networking events among the PhD students, gender workshops to engender curriculums, gender sensitization workshops, motivational talks where PhD students will meet their role models. The component will also provide incentives for female students who get pregnant during their training programs.

”





# WIMEA-ICT takes Curriculum Dev't to University of JUBA



Dr. Julianne Sansa-Otim the Principal Investigator introduces the WIMEA-ICT project

A curriculum development workshop was held at the University of Juba on August 18-19 2015. At this workshop, Dr. Julianne Sansa-Otim the Principal Investigator introduced the WIMEA-ICT project to the participants including the planned project activities as well as those so far conducted emphasizing the importance of the gender factor in the project.

During his presentation, Dr. Bafouka, the former Dean of the College said, "The curricula of the college of Applied and Industrial Sciences in the 1<sup>st</sup> and 2<sup>nd</sup> year were previously reviewed and the workshop was now to consider the 3<sup>rd</sup>-5<sup>th</sup> year curriculum for the Department of Meteorology."

Participants agreed to also look at the course contents for both programmes belonging to the Department of Mathematics and Physics which are fundamental for the meteorology specialization. The curricula for both Mathematics and Physics

were presented by Mr. Oliha and Mr. Ben Salibaa respectively. The workshop unanimously agreed that the specialization courses start from the 3<sup>rd</sup> year. It was agreed that it would be easier to relocate Meteorology-courses than those based in the other departments.

The workshop worked on the draft to improve it and it will later on be presented to the stakeholders who will also give their view on the drafted curriculum that will be presented to the Dean and stakeholders in another workshop to be held, after which the curriculum will be finalised. It was agreed that the following courses be considered as practical: Tropical Meteorology, Meteorological Instruments and Observations methods, Weather Analysis, Numerical Weather Prediction, Computing and Programming in Meteorology, Aviation Meteorology, Geographical Information System, Advance Remote Sensing Agrometeorology, Hydrometeorology, Environmental Pollution and Control.

## Gender sensitization Workshop University of Juba chapter

This workshop was held on August 20 and was attended by 26 participants. Ms Faiza Ahmed the gender focal contact person from the University of Juba gave a presentation on the gender situation in South Sudan. Dr. Agnes Semwanga the WIMEA-ICT project gender focal person from Makerere University made 2 presentations on key concepts of gender. This was followed by group discussions on how the WIMEA-ICT project can contribute to gender promotion at the University of Juba. The recommendations made were;

i) Discuss with the Vice Chancellor the possibility of recruiting 2 females and 2 males who will benefit from the project's MSc. scholarships and return to work at the Department of Meteorology

through making advertisement for scholarship awards in the department of Met with special emphasis on female candidates.

ii) Administration to establish a department to oversee gender related issues at the University.

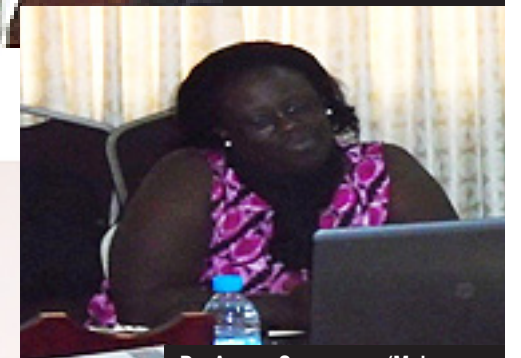
iii) Establish mentorship programs at the college/ department levels for both staff and students.

iv) Make use of the partnership to build capacity and support teaching and learning (e-learning) of the Met. Department at the University.

v) Continuous engagement of physics/math/computer science staff in teaching meteorology.



Ms Faiza Ahmed the gender focal contact person from the University of Juba



Dr. Agnes Semwanga (Makerere University) the WIMEA-ICT project gender focal person at the workshop in Juba



Dr. Bafouka, the former Dean of the College



# HELLO BERGEN, HERE WE COME!

The WIMEA-ICT sponsored Phd students spent their first semester at the University of Bergen from August 1, to December 20, 2015 as part of their training. During their study, the Geophysical Institute at UiB (University of Bergen) was their administrative host. The students share their experiences in Bergen

## I am ahead in Advanced Statistics for Climate Research

**ISAAC MUGUME**  
- MAKERERE  
UNIVERSITY

Isaac Mugume, one of the Ph.D students supported by WIMEA-ICT project reached Bergen, Norway on August 5, 2015. His travel was facilitated by WIMEA-ICT project and it is part of the project's plan to enable him obtain exposure in state-of-the-art facilities and experiences. The experiences will make the PhD project a success. He is thus at University of Bergen (UiB) as a guest student. Thanks to the collaboration between UiB and Makerere University.

