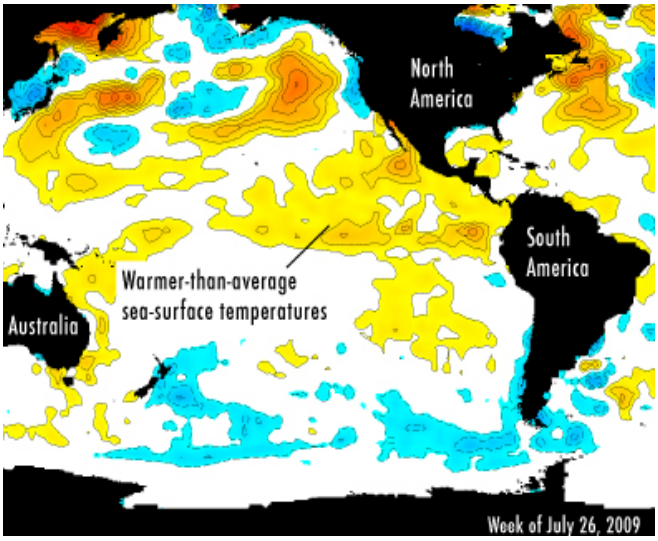
Climate Information for Public Health Action (CIPHA)

Summer Institute

News from the Ground

August 2009



(Source: IRI Web page)

Warming sea surface temperatures in the equatorial pacific predict El Nino event - ENSO!

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From the Editor

Breaking News: The ENSO forecast

Recent IRI and WMO forecasts point to a higher than normal probability (56%) of an El Niño event developing this year.

The magnitude of this event is still not clear but it is necessary to develop an action strategy to help manage the potential risks and reduce impacts, both globally and at a regional level. Previous El Niño have been associated with negative global climatic and socio-economic impacts, including public health impacts in specific locations.

Seasonal forecasting methods and information can be used to far greater effect by the health sector. For example the beginning and progression of El Niño can now be forecast months ahead, and can give a timely seasonal indicator of malaria risk. In this context El Niño provides opportunities for early warning and could be uses as an indicator to strengthen the role of the Ministry of Health in disaster preparedness programs as well as in disease surveillance and monitoring.

Please find more information at:
http://iri.columbia.edu/climate/enso/docs/health1.pdf

The 2009 Summer Institute on Climate Information for Public Health

Knowledge sharing it the objective of this newsletter as is the need to support emerging networks of health and climate practitioners. In his recent address to the National Academy of Sciences, President Obama also underlined the need to create a “network of networks” to maximize the varied (public health) opportunities that may arise for furthered environmental sciences. We believe the Summer Institute for Climate Information for Public Health is a valuable platform for creating a global network of practitioners focused on policy and practice in public health and climate issues.

Building on the response of our 2008 Summer Institute alumni, and in order to continue to bridge the existing gap in providing climate information to the public health community, the IRI and its partners (Mailman School of Public Health and CIESIN) designed and implemented the second annual Summer Institute on Climate Information for Public Health (SI 09).

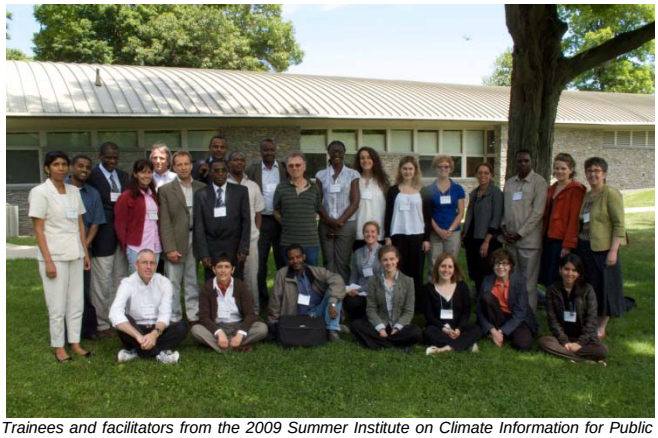
This year, 12 professionals from ten countries in the Americas, Europe and Africa were selected out of the 43 applicants to participate in SI 09 (see Updates). Participants hailed from Ethiopia (3), Kenya (1), Madagascar (1), Mali (1), Ghana (1), the United Kingdom (1), Sweden (1), Ecuador (1),

