Climate Information for Public Health Action (CIPHA)

Summer Institute

News from the Ground

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(Cover :Jason Rodriguez, IRI)

In this Issue

From the Editors	1
Updates	2
Interview	3
Upcoming Training Courses	4
Upcoming Events	6
Recent Publications	7
Related Links	8
Contact Information	8
Internet Citation	8

This newsletter provides updates on the latest developments within the CIPHA network, including the activities of alumni and facilitators, brief meeting reports, news from the health and climate community, and opportunities for collaboration.

From the Editors

During the past decade, climate associated risk has been recognized as a potential constraint to achieving development targets, including the Millennium Development Goals. While recent focus on climate change has made these concerns more pressing, there has been a tendency to overlook the opportunities to use climate and environmental information to improve sustainable management of health.

In 1999, the International Research Institute for Climate and Society (IRI) led a collaborative training course in Bamako, Mali on *Climate Prediction and Diseases/Health in Africa.* Convened by the Faculté de Médecine, dePharmacie et d' Odonto-Stomatologie and by the Direction Nationale de la Météorologie du Mali, it was one of the first interdisciplinary workshops of its kind to address the challenges and opportunities around climate and health in Africa. Since the initial Bamako workshop, awareness around the risks of climate has risen considerably and many significant lessons have been learned through many initiatives and many partnerships.

In order to compile all of those lesson and to develop a roadmap for the following 10 years,The International Research Institute for Climate and Society (IRI) in partnership with The Ethiopian Climate and Health Working Group, along with a steering committee comprised of the African Climate and Policy Center, WHO, UNDP, the UK Met Office, Exeter University organized The "**Climate and Health in Africa: 10 Years On"** workshop last month. It was planned as a forum to present, debate and evaluate lessons learned and to elaborate on newly emerging perspectives and opportunities for managing climate and health risks in Africa

Over 110 participants representing critical thinkers from multiple disciplines attended the workshop. Presentations and breakout sessions were accompanied by lively discussion, debate and contributions by all participants. Participants examined examples of best practice in climate change adaptation in health and deliberated on how to bring key African partners in adaptation together to focus on common demand-driven objectives around an African led agenda.

Key outcomes for the workshop include a consensus agreement on priorities for policies, practice, services and data and research and education for the integration of Climate Risk Management into Africa's health sector. With this as a first step, it was underscored that **Africa will be taking the lead in Climate and Health** in the near future.

The report of the workshop is available online at: **http://iri.columbia.edu/publications/id=1090**

Updates

Alumni



SI 10 alumna Stephanie Kay Moore. Stephanie is a Research Associate at NOAA"S West Coast Center for Oceans an Human Health. Last February .she presented her work on climate impacts on harmful algal blooms at the *American Association for the Advancement of Science (AAAS)* meeting in Washington DC. The panel received a lot of attention and her project got some great media coverage, including a podcast and an article in National Geographic News that will be coming out soon. For further information please go to the following link

http://tinyurl.com/5snqlsh



SI 09 alumna Mary Hayden. Mary works at NCAR as a researcher and right now she is organizing **a** NCAR/CDC Workshop on Climate and Health The workshop will focus on vector-borne diseases related to human health and the purpose of it is to train health professionals and early career climate and health researchers (public health officials, graduate, students, post-docs and early career scientists and faculty) on how to develop robust interdisciplinary research projects in the complex area of climate and health.

More information about the course at
http://ral.ucar.edu/csap/events/climatehealth/2011/



SI 10 Pascal Yaka, participated in a seminar at WHO last March where he showed the results of his study in Niger and Burkina on outbreaks of meningitis. He said that, using a statitical modelling approach climate and environmental factors (such as temperature, rainfall, wind and humidity) could account for at least 25% of meningitis incidence in Niger. National meningitis incidence data from 1966 to 2005 were analyzed to reach theses conclusions..

For more information on this project please contact Pascal at pascal_yaka@yahoo.fr

Facilitators

SI 08-09-10 Pietro Ceccato was a lecturer at the international PhD course, "Remote Sensing and Environmental Change," offered at the University of Copenhagen. The intensive 5-day course, held March 14 - 18, 2011, provided the practical and theoretical foundation for applying remote sensing techniques to identify and monitor environmental change. The course consisted of a mixture of lectures, hands-on exercises and student presentations. The hands on exercises were based on data from the comprehensive data library at IRI, and state of the art software and algorithms.