At UiB, he is enrolled for three courses: (1) Theory and ethics of Science, (2) Fluid mechanics and (3) Physical climatology. "These courses will advance my Mastery of Meteorology, a discipline I have decided to specialize in. This far in Bergen, I have already completed a course in Advanced Statistics for Climate Research and attended a group meeting on experimental meteorology. I also presented my study concept and secured a resourceful person, Dr. Micheal Mesquita. I participated in the transfer of the WIMEA-ICT prototype Automatic Weather Station from Prof. Joachim Reuder's garden to Geophysical Institute.



Isaac  
Tugeme in  
Bergen

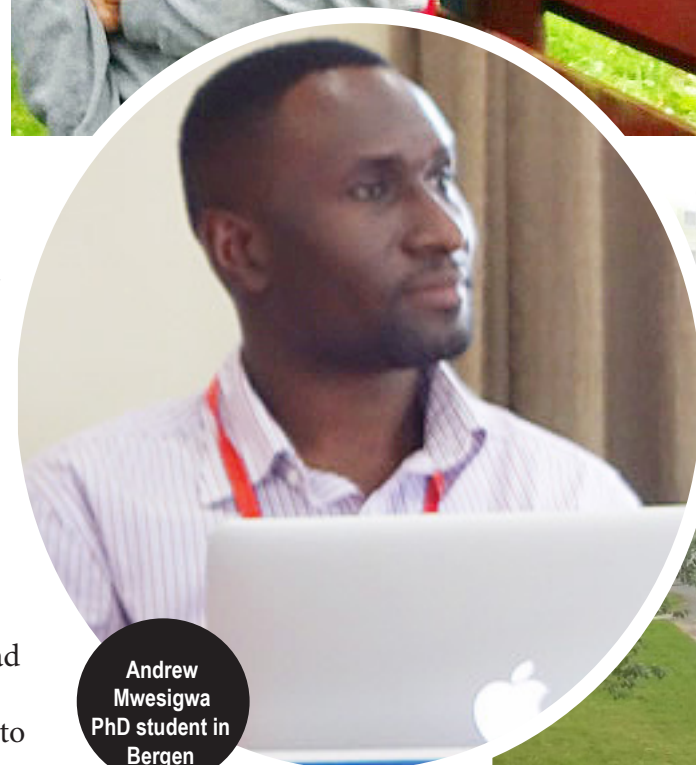


Mary (R) with  
other students  
during the Fantoft  
Christian Union  
lunch

## A lesson in time keeping

**ANDREW MWESIGWA** -  
MAKERERE UNIVERSITY

I fidgeted with the door and then in a split-second the 'Bybanen' left. A light train in Bergen is commonly referred to as a 'Bybanen'. I had to wait for the next train, which fortunately came 10 minutes later. It was a lesson about time keeping. In Bergen, just like other cities in Europe, public transport is organised and on time most of the time. Whereas in Kampala where I can easily find public transport at any time in most parts of the city, in Bergen missing a train or bus can mean being late for a lecture or an appointment! I have had to download and learn to refer to the 'Skyss reiser' mobile app in order to plan my journeys according to the online updated train and bus timetable.



Andrew  
Mwesigwa  
PhD student in  
Bergen



The Gym  
outside Block B  
at Fantoftn



# I am already running some experiments

**TRIPHONIA JACCOB NGAILO -  
DAR ES SALAAM INSTITUTE OF TECHNOLOGY**

I arrived in Bergen on August 1, 2015. I carried out the necessary registration as required by the University; like student registration, the permit card to the police, and getting the TB vaccination. All these were done successfully.

