No. 004 JAN - MAR. 2018

WASCAL
West African
Science Service Centre on
Climate Change
and Adapted Land Use

WASCAL climate news

THE OFFICIAL NEWSLETTER OF WASCAL

Outstanding contribution towards combatting climate change in West Africa

University of Lome' confers Honoris Causa on Dr. Kraus of BMBF . Page 4

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FROM THE EXECUTIVE DIRECTOR'S DESK

I would like to take the opportunity to congratulate Dr. Wilfried Kraus of the Federal Ministry of Education and Research, Germany (BMBF) as Docteur Honoris Causa for his outstanding contribution towards the fight against climate change in West Africa. This is a well-deserved recognition. His passionate dedication; unflinching support and quality leadership in tirelessly spearheading the activities of WASCAL in West African these past few years are commendable.

The just ended quarter witnessed packed activities at both our Research and Capacity Building Departments. More students graduated from the University of Lome', Togo and Universite d'Abdou Moumini, Niger. These successful graduations are what serve as testimony to our commitment to training the next generation of experts in climate change with dedication to becoming one of Africa's leading institutions in the provision of climate capacity building in and for West Africa.
The interaction between selected alumni of WASCAL and the Funder, BMBF in Accra was relieving. It was exciting to discover how these alumni were faring in their various fields of endeavours. It was a great time of testimonies and experience sharing from the private and public sectors by these alumni

I want to take the opportunity to appreciate the deep relationship between WASCAL and all the universities that continue to host WASCAL students. As an organization, passionate about building and maintaining relationships with relevant stakeholders, we don't take granted the commitment of these universities to embrace our concept and integrate our students within the highest standards that have been set by their universities. We are very confident that as the years go by, we shall even build a much more formidable relationship so that together we can provide world class empirical solutions to the climate challenges facing West Africa.

We are indebted to the BMBF for their continuous support. Since the inception of WASCAL, the ministry has invested millions of Euros into ensuring the success of our operations. For instance, through their financial support the Capacity Building Department has, since 2012, admitted a total of 258 PhD and master's students in ten climate change thematic areas across nine west Africa countries. We are confident that together with BMBF the threats that climate change poses in West Africa will be fully tackled.
I hope that you will enjoy this edition of WASCAL News which captures the key highlights of what transpired in the course of the first quarter. Thank you
Have a pleasurable reading of this edition of the Climate News

DR. MOMUNI SAVADOGO
Executive Director

WASCAL NEWS

UNIVERSITY OF LOME CONFERS HONORIS CAUSA ON DR. WILFRIED KRAUS OF BMBF

The University of Lomé, Togo has conferred the Honoris Causa Award on Dr. Wilfried Kraus of the Federal Ministry of Education and Research, Germany (BMBF) for his outstanding contribution towards combating climate change in West Africa.

On this occasion, the entire WASCAL community and its numerous stakeholders wish to congratulate Dr. Kraus for this meritorious award.

BMBF TO CONTINUE SUPPORTING WASCAL FOR THE NEXT DECADE

The German Federal Ministry of Education and Research, BMBF, has pledged to continue supporting WASCAL for the next decade, and has challenged the organization to intensify its innovative strategies to attract more partnerships for its sustainability, while overseeing the financial contributions of member countries as a way of getting countries to own and drive WASCAL as a West African organization.

This was contained in the remarks of Dr. Wilfried Kraus of BMBF in an interaction with the management, staff, students, and alumni of WASCAL at its headquarters in Accra. Dr. Kraus had earlier on been decorated with the honoris causa award by the University of Lomé, Togo for his outstanding support and quality leadership in championing the cause of climate change in West Africa.

CLIMATE CHANGE AND ENERGY GRADUANDS OF WASCAL CHARGED TO DEVELOP SPIRIT OF ENTREPRENEURSHIP

The Executive Director of WASCAL, Dr. Moumini Savadogo has charged graduands of WASCAL's Masters Programme at the Universite Abdou Moumouni de Niamey to develop a resilient spirit of entrepreneurship, think outside the box and never wait for an employer before moving into action. He also asked them not to be dissuaded into deserting their certificates on their shelves to take on a different profession.

He made this remark in a speech read on his behalf at the graduation ceremony of the second batch of Masters students in Climate Change and Energy from theUniversité Abdou Moumouni De Niamey, Niger

Dr Savadogo further challenged them to live up to expectation and reciprocate the efforts of German Federal Ministry of Education and Research (BMBF).

