



ASIA-PACIFIC NETWORK FOR
GLOBAL CHANGE RESEARCH

- Making a Difference -

Scientific Capacity Building & Enhancement for Sustainable Development in Developing Countries

Final Report

Project Reference Number: CBA2012-09NMY-Hashim
CBA2013-02CMY-Hashim

GLOBAL ENVIRONMENTAL CHANGE AND HUMAN HEALTH: EXTREME WEATHER EVENTS AND URBANIZATION IN THE APN REGION

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Project Reference Number: CBA2013-02CMY-Hashim

"Global Environmental Change and Human Health: Extreme Events and Urbanization in the APN Region"

Final Report submitted to APN

OVERVIEW OF PROJECT WORK AND OUTCOMES

Non-technical summary

The project was aimed to enhance the scientific capacity of young scientists from the Asia-Pacific region to improve their decision-making and public-awareness capability within the context of sustainable development. In Year 1, a Symposium and Workshop on Global Environmental Change and Human Health was held in Kuala Lumpur from 14th to 18th January 2013. The theme of the Symposium and Workshop was extreme events and urbanisation. Twenty-four young scientists from Malaysia, Indonesia, Thailand, Cambodia, Lao PDR, Vietnam, Philippines, China and Australia participated. They presented their country reports and 3 research proposals. As outcomes, a montage on Global Environmental Change and Human Health has been produced, and a special issue of the Asia Pacific Journal of Public Health on Global Environmental Change and Human Health will be published in early 2016. In Year 2, from 23rd to 25th March 2015, a Science Policy Dialogue on Emergency Preparedness and Management of Health Impacts of Extreme Weather Events in the Asia Pacific Region was held in Kuala Lumpur. The Dialogue was attended by 25 local and foreign participants from Malaysia, Australia, Thailand and China. The objective was to solicit new and pertinent knowledge and information on emergency preparedness and management of the health impacts of extreme weather events that can be disseminated to policy makers and relevant stakeholders.

Keywords

Global, environmental change, human health, extreme event, urbanisation.

Objectives

The main objectives of the project were:

- 1) to foster intra/interregional cooperation networks of researchers/practitioners with expertise on the impact of extreme events and urbanization on human health;
- 2) to boost global health and environmental research aimed at the development of adaptation and mitigation strategies;
- 3) to develop new capacities on the health/environment nexus;
- 4) to enable science/policy interface; and
- 5) to raise awareness within the non-science communities.

Amount received and number years supported

The Grant awarded to this project was:

The Grant awarded to this project was:

US\$ 42,495.00 for Year 1

US\$ 14,470 for Year 2

Activity undertaken

In Year 1 of the Project, a Symposium and Workshop on Global Environmental Change and Human Health was held in Kuala Lumpur from 14th to 18th January 2013. The main organizers were the International Institute for Global Health (UNU-IIGH) and the Institute for Water, Environment and Health (UNU-INWEH) of the United Nations University, as well as the Global Environmental Change and Human (GECHH) Project. It involved a 2-day symposium, followed by a day of field visits, and culminating in a 2-day workshop. The theme of the Symposium and Workshop was extreme events

and urbanisation. Under APN's sponsorship, 24 young scientists from Malaysia, Indonesia, Thailand, Cambodia, Lao PDR, Vietnam, Philippines, China and Australia participated in the events.

The Symposium was attended by about 50 participants. It was highlighted by presentations from 8 international speakers on topics related to forecasting and preparedness, emergency response, and mitigation and adaptation, in relation to extreme events and urbanisation. A breakout session was organized around the 3 topics and each of the 3 breakout groups made a presentation on their deliberations.

A field visit was organized to the Kuala Lumpur City Hall where participants were briefed on urban planning of the city including a demonstration of the city's traffic control system. Next, they visited the National Hydraulic Research Institute of Malaysia (NAHRIM) where participants were briefed on the role and function of NAHRIM in climate change research and prediction, followed by a visit to their Hydraulic Research Laboratory.

Following the Symposium, a 2-day Workshop was organized for the 24 young scientists. Five international speakers presented on various topics related to climate change, extreme events and urbanisation. Participants from each country presented their country report. They were then divided into 3 groups to work on research proposals based on the themes of extreme events due to climate change, environmental impacts of urbanisation and environmental change and human health. Each group then presented their research proposal which was evaluated and commented by the international experts.