From August 11-14, I attended the Advanced Statistics course in 'R' Statistical Software. It was a four-day intensive course of having lectures and practical sessions on how to use 'R' in solving statistical problems. On August 20, 2015, I attended a research meeting about Experimental Meteorology. I am currently attending the Theory and Ethics of Science course running from September 14 to October 2, 2015. This course is mandatory for Ph.D students, especially in scientific study.

I have successfully installed the WRF and WPS on my laptop. I am now running some experiments. I am also analyzing extreme events using 'R' statistical software. I appreciate the WIMEA-ICT project for the support and warm working relation with fellow Ph.D students.



Triphonia  
in Bergen



# There are countless opportunities here

**MARY NSABAGWA-MAKERERE  
UNIVERSITY**

Bergen is surrounded by Rocky Mountains and rivers, creating a magnificent scenery. The long days of light enable me to enjoy the scenery until 10:00 pm. The sun's warmth competes with the cold. Nature is well-supplemented with good roads, nice people, an expensive and yet high quality of life. The sky is the limit when it comes to exploiting the countless opportunities Bergen presents.



# I BROUGHT THE SUN TO BERGEN It is a beautiful city

**DOREEN TUHEIRWE-MUKASA FROM  
MAKERERE UNIVERSITY**

Coming to Bergen had a sense of déjà vu for me. Coming to live in a student house, putting on heavy jackets, running to be on time to catch the light rail (Bybanen)

that is on schedule, keeping time for all appointments, staying up late to complete class assignments, being in a class as an only female student all reminded me of my masters in Netherlands.

I had been warned about the weather, raining all the time, but incidentally, it seems like I came with the sun. The rain has not been as bad as I expected. The natives also acknowledge something different about the weather this year! The cost of living, however, is quite high. Many a time, I have had to resist the urge to convert the prices of items to Uganda shillings, lest I fail to buy anything!

The orientation week for International students was very thorough, and all details for

students to settle in as fast as possible are handled. I was impressed by the time and care given by the administrators to answering all sorts of questions that students had. My professors are very passionate about the subjects they teach, my classmates were withdrawn at the start, but are warming up to

me. In both of my classes, we are a total of four students! The assignments, however, are quite involving and very time consuming. I have met some of the Ugandans living in Bergen, through a get-together organised by those who have been here for some time, and it is quite comforting to know that I am not alone here. There is someone to ask for advice, help or otherwise. Bergen is a beautiful city.



Doreen  
Tuheirwe

“I had been warned about the weather, raining all the time, but incidentally, it seems like I came with the sun. The rain has not been as bad as I expected”



# WIMEA-ICT: Improving **W**eather **I**nformation **M**anagement in **E**ast **A**frica for effective service provision through the application of suitable **I**CTs

UNIVERSITETET I BERGEN  
*Geofysisk institutt*



# Contact us

## Makerere University

Dr. Julianne Sansa Olin  
A.C. Head of Department  
Networks

School of Computing and IT,  
College of Computing and IS  
Makerere University,

P.O. Box 7062 Kampala  
Uganda  
Tel: + 256 414 540 626  
Fax: + 256 414 540 620  
Email: sansa@cit.ac.ug  
wimea@cit.ac.ug

Website:  
<http://cit.mak.ac.ug/cit-staff/userprofile/sansa.html>

## University of Juba

Ben Samuel Khemis  
Head, Department of Physics,  
College of Applied and  
Industrial Sciences.

Juba, South Sudan

Tel: +249 83483500  
Fax: +249 83433566  
Email: info@juba.edu.sd  
juba17@gmail.com

Website:  
<http://juba.edu.sd>

## Dar-es-Salaam Institute of Technology

Amos Nungu

Dar-es-Salaam Institute of  
Technology

P. O. Box 2958,  
Dar-es-salaam, Tanzania.

Tel: +255-(0)22-2150174  
Fax: +255-(0)22-2152504  
Email:  
amosnungu@dit.ac.tz

Website:  
<http://www.dit.ac.tz>

## University of Bergen

Prof. Dr. Joachim Reuder

Deputy Head of Department  
Geophysical Institute,  
University of Bergen

Allegaten 70  
N-5007 Bergen Norway

Tel: + 47 55 58 84 33  
Fax: + 47 55 58 98 82  
Email:  
Joachim.Reuder@gi.uib.no

Website:  
<http://www.uib.no/personer/Joachim.Reuder>