WASCAL DEEPENS TIES WITH BURKINA FASO

WASCAL has expressed its deepest gratitude to the Government and people of Burkina Faso for the tremendous support it has given the institution over the past years. WASCAL also congratulated the country for its up-to-date payment of their country contribution.

This was contained in the speech of the Board Chair of WASCAL, Mr. Peter Dery when they paid a courtesy call on His Excellency S.E.M Pingrenoma Zagré, the Burkina Faso Ambassador to Ghana.

RESEARCH SPOTLIGHT

EARTH OBSERVATION DATA FOR IMPROVING THE MANAGEMENT OF LAKE BAM IN BURKINA FASO

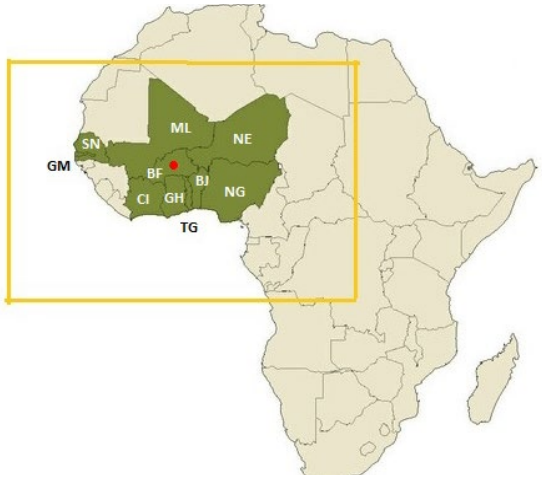
Dr. Gerald Forkuor, Senior Scientist, Earth Observation Applications Unit

Lake Bam is the largest natural lake in Burkina Faso. It is a Ramsar site of high ecological importance and home to many species of bird, fish, and the Nile crocodile. Economically, it supports dry season cultivation, construction and recently artisanal mining. However, there's been minimal efforts at monitoring changes in the lake's volume as well as demand for its multiple uses.

Between July 2016 and October 2017, WASCAL, with funding from the European Space Agency within the framework of the TIGER initiative, coordinated a number of research activities aimed at using earth observation data to improve knowledge of the lake's inter- and intra- annual volume changes and demand for multiple uses. These activities include: (1) use of radar imagery (Sentinel-1) to monitor the lake's volume in one calendar year, (2) development of a simple water balance model for the lake, (3) water productivity mapping for irrigated tomatoes based on Sentinel-2 and Landsat 8 imagery.

The lake's water balance, conducted for the period 2012 to 2016, revealed that about 88% of the total annual inflow into the lake is lost through overflow spillage during the rainy season (July to September), while evaporation and withdrawals constitute on average 11% and 2% respectively of annual water loss from the lake. During the dry season, however, evaporation and withdrawals can account for up to 70% and 30% respectively of monthly water losses. Plans by the government to extend the height of the current dam wall by 25 cm is expected to reduce the spillage losses and increase storage capacity for improved food and water security. Although water withdrawal constitutes only 2% of annual water loss, water productivity (WP) analysis revealed that the WP of most irrigated fields fell far below international standards set by the Food and Agricultural Organization. This calls for improvements in water use for dry season cultivation. The project noted an urgent need for an improvement in the hydro-meteorological instrumentation in and around the lake for increased accuracy of future analysis.

WASCAL – REGIONAL CLIMATE SIMULATIONS FOR WEST AFRICA



Global climate change is clearly noticeable at regional scales as well, and is one of the main challenges in West Africa in the 21st century. Countries in this region need to develop effective adaptation and mitigation strategies to counteract the negative effects of land use changes and of climate change on the population and on the environment, as, for example, on the hydro-meteorological variability. WASCAL is a research-oriented project aimed at deriving solutions for these challenges. A team of climate modellers in Germany and West Africa is developing a regional climate modelling system ("dynamical downscaling" of global modelling results) specifically for Northwest Africa.

At DKRZ many climate variables such as temperature and precipitation, for example, are being computed in the project "WASCAL – Regional Climate Simulations for West Africa", using spatially and temporally highly resolving regional climate models. A multi-model ensemble, consisting of three different global Earth System Models (ESMs) and three regional climate models (RCMs), shows the strengths and weaknesses of each model and makes a probability estimate of the occurrence of extreme climate events possible. The onset of the rainy season is such an event of great economic importance, which is governed, just like its duration, by the West African monsoon system.