This activity is a capacity-building component of an IRI-University of Copenhagen collaborative effort to improve the understanding of land surface processes, particularly those related to surface and soil moisture. The potential benefit of the research conducted is in improved methods feeding into assessments of agricultural and environmental stress and risk.

To read more on the project, see the IRI project profile.

SI 08-09-10 Tony Barnston with some other IRI researchers and support staff has completed an initial version of a cluster of web pages showing verifications of IRI's seasonal climate forecasts (or Net Assessment) during their entire period of issuance from late 1997 to the present.

Go to the link and you will see a comprehensive set of menu selections: which type of score, which specific score from that score type, which variable (temperature or precipitation), which season (or all seasons together), and which lead time http://iri.columbia.edu/climate/forecast/verification. For ones that are actual scores, you will see a map showing the geographical distribution of the 12-13 year average of the score, below which there is a graph showing the time series of the score for all individual forecast cases from late 1997 to the present. There are also performance diagnostics that are not simply scores per se (like reliability plot and ROC diagram), which have their own unique format rather than a map and a time series. You are welcome to sample this and give us your feedback



Tony Barnston, Chief Forecaster . IRI *(Photo: Jason Rodriguez,IRI)*

Interview



Peter Omeney (PO), 2008 Summer Institute Alumnus, visited the IRI in March 2011 and was interviewed by Francesco Fiondella (FF), communication officer at the IRI.

FF: Could you begin by just having you state your name, and where you are from, and what type of work you do?

PO: I am Peter Omeny, I'm from Kenya, I work in the Kenya Meteorological Department. Basically, I am a meteorologist, I've been in the weather forecasting but right now I am in the climate prediction area. I've been attached at NOAA Climate Prediction Center, African Desk for climate prediction, that is why I am there and I'll be there for four months. Yes.

FF : Can you speak to some of the major climate-related problems, some of the sectors that have been using the prediction products your institution developed?

PO : In Kenya there are two major climate related problems. The first one is droughts, and then the second one is floods. In fact, during drought, you suffer more because if I may cite the drought of the year 1998-2000, that lasted more than two years. There was a lot of impact, especially on water resources, and pasture resources so, quite a number of animals, or livestock, died. At the same time, water levels, especially in the dams, and in the rivers went down, and that caused power rationing because our electricity mainly depends on hydropower generation so the levels went quite down and that caused the government to ration both water and power, and as a result, there was economic loss because our main industries could not work.

Now, apart from the drought, I mentioned floods. You know, we live in the tropics and our country is having several factors contributing to rainfall, like the topography, the lake, the Nino, etc.. During the Nino, we get a lot of rains, and normally after the rains, we, there's upside of some diseases. Climate related diseases, like malaria, Rift Valley Fever. In fact, those are the common ones, so, you find that in like 1997-1998 El Nino, just the year before the drought of aforementioned valley. There was an outbreak of malaria and Rift Valley

Fever, and this basically occurred in the highlands, which are unstable areas, the areas that are not used to malaria. So you find quite a number of people with low immunity in those areas, they died. You foresee today, the next day, all before the day ends. You are dead. The same with Rift Valley Fever. So those are the main ones. Apart from floods and drought, they are others like; the other climate related disasters I will talk about is the landslide. And this mainly occurs in the highlands parts of the country.

FF: Did you come here to the IRI with the hopes that some of the training seminars, discussions could help to better manage this kinds of issues ?

PO: Yes, as a weather forecaster or as a climate scientist, actually you need to know application areas in fact, the training there had a lot of application areas, one of them is in agriculture, the other one is in water resources, like we did streams flow, how the seasonal rainfall affect stream flow. And besides that, we also did application in remote sensing and also in health. So, actually, this training has really helped me learn the linkage between climate and these application areas. Like I just mentioned, the example I gave of El Nino. I know, in terms of health, what I am expecting when there is El Nino. When there is El Nino, we expect, malaria in unstable areas and at the same time, in agriculture, in fact there are some models, which we learned here, crop models that can really help us in using climate in building a model for predicting crop yield. So, it was, the training was very useful in terms of application.