In Year 2 of the Project, from 23rd to 25th March 2015, a Science Policy Dialogue on Emergency Preparedness and Management of Health Impacts of Extreme Weather Events in the Asia Pacific Region was held in Kuala Lumpur, Malaysia. The Dialogue represents the second phase of the APN-funded project entitled "Global Environmental Change and Human Health: Extreme Events and Urbanization in the APN Region." The Dialogue was attended by 25 local and foreign participants from Malaysia, Australia, Thailand and China. The objective of the Dialogue was to solicit new and pertinent knowledge and information on emergency preparedness and management of the health impacts of extreme weather events that can be disseminated to policy makers and relevant stakeholders for the purpose of mitigating and adapting to increasing threats of extreme weather events in the Asia Pacific Region.

Three overseas and four local speakers gave presentations on various topics related to the Dialogue. Four work groups deliberated on climate projection and weather forecasting, impacts, emergency preparedness and response, and mitigation and adaptation. These work groups have generated write-ups which will be compiled into a policy brief that will be published in early 2016.

Results

As an outcome of the Symposium and Workshop conducted in Year 1 of the Project, a montage on Global Environmental Change and Human Health has been produced and uploaded to Youtube, and a special issue of the Asia Pacific Journal of Public Health (APJPH) on Global Environmental Change and Human Health will be published in early 2016. The APJPH has an ISI journal impact factor of 1.06. Some of the contributing authors were those who participated in the Symposium and Workshop, while others are experts in their fields. As an outcome of the Science Policy Dialogue conducted in Year 2 of the Project, group write-ups which will be compiled into a policy brief that will be published in early 2016. APN will be credited accordingly in the publication of both information and scientific media.

Relevance to the APN Goals, Science Agenda and to Policy Processes

This is basically a capacity development project whereby we trained 24 young scientists from 9 countries in the Asia Pacific region. The focus of the capacity development is on global environmental change related to extreme weather events and urbanisation and their consequential impacts on human health which should be an important scientific agenda and policy in many developing countries of the Asia Pacific Region. The production of an educational montage, a special issue journal and a policy brief on the topic should help influence policy makers in the region on the importance of addressing this public health concern.

Self evaluation

In Year 1 of the Project, the target of organizing and hosting of the Symposium and Workshop on Global Environmental Change and Human Health was very successful and well received by the young scientists and participant attending both events. A significant proportion of the APN's allocated funding for 2012/13 goes to the payment of airfares and per diems for some of the invited speakers and young scientists. There was a delay in the production of montage and publication of the journal articles. A project extension for Year 1 was requested from and granted by APN.

In Year 2 of the Project, the success of the Science Policy Dialogue was commendable. It was attended by local and foreign experts from 4 countries. The presentations were well received and the working group deliberations were highly productive. We hope to produce a highly informative policy brief as an outcome.

Potential for further work

We plan to engage the young scientists who were trained in the Symposium and Workshop as well as the experts in future training and research work on climate change and urbanisation.

Publications (please write the complete citation)

- 1) A montage on Global Environmental Change and Human Health has been uploaded to Youtube.
- 2) Six articles on the theme of Global Environmental Change and Human Health has been published online in the special issue of the Asia Pacific Journal of Public Health (APJPH). The hard copy of the journal will be published in early 2016. The APJPH has an ISI journal impact factor of 1.06.

References

Not applicable as no research work was carried out.

Acknowledgments

The collaborators of this project would like to acknowledge the following organisations which have contributed to this project :

United Nations University-International Institute for Global Health, Kuala Lumpur, Malaysia.

United Nations University-Institute for Water, Environment and Health, Hamilton, Canada.

Institute for Land, Water and Society, Charles Sturt University, Albury, Australia.

Chinese Academy of Sciences-Institute of Geographic Sciences and Natural Resources Research,

Beijing, China.

Wetlands International-South Asia, New Delhi, India.