WASCAL SENIOR SCIENTIST INVOLVED IN THE NEXT IPCC ASSESSMENT REPORT

Dr. Mouhamadou Bamba Sylla, senior scientist in climate modeling and climate change currently leading the research cluster climate change and climate variability at the WASCAL Competence Centre has been selected as an author in connection with the preparation of the next Intergovernmental Panel on Climate Change (IPCC) Assessment Report 6 (AR6).

By this appointment, he will be one of the lead authors for the chapter 12 "Climate Change information for regional impact and for risk assessment" of the Working Group 1 (WG1) contribution due in 2021. Together with his co-authors, they will work on integrating both quantitative and qualitative climate change information from multiple lines of evidence on changing hazards for the present day, the near-term and the long-term. According to Dr. Sylla, working with IPCC is both exciting and challenging.

"In fact, the task of Lead Authors is a demanding one. It comes with astute commitment. The workload during the period from the second half of 2018 to 2021 will be in the order of several months and can be particularly heavy during certain periods. At the same time, it is a big honour to be selected to contribute to one of the most comprehensive scientific documents in history" He said.

BEE POLLINATION INCREASES CASH CROP YIELD IN BURKINA FASO

Bees are the most important pollinators worldwide. About 75% of agricultural crop species rely, to some degree, on animal pollination, and about one-third benefit from cross-pollination by developing higher fruit quantity and/or quality.

Researchers from the Universities of Ouagadougou, Abidjan, Rostock and Wuerzburg (Tier 2.7 Biodiversity and Ecosystem Services) monitored bee species diversity in savannas and crop fields in south west Burkina Faso. Furthermore, they investigated the importance of bee pollination for fruit and seed set in cotton and sesame. Pollination by honeybees and wild bees significantly increased yield quantity and quality up to 62%, while exclusion of pollinators caused a yield gap of 37% in cotton and 59% in sesame. Self-pollination revealed inbreeding depression effects on fruit set and low germination rates in the F1-generation. "Our results highlight potential negative consequences of any pollinator decline, provoking risks to agriculture and compromising crop yields in sub-Saharan West Africa", says Dr. Katharina Stein, who published the study with her colleagues in the international journal Nature Scientific Reports in December 2017. The ecology student Drissa Coulibaly from Côte d´Ivoire received a doctorate under supervision of Prof. Souleymane Konaté at the University Nangui Abrogoua in Abidjan. During his training in WASCAL Dr. Coulibaly became one of very few experts on West African bees and currently is the director of the first reference collection of West African bee species that was created by the team during the last years.

Stein, K., Coulibaly, D., Stenchly, K., Goetze, D., Porembski, S., Lindner, A., Konaté, S., Linsenmair, E.K. (2017) Bee pollination increases yield quantity and quality of cash crops in Burkina Faso, West Africa. Scientific Reports | (2017) 7:17691 | doi:10.1038/s41598-017-17970-2. (open access)

PERSONALITY PROFILE

DIRECTOR OF CLIMATE CHANGE AND ADAPTED LAND USE IS NOW A PROFESSOR

Director of the Masters Research Programme on Climate Change and Adapted Land Use (MRP CC & ALU) of WASCAL in Nigeria (FUT-MINA) has attained the academic rank as a Professor from Federal University of Technology, Minna, Nigeria.

Professor Appollonia Aimiosino OKHIMAMHE has worked with WASCAL since 2010, first, as the Task Force Member that represented Nigeria during the pre-operational phase of WASCAL in 2010 - Oct 2012. She then worked as the Coordinator at WASCAL Climate hange and Adapted Land Use between Oct 2012- Oct 2014, before becoming the Director of WASCAL CCALU till date. So far the third batch of students are on the verge of graduating, and Professor OKHIMAMHE has successfully seen to all these batches

Professor Okhimamhe has been an Associate Professor of Geography with a research focus on application of remote sensing and GIS in geographical sciences including climate change. As one of the pioneer PhD holders in applied remote sensing in Nigeria (FUT Minna PhD Class of 1994), she has been at the forefront of ensuring that the remote sensing applications' option of the Department of Geography remained relevant and in line with modern trends.