Canada (1) and the United States (1). All trainees were professionals who play a key role in decision-making for health-care planning, evaluation or control of climate-sensitive diseases or climatic threats to public health (e.g. flooding). The evaluation of the course highlighted the existing gap in providing climate information to the public health community and the need to lead the public health community to the relevant sources and uses of climate information. SI 09 evaluation also indicated that this training was perceived as a comprehensive experience by all the participants (trainees, facilitators, organizers), who showed consistent enthusiasm and a high degree of commitment throughout the course. Click here to access the summary of SI 09.

The editorial board of *Climate Information for Public Health Action* (CIPHA) is now delighted to welcome the 12 SI 09 trainees to join the community of the SI alumni who contribute news items and participate in the dissemination of CIPHA. This newsletter provides updates on the latest developments within the CIPHA network including alumni or facilitators' activities, brief meeting reports, news from the health and climate community as well as opportunities for collaboration and funding.

Updates

Alumni



Trainees and facilitators from the 2009 Summer Institute on Climate Information for Public Health (SI 09). Photo: David Gottlieb.

Find the profile of the SI 09 alumni on this interactive map!





SI 08 alum Laurence Cibrelus received the Sidney Kark Award in Epidemiology from the Mailman School of Public Health, Columbia University, before serving as **SI 09 facilitator and course evaluator**. Laurence has now joined the IRI. Her medical and public health backgrounds, as well as field experience on meningitis and climate, will support the IRI's efforts to bring together the health and climate communities in order to improve field public health decision-making.



SI 09 alum Rachel Lowe is a PhD student at the University of Exeter, School of Engineering, Mathematics and Physical Sciences. In June, Rachel presented a paper entitled 'Climate-based dengue predictions for Brazil' at the StatGIS 09 GeoInformatics for Environmental Surveillance conference held in Milos, Greece. An extended version of the presentation will be published in a special issue of Computers & Geosciences (*to be advertized in the next issue of the newsletter*). In July, Rachel was involved in organizing a workshop held in Dartmoor, Devon, UK 21-24 July 2009 for the research project EUROBRISA – A Euro-Brazilian Initiative for Improving South America seasonal climate forecasts (http://eurobrisa.cptec.inpe.br/)



SI 09 alum Marie-Clémence Rakotoarivony is the head of the Malaria Epidemic Surveillance unit of the National Malaria Control Program in Madagascar. As a key member of the Madagascar Climate and Health and Working Group (CHWG), she is involved in the organization of the training course 'Climate Information for Public Health' that will be held in Madagascar in October 09. See 'Upcoming Training Courses' below.

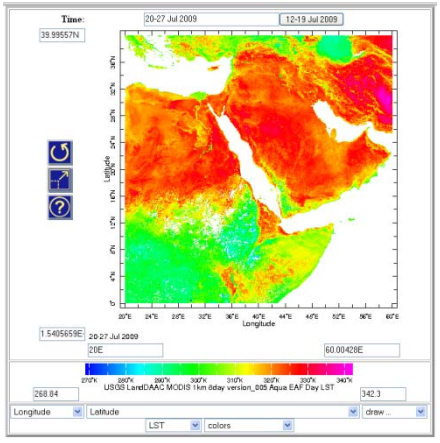


SI 09 alum Daddi Jima Wayessa is the Deputy Director General of the Ethiopian Health & Nutrition Research Institute (EHNRI). As the chairman of the CHWG for Ethiopia, he is a key organizer of the training course 'Climate Information for Public Health' that will be held in Addis-Ababa in December 09, to be fully advertised in the next CIPHA. See 'Upcoming Training Courses' below.