Preface

The project was aimed to enhance the scientific capacity of young scientists from the Asia-Pacific region to improve their decision-making and public-awareness capability within the context of sustainable development. In Year 1, a Symposium and Workshop on Global Environmental Change and Human Health was held in Kuala Lumpur from 14th to 18th January 2013. The theme of the Symposium and Workshop was extreme events and urbanisation. Twenty-four young scientists from Malaysia, Indonesia, Thailand, Cambodia, Lao PDR, Vietnam, Philippines, China and Australia participated. They presented their country reports and 3 research proposals. As outcomes, a montage on Global Environmental Change and Human Health has been produced, and a special issue of the Asia Pacific Journal of Public Health on Global Environmental Change and Human Health will be published in early 2016. In Year 2, from 23rd to 25th March 2015, a Science Policy Dialogue on Emergency Preparedness and Management of Health Impacts of Extreme Weather Events in the Asia Pacific Region was held in Kuala Lumpur. The Dialogue was attended by 25 local and foreign participants from Malaysia, Australia, Thailand and China. The objective was to solicit new and pertinent knowledge and information on emergency preparedness and management of the health impacts of extreme weather events that can be disseminated to policy makers and relevant stakeholders.

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1.0 Introduction

The proposed activity was intended to enhance the scientific capacity of young scientists from the Asia-Pacific region, especially those from the developing countries, and to improve their decision-making and public-awareness capability within the context of sustainable development.

During Year 1 of the Project, a Symposium and Workshop on Global Environmental Change and Human Health was held in Kuala Lumpur from 14th to 18th January 2013. The main organizers were the International Institute for Global Health (UNU-IIGH) and the Institute for Water, Environment and Health (UNU-INWEH) of the United Nations University, as well as the Global Environmental Change and Human (GECHH) Project. It involved a 2-day symposium, followed by a day of field visits, and culminating in a 2-day workshop. The theme of the Symposium and Workshop was extreme events and urbanisation. Under APN's sponsorship, 24 young scientists from Malaysia, Indonesia, Thailand, Cambodia, Lao PDR, Vietnam, Philippines, China and Australia participated in the 2 events. Eight international speakers gave presentations at the 2 events. The young scientists presented their country reports. They also worked on and presented 3 research proposals which were evaluated and commented by the international experts.

In Year 2 of the Project, from 23rd to 25th March 2015, a Science Policy Dialogue on Emergency Preparedness and Management of Health Impacts of Extreme Weather Events in the Asia Pacific Region was held at the United Nations University-International Institute for Global Health's Building in Kuala Lumpur, Malaysia. The Dialogue was attended by 25 local and foreign participants from Malaysia, Australia, Thailand and China. The objective of the Dialogue was to solicit new and pertinent knowledge and information on emergency preparedness and management of the health impacts of extreme weather events that can be disseminated to policy makers and relevant stakeholders for the purpose of mitigating and adapting to increasing threats of extreme weather events in the Asia Pacific Region. An outcome of this Science Policy Dialogue will be a policy brief that will be published in early 2016.

1.1 Project Objectives

The main objectives of the Project were:

- 6) to foster intra/interregional cooperation networks of researchers/practitioners with expertise on the impact of extreme events and urbanization on human health;
- 7) to boost global health and environmental research aimed at the development of adaptation and mitigation strategies;
- 8) to develop new capacities on the health/environment nexus;
- 9) to enable science/policy interface; and
- 10) to raise awareness within the non-science communities.

2.0 Methodology

Year 1 activities of the Project kicked off with a Symposium and Workshop on Global Environmental Change and Human Health, which was held in Kuala Lumpur from 14th to 18th January 2013. The main organizers were the International Institute for Global Health (UNU-IIGH) and the Institute for Water, Environment and Health (UNU-INWEH) of the United Nations University, as well as the Global Environmental Change and Human (GECHH) Project. It involved a 2-day symposium, followed by a day of field visits, and culminating in a 2-day workshop. The theme of the Symposium and Workshop was extreme events and urbanization. Under APN's sponsorship, 24 young scientists from Malaysia, Indonesia, Thailand, Cambodia, Lao PDR, Vietnam, Philippines, China and Australia participated in the events. Personal particulars on these young scientists are given in Appendix 1.

The Symposium was attended by about 50 participants including speakers, invited participants and local students. It was highlighted by presentations from 8 international speakers on topics related to forecasting and preparedness, emergency response, and mitigation and adaptation, in relation to extreme events and urbanisation. A breakout session was organized around the 3 topics and each of the 3 breakout groups made a presentation on their deliberations.