She was one of the 12 national Project Leaders in the UNESCO Crosscutting Project on the Application of Remote Sensing for the Integrated Management of Ecosystem and Water Resources in Africa (2002) and the resultant research collaboration with National Space Research and Development Agency (NASRDA) in 2006. She was a team leader in a research on Gender Dimensions on Climate Change in Nigeria (focusing on two states in Northern Nigeria) in collaboration with Heinrich Bolls Foundation, Lagos; and also, in the research on Case Studies of Managing Climate Risk through Sustainable Land Management in Nigeria in collaboration with International Food Policy and Research Institute, Washington. She was instrumental to the establishment of a modern remote sensing laboratory equipped with workstations and peripherals and the receipt of the KIELA Award from the American Society for Photogrammetry and Remote Sensing (ASPRS) for the Department (2004).

Congratulations Professor Okhimamhe. WASCAL is proud of you!

STUDENTS & ALUMNI VOICES

Dr. Biola Kazeem Badmos
Islamic Development Bank

" I'VE PROGRESSED IN MY CAREER, THANKS TO WASCAL"

I am a beneficiary graduate of the pioneering class of WASCAL KNUST. Through the PhD programme, I had the opportunity to have a six months training abroad to enhance my skills, attended high level climate change meetings, took courses on climate change entrepreneurship module, became bilingual (English and French), executed policy-oriented projects and wrote policy briefs through Inter-GRP group design projects.

Ultimately, WASCAL has given me the needed skills to be relevant in society today. I have realized a progression in my career and I am contributing meaningfully to the National Development agenda. Thankfully, out of my PhD research, I have produced six (6) journal articles, one book chapter and six (6) conference proceedings.

Dr. Armand KABLAN
Assistant-Lecturer, UFHB
Ph.D. Water, Sanitation, and Environment

I AM NOW A LECTURER AT UNIVERSITÉ FÉLIX HOUPHOUËT-BOIGNY

I am a WASCAL Alumnus and I am delighted to say that today I have been recruited at the Université Félix Houphouët-Boigny, Abidjan Côte d'Ivoire, as Assistant Lecturer.

I am proud to say that the skills that I am developing now in my daily scientific life, I got it from WASCAL-Lomé., I am a product of WASCAL-Lomé. Today I have been recruited at the Université Félix Houphouët-Boigny, Abidjan Côte d'Ivoire, as Assistant Lecturer. I am very grateful to you for your assistance and your support towards my person during this hard experiment. I would like to thank your team (WASCAL-Togo) for the hard work.

I will be always available if you need any support or help for the future students of WASCAL-Lomé (Climate Change and Human Security).

Dr. Mathieu Maurice Ahouansou
School of Natural Resources Management, Faculty of Agronomic Sciences, University of Abomey -Calavi, Benin

" I HAVE BEEN ABLE TO NETWORK WITH PEER RESEARCHERS IN AFRICA"

The WASCAL programme is a great that brought together Early Career generation scientists in Africa. Personally, the programme was a great opportunity for me to learn and improve my competency in research. Additionally, I leveraged on the financial support, as I come from a country where financial resources for science are scarce. Through the programme, I have been able to network with peer researchers in Africa, Europe, Asia and New Zealand. Soon after obtaining my doctorate, I was recruited as Assistant Professor and Associate Researcher at the FAS-UAC and National Water Institute of Benin respectively. Due to my qualification as Climate Change specialist, I am currently involved in the assessment of vulnerability and adaptation to climate change in the water sector for the Third National Communication of the Republic of Benin under the United Nations Framework Convention on Climate Change. As Assistant Professor, I am mentoring undergraduate and postgraduate students in field data collection and Laboratory works and delivering lectures in hydrology, land use and climate change issues. In 2016 and 2017 I was involved in consultancy roles, as an expert hydrologist and climate change expert, to analyse the hydrological long-term trends in past and present time and to investigate extreme drought and floods events in Benin. Those works were conducted for the Early Warning System Project in Benin funded by the United Nations Development Programme and the World Bank.

UPCOMING EVENTS

GSP Task Force Meeting
5th-6th April
Accra, Ghana

Planning of Renewable Energy Workshop
14th April
Lomé , Togo

SASSCAL Science Symposium
16th- 20th April
Lusaka, Zambia

WASCAL/BMBF Strategy Meeting
7th - 9th May

WASCAL Science Symposium
19th - 22nd June
Senegal

Extraordinary Government Board Meeting
June

In-Service training in climate change impact, adaptation and mitigation in West Africa
4th-8th June

Editor - Nii Commey. **Assistant Editor** - Peace Ahovi **Layout** - Public Relations Department.
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