Facilitators



SI 08 and SI 09 facilitator Pietro Ceccato and Christelle Vancutsem, also from IRI, created new maps for the IRI Data Library. The night and day Land Surface temperature maps, derived from Moderate Resolution Imaging Spectroradiometer (MODIS), are available through the data library. The maps are available on a 8-day composite starting from Jul 2002 to present. Click here to access the maps for East, West and South Africa. The maps for Colombia are available here.



(Source: IRI Data Library)

Interview



Dr Eric Bertherat, from the World Health Organization, is discussing meningitis and climate at a panel discussion held at the Mailman School of Public Health. Photo: Laurence Cibrelus.

Dr Eric Bertherat, from the World Health Organization (WHO), is the Chair of the Meningitis Environmental Risk Information Technologies (MERIT project, which is a multi-disciplinary effort to integrate climate and environmental information into current and future control strategies. Dr Bertherat was a keynote speaker of the panel discussion on meningitis and climate that was held at the MSPH, as part of SI 09. Eric Bertherat (EB) visited the IRI on June 4 and was interviewed by Francesco Fiondella (FF), communications officer at the IRI.

FF: Can you give us an overview of the burden that meningitis outbreaks pose to people in Africa?

(Meningococcal) meningitis can appear everywhere worldwide but in Africa there is a specific zone, which we call the Meningitis Belt, going from Senegal to Ethiopia, and in this specific region, the disease has a spatial pattern. It's a huge incidence all over the year and during the dry season there is a seasonal increase of the disease, and in addition to that we can face huge outbreaks during the dry season, and that's very specific to this region. We don't see that anywhere worldwide, even if we can have little clusters (…). For a country like Burkina-Faso a normal year there can be around 20,000 cases during the dry season, most of these cases being kids. And there is the case-fatality ratio also, 10% of these cases are going to die. There is another kind of burden among the survivors, 10-25% of the survivors, of these children, are going to remain with neurological [symptoms] like blindness, deafness and of course that's also part of the burden for the country. And the other problem is that during the season where a district is affected by an outbreak, all the activity of the health system is blocked by all these patients

arriving to the dispensary, and the problem is that at the same time they still have cases of malaria, TB, AIDS, etc.

FF: Has the disease/epidemic structure been changing over time? For example, can you describe the way that the occurrence, from what we know, is shifting?

EB: We are not sure that the limits of the Belt are changing. Our feeling that (there is) more and more (of a) problem in the southeastern part of the Belt, north of Uganda, north of DRC, which are the south limit of the Belt (…). So our feeling is that the Belt is going to the southeastern part of the continent. That is something we would like to verify.

FF: (…) From what I understand, climate is somewhat a driver of the disease?

EB: Definitively, there is, since the first description of the Meningitis Belt is 1963. The Belt was described based on epidemiological patterns, these three criteria I told you about. Having described the Belt on these epidemiological criteria, Léon La Peyssonnie, who first described the Meningitis Belt, immediately observed the impact of rainfall on the occurrence of meningitis.

FF: You mentioned geographic changes, but how often do epidemics occur in the Belt and has that been changing in recent decades?

EB: We used to say that there was a kind of pluri-annual cycle of large outbreaks, country by country. We used to say that there was a delay of five, seven, ten years depending on the countries, between these different big waves of the disease. But in fact it seems that the situation is changing and that's something we can't say anymore, for reasons that are unclear. But also, when we look at the situation at country level, in fact, we are missing a lot of the natural history of the disease because in fact when we look district by district, each district has its own history in terms of natural history of the disease. And it's the sum of these different, these specific histories that make the profile of a country and the same that the sum of profiles of the different countries which make the profile of the Belt as well, as a whole.

FF: Going back to an earlier point about needing more information to understand the extent to which the disease incidence is occurring, can you talk about what types of information you would need for better monitoring?