A field visit was organized to the Kuala Lumpur City Hall where participants were briefed on urban planning of the city including a demonstration of the city's traffic control system. Next, they visited the National Hydraulic Research Institute of Malaysia (NAHRIM) where participants were briefed on the role and function of NAHRIM in climate change research and prediction, followed by a visit to their Hydraulic Research Laboratory.

Following the Symposium, a 2-day Workshop was organized for the 24 young scientists. Five international speakers presented on various topics related to climate change, extreme events and urbanisation. Participants from each country presented their country report. They were then divided into 3 groups to work on research proposals based on the themes of extreme events due to climate change, environmental impacts of urbanisation and environmental change and human health. Each

group then presented their research proposal which was evaluated and commented by the international experts. The Symposium and Workshop Programmes are given in Appendix 2.

In Year 2 of the Project, from the 23rd to 25th of March 2015, a Science Policy Dialogue on Emergency Preparedness and Management of Health Impacts of Extreme Weather Events in the Asia Pacific Region was held at the United Nations University-International Institute for Global Health's Building in Kuala Lumpur, Malaysia. The Dialogue represents the second phase of the APN-funded project entitled "Global Environmental Change and Human Health: Extreme Events and Urbanization in the APN Region."

The Dialogue was attended by 25 local and foreign participants from Malaysia, Australia, Thailand and China. The objective of the Dialogue was to solicit new and pertinent knowledge and information on emergency preparedness and management of the health impacts of extreme weather events that can be disseminated to policy makers and relevant stakeholders for the purpose of mitigating and adapting to increasing threats of extreme weather events in the Asia Pacific Region. Three overseas and four local speakers gave presentations on various topics related to the Dialogue. Four work groups deliberated on climate projection and weather forecasting, impacts, emergency preparedness and response, and mitigation and adaptation. The programme for the Science Policy Dialogue is given in Appendix 3.

3.0 Results and Discussion

Both the Symposium and Workshop on Global Environmental Change and Human Health, which were held in Kuala Lumpur from 14th to 18th January 2013 were very successful. The 24 young scientists trained were young professionals, researchers and academicians in their respective countries. The 8 international speakers are well-known experts in their respective fields who managed to impart relevant knowledge to these young scientists. We believe the young scientists as well as all the other participants benefited greatly from their presentations, interactions and wisdom. Below are some photographs from the Symposium and Workshop.



Participants and trainers of the Symposium on Global Environmental Change and Human Health



Introduction of symposium participants



Symposium participants being briefed on Kuala Lumpur city planning



Symposium participants' visit to the Kuala Lumpur Traffic System Control Room of the Kuala Lumpur City Hall



Symposium participants' visit to the Hydraulic Research Laboratory of the National Hydraulic Research Institute of Malaysia (NAHRIM)



Young scientist participants of the Workshop on Global Environmental Change and Human Health



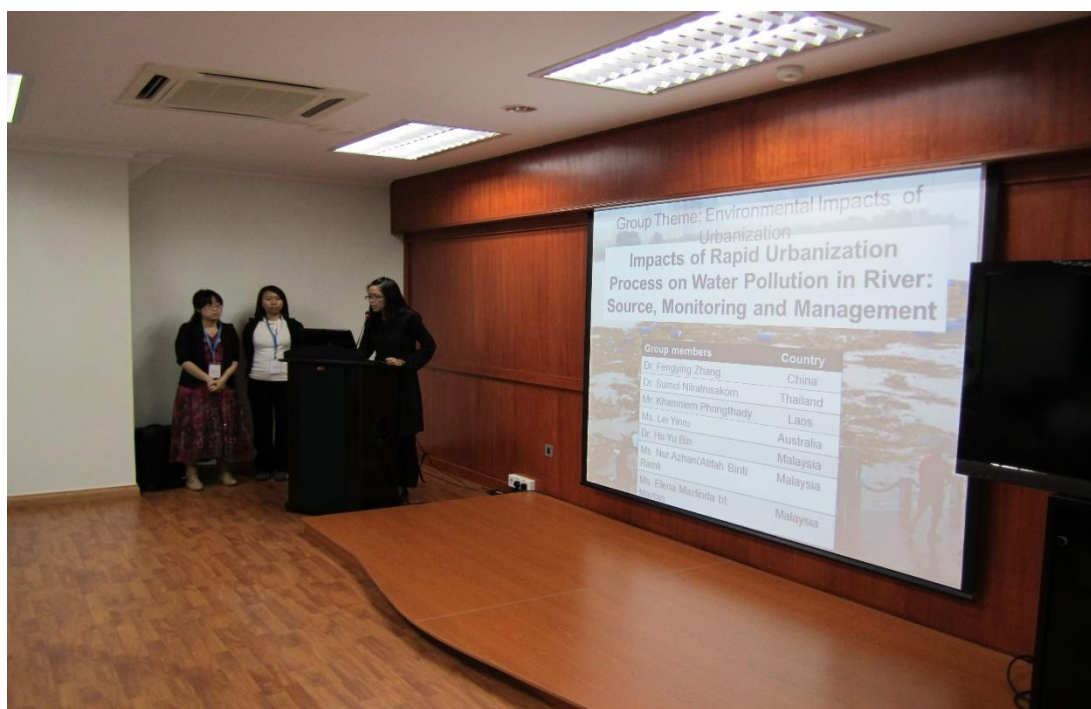
Young scientists attending a workshop lecture