FF: The last question is, in general why is this climate training important to professionals like yourself?

PO: Two things I would say, is one, here in the US you have better equipments for, especially computing capability compared to us back at home, and besides the computing capabilities, your research is stronger than ours, and I think those are the kinds of exposures that we need here. In fact now I've learned that in the field of climate or weather forecasting, we need to improve our computing and we also need to improve research. Without research, there is very little that we can improve in terms of our services that we offer. Now, secondly, we have not really been very keen on application areas. We just do prediction, we disseminate it, and we don't know exactly how to downscale it to different uses, like we have learned here now, we can downscale climate information for health, we can downscale climate information for agriculture, and at the same time for stream flow modeling. So those are the kind of things that are important for professionals like us. Like if in a factory and you don't know who your consumers are, and the type of product that they consume, then your factory is as good as nothing. So, that is why young professionals like us we need to have this type of training so that we know application areas, we build our research and at the same time you know what is required back at home, like computing capabilities. When you are doing budgeting, like, two, three years when I come to a position, I know that that computer is important, research is important, application is important, so I know where to invest more.

Upcoming Trainings

Introduction to Infectious Disease Modelling and its Applications. London School of Hygiene & Tropical Medicine. London, United Kingdom. June 27 - July 8 2011

This two week intensive course introduces professionals working on infectious diseases in human or animal populations to this exciting and expanding area. The emphasis of the course is on developing a conceptual understanding of the basic methods and on their practical application, rather than the manipulation of mathematical equations.

The course is designed for individuals interested in expanding their knowledge of the techniques for analyzing and interpreting epidemiological data on infectious diseases and for predicting the impact of control programmes, including medical and health professionals, policy makers, veterinary scientists, health economists, medical statisticians and infectious disease researchers.

Further details about the course content are available at http://www.lshtm.ac.uk/prospectus/short/siidma.html

Workshop on Environmental Risk and Extreme Events, Ascona, Switzerland, July 10-15 2011.

The purpose of this workshop is to bring together researchers in statistics of extremes and in applied domains for whom this branch of statistical science is a key tool, in order to assess the state of the art in modelling of complex extreme events, to highlight ideas emerging from the statistical side that may be useful in applications, and to identify challenging environmental problems that need statistical innovations from both theoretical and applied researchers.

The workshop will comprise invited talks and contributed talks and posters. More details, including fees and access to the registration form, may be found at http://stat.epfl.ch/ascona2011

Climate Change and Development Short Course. Norwich, United Kingdom August 31 – September 13 2011

The purpose this course is to equip non-specialists with a broad understanding of what climate change may mean for low-income populations and what the scope and prospects are for adapting to change and contributing to emissions reduction in the context of development issues and poverty reduction.

Further information online at:
http://www.uea.ac.uk/international/campus

Summer School on Climate Impacts Modelling for Developing Countries: Water, Agriculture and Health. Miramare, Trieste, Italy. September 5-16 2011.

To aid scientists in developing countries achieve a working knowledge of impacts modelling, this workshop proposes to provide lectures and laboratory classes on:

- The use and uncertainty of the main observational datasets available from remote sensing to drive impacts models.
- The use and uncertainty of short-range to seasonal forecast products and climate model data from major numerical weather prediction and climate centres the IPCC assessment climate integrations.
- Impacts modelling in the three target sectors of agriculture, water and health including classes using open-source models in each sector.

More information available online at:
http://start.org/news/summer-school-climate-impacts-ictp.html

MSc in Climate Change and Development . University of Sussex/Institute for Development Studies. UK . October 2011

This is unique course that aims to provide state-of-the-art training for the rapidly expanding market for development professionals with specialisation in climate change. The programme is strongly multidisciplinary and students will acquire specialist knowledge of the causes of climate change, the implications for developing countries, and the policy and practice of efforts to mitigate and adapt to a changing climate. Courses are taught by leading researchers in these fields from the world renowned Institute for Development Studies (IDS), the Geography Department and Science and Technology Policy Research Unit (SPRU).