EB: (…). You need to have a very good surveillance system and to react very early, and in terms of logistics it's a real challenge. And for that, we need to better understand what the risk factors are for having these outbreaks in each district. And among these risk factors, this is clear that there are climate and environmental-linked factors, so better understanding what the risk factors for having an outbreak in a district are will allow us to avoid cases (…). Now, we have a new vaccine coming, which is a conjugate vaccine, and this conjugate vaccine, which will make possible a real preventive vaccination. The introduction plan will last ten years for covering all of the Meningitis Belt, representing more or less 300 million people. And what we would like to do is to make our introduction plan very close and to be able (and) to define the highest risk area in the Belt, for starting the introduction of this vaccine depending on the highest risk carrier.

FF: Why do you need to do that?

EB: Only because we have only one producer of this vaccine and it cannot produce vaccine for (the entire) Belt in the wide shot, so we need to start with the highest risk area, and for that we need to understand what the risk factors are, the geographical and climatic risk factors, for defining what are these highest risk areas. So even regarding this new vaccine coming, we are going to need to better understand the risk factors, including climate and environment. So whatever the strategy we are talking about, reactive vaccination or preventive vaccination, we need to better understand what are the links between environment and the disease (…).

FF: The vaccine doesn't have to be administered at the onset of the outbreaks, right? It could be a year-round process?

EB: Yes. So what we are going to do with this new vaccine, we are first going to make a catch-up of campaign, covering all the population under 30 years old, and then we'll introduce this new vaccine in the standard program of immunization with measles, polio and diphtheria and so on. So, there will be two strategies at the same time, and thanks to that we'll be able to protect also the children under two years old because this was a problem with the old vaccine, it was not efficient on children under two years old, so these children were not protected with the old vaccine.

FF: So for new children being born, this vaccine will be part of the routine immunization program?

EB: Exactly. So it will be a routine immunization. And the last point maybe is that this new vaccine only targets one serogroup which is the most frequent in Africa, serogroup A. It doesn't mean that we'll be able to eradicate all the outbreaks, because we can have outbreaks with other serogroups, like serogroups C or W, and for these serogroups, we'll continue to use this reactive vaccination with the old vaccine. So it means what we invest in terms of this link to climate, trying to identify the risk factors, it will still be in use in the coming

years, because of these reactive vaccinations that we maintain for the other serogroups.

Upcoming Training Courses

Workshop on Tailoring of Seasonal Forecasts: Training Experts in the Climate Predictability Tool, Beijing, China, October 19-30, 2009.

This two-week training workshop is organized by the IRI in partnership with the World Meteorological Organization (WMO) Commission for Climatology. It will be held at the Beijing Climate Center. This workshop will train seasonal forecast specialists to support National Meteorological Services in providing high quality, tailored seasonal forecast information to public health, water resources, and agriculture, using, notably, the IRI's Climate Predictability Tool (CPT). More information can be found here.

Climate Information for Public Health, Madagascar, October, 2009, and Ethiopia, December, 2009.

Following SI 09, similar courses on Climate Information for Public Health will be held in French and English in Madagascar (Oct. 09) and Ethiopia (Dec.09). Both of these trainings will be conducted by the local Climate and Health Working Groups (CHWG) developed in collaboration with the IRI; both will use materials adapted from the SI 09.

In Madagascar, about 20 researchers, public health or meteorological practitioners, and officers from international organizations will attend the training course, sponsored by the World Meteorological Organization (WMO). These participants are involved in the Madagascar CHWG, whose current work mostly focuses on outbreak-prone diseases such as malaria, Rift Valley Fever and plague.

Predicting the Climate of the Coming Decades, Miami, FL/USA, January 11-15, 2010.

This workshop is organized by the Climate Variability and Predictability World Climate Programme (CLIVAR); it will be held at the Rosenstiel School of Marine and Atmospheric Sciences. The goal of this workshop is to bring together people from different communities who have shared interests in predicting the climate of the coming decades. Discussions will focus on bridging the gap between what is feasible from a technical and scientific perspective and the realities of what kind of information users need. Further details will be forthcoming on http://www.clivar.org.