Young scientists from the Philippines presenting their country report



Young scientist in a breakout group discussion



Young scientists presenting their group work

As an outcome of the Symposium and Workshop, a video montage on Global Environmental Change and Human Health has been produced. The video montage has been uploaded to Youtube and APN has been appropriately credited with its sponsorship. See the Youtube posting at <https://www.youtube.com/watch?v=GrRNEunQwWU>.

A special issue of the Asia Pacific Journal of Public Health (APJPH) on Global Environmental Change and Human Health is in the process of being published. However, 6 articles in the Special Issue has already been published online prior to publication. The APJPH has an ISI journal impact factor of 1.06. Some of the contributing authors were those who participated in the Symposium and Workshop, while others are experts in their fields. APN will be credited accordingly in editorial of the Special Issue which is currently being written. The 6 articles that have been published online are listed below:

1. Wang L., Liao Y., Yang L., Li H. Ye B. and Wang. W. (2014). Emergency response to and preparedness for extreme weather events and environmental changes in China. *Asia Pac J Public Health*, DOI: 10.1177/1010539514549763.
2. McIver L.J., Chan V.S., Bowen K.J., Iddings S.N., Hero K. and Raingsey P.P. (2014). Review of climate change and water-related diseases in Cambodia and findings from stakeholder knowledge assessments. *Asia Pac J Public Health*, DOI: 10.1177/1010539514558095.
3. Hassan N.A., Hashim Z. and Hashim J.H. (2015). Impact of climate change on air quality and public health in urban areas. *Asia Pac J Public Health*, DOI: 10.1177/1010539515592951.
4. Kjellstrom T. and Meng M. (2015). Impact of climate conditions on occupational health and related economic losses: A new feature of global and urban health in the context of climate change. *Asia Pac J Public Health*, DOI: 10.1177/10105395154568711.
5. Siri J.G., Newell B., Proust K. and Capon A. (2015). Urbanization, extreme events, and health: The case for systems approaches in mitigation, management, and response. *Asia Pac J Public Health*, DOI: 10.1177/1010539515595694.
6. Hashim J.H. and Hashim Z. (2015). Climate change, extreme weather events, and human health implications in the Asia Pacific Region. (2015). *Asia Pac J Public Health*, DOI: 10.1177/1010539515599030.

All 6 articles will be published together in a Special Issue of the APJPH in early 2016. The editorial of that Special Issue will acknowledge the role of APN in supporting and funding the Symposium and Workshop.

The Science Policy Dialogue on Emergency Preparedness and Management of Health Impacts of Extreme Weather Events in the Asia Pacific Region which was held on 23rd to 25th of March 2015 in Kuala Lumpur was also very successful. The four work groups which deliberated on climate projection and weather forecasting, impacts, emergency preparedness and response, and mitigation and adaptation have generated write-ups which will be compiled into a policy brief that will be published in early 2016. Below are some photographs from the Science Policy Dialogue.



