

## **Report on the e-ASIA Workshop on Infectious Diseases**

### **1. Significance of Research in this Field**

Infectious diseases cause 24% of all deaths worldwide and present an ever growing challenge in East Asia. During this workshop, it was noted that diseases like cholera, malaria, dengue fever, influenza, HIV/AIDS, diarrhea and tuberculosis affect many millions of people across the region, and occur irrespective of national borders. There is also a worrying trend of emerging drug-resistant pathogens, unaffected by currently available treatments for many of these diseases (e.g. malaria), which further compounds the challenge in this region. Moreover, there are several 'neglected diseases', investigated to a lesser extent worldwide because they do not occur in wealthier countries where most research is conducted, which pose a particular challenge in East Asia.

With additional scientific knowledge and appropriate and timely diagnosis and treatment, many of the deaths that are currently caused by infectious diseases in East Asia can be avoided. However, with the particular inadequacy of basic and behavioral research, surveillance, diagnosis and treatment capabilities, in addition to a lack of trained health professionals and infectious disease scientists in many countries in this region, it is absolutely vital that research efforts are accelerated in order to expand fundamental knowledge, improve medical expertise and to produce new and effective drugs and diagnostics to tackle the huge challenge of infectious diseases in the East Asian region.

### **2. Necessity of International Collaboration and Expected Synergistic Effects**

Infectious diseases are widespread in the East Asian region and occur irrespective of national borders. International collaboration among experts in this research field is therefore particularly important if this challenge is to be overcome.

Geographical and cultural proximity, as well as epidemiological similarities in the diseases encountered between countries in East Asia make them ideal collaboration partners, and so we believe that there are ample opportunities for cooperation within the e-ASIA JRP.

Limited capacity for research, diagnosis and treatment in many of the participating researchers' countries was brought up as a pressing issue for infectious disease research in East Asia and one that should be addressed in the e-ASIA JRP. Whilst international research collaboration, allowing sharing of resources, can overcome these problems, joint projects could also include initiatives for the training of young scientists in member countries in order to build future capacity to tackle infectious diseases in East Asia.

It was noted by a show of hands that not all institutions represented at the workshop had robust measures in place in response to biosafety issues. This therefore highlights an important area for capacity building which should be addressed in the e-ASIA JRP.

Involvement of other non-health sectors (agriculture, forestry, energy, etc.) and the effective incorporation of various development and socio-economic data in infectious disease research was stressed as an important consideration, and could yield important synergistic results in any collaborative research project.

### **3. Identified Areas for Potential Research Cooperation**

#### *a. Malaria and dengue fever*

The mosquito-borne diseases malaria and dengue fever are strong candidates for collaborative research in the East Asian region, with most of the participants representing institutions that contribute significant resources towards research into these diseases. With the emergence of drug-resistant malaria in East Asia, the need for research in this area is even more pressing. Currently, the UNITEDengue network (which focuses on cross-border surveillance, capacity building and knowledge and information sharing to control dengue fever) comprises partners from Singapore, Malaysia and Brunei, and is looking to expand. It was suggested that Cambodia and Indonesia also take part in that initiative, and that a joint proposal could build on this already-established network to investigate development of early warning systems for dengue epidemics, improved laboratory diagnostics and viral sequencing. Collaboration in these areas may include Cambodia, Indonesia, Japan, Lao PDR, Myanmar, Singapore and Vietnam.

#### *b. Food hygiene*

The food hygiene practices of vendors who operate in the streets and from small establishments are of great importance to avoiding incidences of various kinds of food- and water-borne infectious diseases. Collaboration in this area may include Singapore, Japan, Cambodia and Myanmar.

#### *c. Emerging zoonotic diseases including Leptospirosis*

Infectious diseases transmitted between species that are increasing in incidence, in particular avian flu and Leptospirosis, are a major concern in the East Asian region and likely potential areas for research collaboration. Efforts for surveillance to predict and prepare for future outbreaks of various zoonoses, and vaccine development would be most pertinent. Leptospirosis is one of the most common zoonoses, and is still widely overlooked and unreported. Further research is needed especially in clarifying the distribution and epidemiology of the infection and in the development of rapid diagnostic kits. Collaboration in these areas may include Cambodia, Japan, Singapore, Myanmar, Thailand and Vietnam.

### **4. Questions and Clarification on the e-ASIA JRP**

The main form of support for joint research projects in the e-ASIA JRP is by 'matching funds': each funding agency involved provides support to researchers from their

own country (i.e. the Thai agency supports researchers resident in Thailand only), but the amount provided by each agency does not need to be identical. In response to specific budgets prepared by the applicant investigators, each agency provides support in keeping with their own rules and regulations. The details of support for each cooperative project (i.e. how much is provided to which collaborators, what funds can be spent on, etc.) is decided among the funding agencies once the projects have been selected.

Forms of cooperation other than 'matching funds' for new collaborative research projects are also possible. Countries can cooperate by providing funds to their researchers to work in already-established projects abroad (i.e. research exchange for PhD students), and can exchange information and knowledge on best-practices or convene scientific meetings and conferences. In principle however, funds do not cross international borders. So, in cases where researchers are seeking funds from Japan to support research collaborations, they should instead consider applying to SATREPS.

The next step for researchers from non-member countries to get involved in this program is to contact public funding agencies in their own countries to show their interest and to advocate that the agency join the e-ASIA JRP as a member. This is a bottom-up process, and some funding agencies have said that they will only join if researchers show an interest.

The participants of the "Workshop on Infectious Diseases" are listed as follows:

#### *Cambodia*

Dr. Bun Sreng, Chief of Bureau, Department of Communicable Disease Control, Ministry of Health

#### *Japan*

Dr. Kiyoshi Kita, Professor, Graduate School of Medicine, University of Tokyo (*Discussion Moderator and JST Program Officer*)

Dr. Tomoyoshi Nozaki, Director, Department of Parasitology, National Institute of Infectious Diseases

Dr. Shin-ichi Yoshida, Professor, Department of Bacteriology, Faculty of Medical Sciences, Kyushu University

#### *Lao PDR*

Dr. Haykhame Keokanchanh, Department of Disease Control, Ministry of Health

Dr. Phonesavanh Philasouk, Department of Disease Control, Ministry of Health

Dr. Nouannipha Simmalavong, Department of Disease Control, Ministry of Health

#### *Myanmar*

Dr. Nang Nandar Maung, Lecturer, Mandalay Technological University

*Singapore*

Dr. Antara Chakraborty, School of Applied Sciences, Republic Polytechnic

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Environmental Health Institute, National Environment Agency

Dr. David Lee, Head of the Vector-Borne Diseases Research Programme, Environmental  
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Mr. Gray Handley, Associate Director for International Research Affairs, National  
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*Vietnam*

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Observers

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Mr. Shinichi Takenaka, Department of International Cooperation, Japan Anti  
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Ms. Ai Li Quake, Manager, Saw Swee Hock School of Public Health

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