Upcoming Events

The third World Climate Conference, Geneva, Switzerland, August 31st to September 4th, 2009.

The third World Climate Conference-3 (**WCC-3**) is organized by the World Meteorological Organization (WMO). WCC-3 will implement a Global Framework for Climate Services (GFCS) on Observation and Monitoring; Climate Research and Modeling; Climate Services Information System; and Climate Services Application. This initiative aims to significantly improve climate adaptation and climate risk management. The IRI is working with the WHO to lead a panel discussion on Climate and Human Health.

The third MERIT Technical Meeting, Niamey, Niger, 9-10 November, 2009.

The meeting will be hosted by the Centre de Recherche Médicale et Sanitaire (CERMES) and the African Centre for Meteorological Applications in Development (ACMAD) in partnership with the MERIT steering committee. This meeting will update on current research projects and advance operational activities for supporting preparedness and control strategies for meningococcal meningitis epidemics in the Meningitis Belt region. The meeting will be followed by a national MERIT workshop on 11-12 November to engage national health practitioners, meteorological staff and medical students with current MERIT-related activities in Niger. Further details will be forthcoming on http://merit.hc-foundation.org .

The 5th Multilateral Initiative on Malaria (MIM) Pan-African Malaria Conference, Nairobi, Kenya, 2-6 November 2009.

MIM Pan-African Malaria Conference (PAMC) is open to all malaria researchers and control experts from malaria endemic countries in Africa, Asia, and Latin America and the Caribbean, as well as malaria researchers, science administrators, and representatives from private foundations, governments and international organizations throughout the world. The deadline for late breaker abstract submission is September 18th, 2009. More information can be found here.

Recent Publications

Climate Literacy: The essential principles of climate sciences. The National Science Education Standards (NSES) and the American Association for the Advancement of Science (AAAS). March 2009.

This guide promotes greater climate science literacy by providing an educational framework of principles and concepts. Development of the guide began at a workshop

sponsored by the National Oceanic and Atmospheric Administration (NOAA) and the American Association for the Advancement of Science (AAAS). Multiple science agencies, non-governmental organizations, and numerous individuals also contributed to this report.

Climate change and social determinants of health: two interlinked agendas. Galvão LAC, Edwards S, Corvalan C, Fortune K, Akerman M. Pan American Health Organization PAHO/WHO – Area of Sustainable Development and Environment. Global Health Promotion 1757-9759; Supp (1): 81–84; 103761 SAGE Publications 2009.

This document addresses the issues of sustainable development through, notably, its connections to environment and climate change at country and community level (*e.g.,* increases in the frequency and intensity of extreme climate events, modifications in the distribution of vector-borne diseases).

Social and governance dimensions of climate change: implications for policy. Foa R. The World Bank Social Development Department & Development Economics World Development Report Team. May 2009.

This paper was jointly commissioned by the World Bank's Social Development Department and World Development Report Team as a background paper for the World Development Report 2010: Development in a Changing Climate. It addresses the two key issues in the debate on adaptation to climate change: how can countries (i) prepare to manage the impact of climate-change induced natural disasters and (ii) ensure that they have the governmental institutions required to manage the phenomenal challenge of adaptation to climate change.

The spatial and temporal patterns of *falciparum* and *vivax* malaria in Peru: 1994-2006.Chowell G, Munayco CV, Escalante AA, McKenzie FE. Malar J. 2009 Jun 27;8(1):142.

This article describes an analysis of the weekly number of malaria cases in Peru in conjunction with demographic, geographic and climatologic data.

Climate variability, global change, immunity, and the dynamics of infectious diseases. Dobson A. Ecology. 2009 Apr;90(4):920-7.

This paper explores the ecological interactions that impact the links between climate change and transmission of infectious diseases, using a systemic approach. No full-text is available without subscription.