Speakers and participants of the Science Policy Dialogue



Dialogue participants listening to a lecture



Dialogue participants in a work group working on the impacts of extreme weather events

4.0 Conclusions

The main objectives of the project were:

- 1) to foster intra/interregional cooperation networks of research/practitioners with expertise on the impact of extreme events and urbanisation on human health;
- 2) to boost global health and environmental research aimed at the development of adaptation and mitigation strategies;
- 3) to develop new capacities on the health/environment nexus;
- 4) to enable science/policy interface; and
- 5) to raise awareness within the non-science communities.

Basically, the first 3 objectives relate to activities that have been carried out in Year 1 of this project, and they have been successfully accomplished. For objective 1), we have managed to bring together 24 young scientists from 9 countries of the Asia Pacific region. This should help to foster the intra/interregional cooperation networks of research/practitioners.

Even though no research activity was carried out through this project, the Young Scientist Workshop managed to inculcate an awareness of research culture and relevance among the young scientists. Hopefully, they will be able to apply the knowledge gained to conduct research in their countries, aimed at the development of adaptation and mitigation strategies, as outlined in objective 2).

Objective 3), the new capacities developed will be the 24 young scientists trained through this project. Hopefully, they will become the impetus for other young scientists and professionals in this field.

Objectives 4) and 5) were the focus of Year 2 activity which were accomplished through the Science Policy Dialogue. This focused on the role of research towards enhancing adaptive capacity for the health care systems as well as for infrastructures, especially for developing countries. The 4 work groups deliberated and generated write-ups on climate projection and weather forecasting, impacts, emergency preparedness and response, and mitigation and adaptation and generated. These will be compiled into a policy brief that will be published in early 2016.

5.0 Future Directions

In the future, UNU-IIGH and UNU-INWEH will continue to train students, professionals and academicians on global environmental change and human health, focusing on extreme weather events and urbanisation. UNU-IIGH is also embarking on new research projects on climate change and health. If there are similar opportunities in the future, we would like to continue working with APN on these issues, as they apply to Asia Pacific countries.

6.0 References

Not applicable as no research was carried out.

Appendix 1

List of Young Scientists

No.	Name	Organization	Address	Tel No.	Fax No.	Email
1	Lei Yinru	Charles Sturt University	PO Box 789, Albury, New South Wales, 2640 Australia	+61 0406665121	+61 02 60519897	ylei@csu.edu.au
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Appendix 2

Conferences/Symposia/Workshops

Global Environmental Change and Human Health: Extreme Events and Urbanisation in the APN Region

Date: January 14th and 15th, 2013

Location: United Nations University – International Institute for Global Health (UNU-IIGH) and the National University of Malaysia (UKM)

Context

In the Asia Pacific region, extreme weather events, earthquakes and tsunamis have led to loss of life, damaged infrastructure and human health impacts. Climate change is contributing to the frequency and severity of many of these extreme events (Yusuf & Francisco, 2009, Climate Change Vulnerability Mapping for Southeast Asia, IDRC). Adverse effects on human health include traumatic injuries, outbreaks of infectious diseases, increased mortality and morbidity caused by damage to urban infrastructure and deteriorating mental health. The vulnerability of urban populations to adverse effects on human health from extreme events is dependent on both the sensitivity and the adaptive capacity of the populations. Both of these variables are influenced by the regional capacity for forecasting and preparedness, emergency response and strategies for mitigation and adaptation.

Extreme Events and Health Security

This symposium is designed to provide the opportunity for experts to share their experiences and knowledge on one of the following themes: forecasting and preparedness; emergency response or mitigation and adaptation. These themes will contribute to understanding how these strategies can contribute to improving health security before, during and after extreme events.

During this two day symposium, experts will give presentations on one of these themes, with a focus on highlighting the impact on health outcomes resulting from extreme events in the Asia Pacific region. Health outcomes resulting from extreme events can be divided into the following areas:

- 1. Infectious diseases*
- 2. Health outcomes related to damage to infrastructure (e.g. water and sanitation, health care facilities, roads, power);*
- 3. Traumatic injuries; and*
- 4. Mental health*

Presenters are invited to speak on any of the above health outcomes within their designated themes (see attached draft agenda).

Global Environmental Change and Human Health: “Extreme Events and Urbanisation in the APN Region.”