More information available online at:
http://www.sussex.ac.uk/study/pg/2011/taught/3331/23691

Course on Climate change governance: adaptation and mitigation as institutional change processes . Wageningen, Netherlands. November 21 – December 2 2011

The course builds on experiences in capacity building programmes on climate change adaptation in developing countries in which Wageningen UR collaborates with research institutions and development networks world wide.

This course will enable participants to play an active role in the governance of climate change processes. It offers conceptual frameworks to understand climate change, vulnerability and adaptation and mitigation options. It builds skills to apply tools for stakeholder engagement, policy influencing, advocacy and negotiation. The course includes practical field work and development of individual action plans.

For more information please contact go to :
http://www.cdi.wur.nl/UK/newsagenda/agenda/Climate_change_governance.htm

Upcoming Events

The American Meteorological Society's (AMS) Summer Community Meeting (SCM) . Boulder, CO . August 8-11 2011

The meeting focus (*for health*) is on two key points: (1) areas of opportunity to connect hydro-meteorology and public health in the U.S., and (2) the economic value/benefit (to groups and the nation) derived from that connection

The SCM is a great opportunity to inform national hydro-met leaders on the opportunities that are being explored and implemented elsewhere with measurable success. Our goal is to share knowledge that can sharpen domestic (i.e., U.S.) focus on environment and health issues/opportunities, cultivate needed public/private ventures, and energize coordination between local to international levels.

More information please contact Wendy Thomas at wthomas@ametsoc.org

South African Society for Atmospheric Science Conference. Amanzingwe, South Africa. September 22-23 2011

The theme of the conference is "The interdependent atmosphere, land and ocean", and deals with the synergy and interactions within the coupled system with a focus on Southern Africa. This theme also addresses the cross-disciplinary collaboration activities within the research and applied science communities, and the interface between science and society.

More information available online at:
http://web.csag.uct.ac.za/sasas/index.php/sasas-2011

Water and Health: Where Science Meets Policy Conference. Chapel Hill, NC. October 3-7, 2011

This conference will feature themes ranging from Freshwater Availability and Climate Change Adaptation to Human Right and Ethics.. For a complete list of conference themes and abstract submission details, visit whconference.unc.edu

WCRP OSC :**Climate Research in Service to Society.** Denver, CO, USA. October 24 - 28 2011

A better understanding of the behavior of the climate system and its interactions with other Earth system components is critical to predict its future evolution, reduce vulnerability to high impact weather and climate events, and sustain life. This need is perhaps greater than ever before given that humans have emerged as the dominant agent of future change. Progress will require, moreover, an increasingly holistic approach across scientific disciplines, as well as an unprecedented commitment to the development of a diverse and talented future workforce.

To advance on such challenges, the WCRP will assemble for the first time ever its entire research community, and engage other key international research programmes, in a major Open Science Conference (OSC) .Through a unique synthesis of research findings, the OSC will assess our current state of knowledge on climate variability and change, identify the most urgent scientific issues and research challenges, and ascertain how the WCRP can best facilitate research and develop partnerships critical for progress.

More info available online at:
http://www.wcrpclimate.org/conference2011/index.html

CLIMATE 2011 / KLIMA 2011. The World´s CO_2-friendly Scientific On-line Climate Conference"Climate Change and Disaster Risk Management". November 7-12 2011

CLIMATE 2011 / KLIMA 2011 is being organized by the Research and Transfer Centre "Applications of Life Sciences" of the Hamburg University of Applied Sciences. The Centre undertakes fundamental research on life sciences issues as well as on aspects of climate, energy and sustainable development.

Delegates will find in the e-conference a unique opportunity to look at climate change issues not only under a scientific perspective but also in connection with disaster management in a way not yet seen elsewhere – interactive, across disciplines and 100 % virtual. To allow users from all over the world to access this extraordinary knowledge pool and avoiding travel costs and CO_2 emissions – often a major barrier for participants from the developing world –, participation is free of charge.

More info available at
http://www.climate2011.net/en/organisation

Recent Publications

Africa needs climate data to fight disease. Thomson, M.C,Connor S, Zebiak S,Jancloes M, and Mihretie A. *Nature*, 471, 7339, 440-442, doi: 10.1038/471440a.