Linking deforestation to malaria in the Amazon: characterization of the breeding habitat of the principal malaria vector, *Anopheles darlingi*. Vittor AY, Pan W, Gilman RH, Tielsch J, Glass G, Shields T, Sánchez-Lozano W, Pinedo VV, Salas-Cobos E, Flores S, Patz JA. Am J Trop Med Hyg. 2009 Jul;81(1):5-12.

This study examined the larval breeding habitat of a major South American malaria vector, *Anopheles darlingi*, in areas with varying degrees of ecologic alteration in the Peruvian Amazon. The authors concluded that deforestation and associated ecologic alterations are conducive to *A. darlingi* larval presence, and thereby increase malaria risk. Full-text is also available at: http://tinyurl.com/lxxdeu .

Spatial and temporal distribution of the malaria mosquito *Anopheles arabiensis* in northern Sudan: influence of environmental factors and implications for vector control. Ageep TB, Cox J, Hassan MM, Knols BG, Benedict MQ, Malcolm CA, Babiker A, El Sayed BB. Malar J. 2009 Jun 7;8:123.

This research identified the breeding sites and seasonal dynamics of *Anopheles arabiensis* in Northern State, Sudan, using sophisticated remote sensing and GIS/GPS systems for data collection. Quantitative estimates of the contributions of various habitat types and their proximity to settlements provided a basis for planning a strategy for reducing malaria risk by elimination of the vector population. Full-text is also available from: http://tinyurl.com/ljspy4.

Spatial and temporal distribution of *falciparum* malaria in China. Lin H, Lu L, Tian L, Zhou S, Wu H, Bi Y, Ho SC, Liu Q. Malar J. 2009 Jun 12;8:130.

This paper analyzed the geographic distribution, demographic patterns and time trends of *falciparum* malaria in China using routine surveillance data (1992-2005), geographic information system and time-series analysis.

Epidemiological situation of malaria in Madagascar: baseline data for monitoring the impact of malaria control programmes using serological markers. Razakandrainibe R, Thonier V, Ratsimbasoa A, Rakotomalala E, Ravaoarisoa E, Raherinjafy R, Andrianantenaina H, Voahanginirina O, Rahasana TE, Carod JF, Domarle O, Menard D. Acta Trop. 2009 Aug;111(2):160-7.

This study provided baseline information of the epidemiological situation of malaria in Madagascar using serological markers. With regular testing in the same target populations, this data may be useful for managing the elimination strategy supported by the Malagasy Government.

Global Climate Change Impacts in the United States. United States Global Change Research Program (2009).

Authored by 31 scientists from government and academia, this report provides the most comprehensive, robust, and up-to-date summary of how climate change will affect the various regions of the US (Northeast, Southeast, Midwest, Great Plains, Southwest, Northwest, Islands, Alaska, Coasts) as well as many important sectors (water, agriculture, transportation, ecosystems, health, and society). A live webcast of the release, featuring talks by John Holdren and Jane Lubchenco, can be accessed here. This site also features the full report, powerpoint slides, two-page regional summaries, and high resolution figures for use in speaking engagements.

Effectiveness of research training workshop taught by traditional and video-teleconference methods in a developing country. Dodani S, Kazmi KA, Laporte RE, Wilson JP. Glob Public Health. 2009;4(1):82-93; quiz 94-5.

In response to the issue of the lack of local expertise and "brain drain" in developing countries, this study assesses the effectiveness of two different methods of research training to health-care professionals in Pakistan: face-to-face and video-teleconferencing methods.

Related Links

http://iri.columbia.edu/education/summerinstitute09

http://blogs.ei.columbia.edu/climate/2009/06/09/climate-and-meningitis-in-africa/

http://www.mailman.columbia.edu/

http://www.mailman.columbia.edu/ehs/index.html

http://www.ciesin.columbia.edu/

www.hc-foundation.org/merit.html

http://www.cermes.net/cermes

http://www.acmad.ne

Contact Information

Please contact cipha@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 October 20th, 2009.**

If you have questions about IRI activities, please visit our Home Page.

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