The authors send a timely call to the climate and health communities and their stakeholders towards a shared vision and an action plan for tackling infectious disease in Africa.

Available online at;
http://www.nature.com/nature/journal/v471/n7339/full/471440a.html

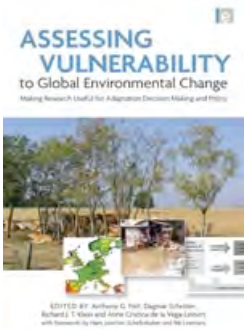


Drawing up a national climate change adaptation policy: feedback from five European case studies.*Dumollard G. and Leseur A.Climate Report n°27 - March 2011*

The Climate Report No27 offers a comparative analysis of policies and measures designed to promote adaptation to climate change impacts in five European countries (Germany, Spain, France, the Netherlands and the United Kingdom). It focuses on institutional processes and critical factors involved in the determination of these policies and measures.

Available online at: http://www.cdcclimat.com/Climate-Report-no27-Drawing-up-a.html?lang=en

Assessing Vulnerability to Global Environmental Change: Making Research useful for adaptation Decision Making and Policy. Edited By Anthony G. Patt, Dagmar Schröter, Richard J. T. Klein and Anne Cristina de la Vega-Leinert



This book seeks to bridge the gap that often exists between research into vulnerability and decision-making and policy on global environmental change, providing a framework for linking the two to reduce vulnerability. It discusses vulnerability as the central theme and brings together many different applications from disaster studies, climate change impact studies and several other fields and provides the most comprehensive synthesis of definitions, theories, formalization and applications to date, illustrated with examples from different disciplines, regions and periods, and from local through to regional, national and international levels.

More information available online at:
http://www.earthscan.co.uk/?tabid=102314

On the use of satellite-based estimates of rainfall temporal distribution to simulate the potential for malaria transmission in rural Africa. Teresa K. Yamana, Elfatih A. B. Eltahir . Water Resources Research, Vol. 47, W02540, 12 PP., 2011

This paper describes the use of satellite-based estimates of rainfall to force the Hydrology, Entomology and Malaria Transmission Simulator (HYDREMATS), a hydrology-based mechanistic model of malaria transmission. We first examined the temporal resolution of rainfall input required by HYDREMATS. Simulations conducted over Banizoumbou village in Niger showed that for reasonably accurate simulation of mosquito populations, the model requires rainfall data with at least 1 h resolution. We then investigated whether HYDREMATS could be effectively forced by satellite-based estimates of rainfall instead of ground-based observations. The Climate Prediction Center morphing technique (CMORPH) precipitation estimates distributed by the National Oceanic and Atmospheric Administration are available at a 30 min temporal resolution and 8 km spatial resolution. We compared mosquito populations simulated by HYDREMATS when the model is forced by adjusted CMORPH estimates and by ground observations. The results demonstrate that adjusted rainfall estimates from satellites can be used with a mechanistic model to accurately simulate the dynamics of mosquito populations.

Available online at:
http://www.agu.org/pubs/crossref/2011/2010WR009744.shtml

Temporal correlation analysis between malaria and meteorological factors in Motuo County, Tibet. Huang F, Zhou S, Zhang S, Wang H, Tang L. *Malaria Journal* March 2011, 10:54

This paper concludes that meteorological variables play important environmental roles in malaria transmission. Relative humidity was the greatest influence factors, which affected the mosquito survival directly. The relationship between malaria incidence and rainfall was complex and it

was not directly and linearly. The lags of temperature and relative humidity were similar and smaller than that of rainfall. Since the lags of meteorological variables affecting malaria transmission were short, it was difficult to do accurate long-term malaria incidence prediction using meteorological variables.

Available online at:
http://www.malariajournal.com/content/10/1/54

Related Links

http://iri.columbia.edu

Contact Information

Please contact ciph@iri.columbia.edu to send your comments or materials to be included in the next CIPHA newsletter. **The deadline for documents to be included in the next issue is July 20th, 2011.**

If you have questions about IRI activities, please visit our Home Page: http://iri.columbia.edu

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