Symposium Programme

Day 1: January 14, 2013

9:00 – 9:30	<i>Welcome to the Symposium from Prof. Dr. Chris Metcalfe on behalf of UNU-INWEH and Dr. Mohamed Salleh Mohamed Yasin on behalf of UNU-IIGH</i>
9:30 – 10:00	<i>Introduction to the symposium theme of “extreme events and urbanisation” and the subthemes of: forecasting and preparedness; emergency response; mitigation and adaptation</i> <i>Prof. Dr. Chris Metcalfe, UNU-INWEH</i>
10:00 – 10:20	<i>Presentation on the historical context of extreme events in Southeast Asia and future eventualities</i> <i>Prof. Dr. Jamal Hisham Hashim, Research Fellow, UNU-IIGH</i>
10:20 – 10:30	<i>Break</i>
10:30 – 11:40	Theme 1: Forecasting and Preparedness <i>Keynote (30 min): Mr. Ritesh Kumar, Conservation Programme Manager and Acting Director Wetlands International – South Asia, India</i> <i>Discussants (20 minutes each)</i> <i>Professor Thomas Krafft, Co-Chair, International Geographical Union Commission on Health and the Environment</i> <i>Zenaida G. Delica-Willison, UNDP</i>
11:40 – 12:10	<i>Q & A</i>
12:10 – 1:30	<i>Lunch</i>
1:30 – 2:40	Theme 2: Emergency Response <i>Keynote (30 min): Prof. Dr. Wuyi Wang, Co-Chair, International Geographical Union Commission on Health and the Environment</i> <i>Discussant (20 min): Dr. Shalimar Abdullah, Executive Council Member, Mercy Malaysia</i>
2:40 – 3:10	<i>Q & A</i>
3:10 – 3:30	<i>Final Comments and Closing</i>

Day 2: January 15, 2013

- 9:30 – 9:45 *Welcome, Summary of Key Points from Day 1, and Outline of Day Two*
Prof. Dr. Chris Metcalfe
- 9:45 – 10:15 **Theme 3: Mitigation and Adaptation**
Keynote (30 min) : Salmah Zakaria, Economic Affairs Officer, UNESCAP
Discussant (20 min): Dr. Anna Lukasiewicz, Social Researcher in Water Management, Postdoctoral Research Fellow, Institute for Land, Water and Society, Charles Sturt University, Australia
- 10:15 – 10:45 *Q & A*
- 10:45 – 11:00 *Break*
- 11:00 – 12:00 *Plenary Discussion – Key Points/Issues; Explain Breakout Sessions (Prof.Dr. Chris Metcalfe)*
- 12:00 – 1:00 *Lunch*
- 1:00 – 2:30 *Breakout Sessions (Chair)*
Each Breakout Session will look at:
 The gaps and needs with regards to the following areas (infectious diseases; health outcomes related to damage to infrastructure; traumatic injuries; and mental health – 30 minutes)
 Identify a set of research questions – 15 minutes
Theme 1: Forecasting and Preparedness (Prof. Dr. Jamal H. Hashim)
Theme 2: Emergency Response (Prof. Dr. Mark Rosenberg)
Theme 3: Mitigation and Adaptation (Prof. Dr. Chris Metcalfe)
- 2:30 – 2:45 *Break*
- 2:45 – 3:00 *Breakout Session Outcome Reporting (5 minutes each)*
Report provided by Session Chair
- 3:00 – 3:45 *Plenary Discussion on the Outcome Reporting and Moving Forward (Prof. Dr. Chris Metcalfe)*
- 3:45 – 4:00 *Final Comments and Closing*
Prof. Dr. Chris Metcalfe

Agenda/Programme (including title, date and venue)

Participants list (comprising contact details of each participant, including organisation, address, phone number, fax number, and email address).

Funding sources outside the APN

- 1) *United Nations University-International Institute for Global Health : Conference and workshop facilities, and transportation (approximately USD 3,500.00).*

- 2) *United Nations University-Institute for Water, Environment and Health : Travel and communications (approximately USD 7,000.00).*

**Global Environmental Change and Human Health:
Extreme Events and Urbanisation in the Asia Pacific Region
Young Scientist Training Workshop Program
January 17-18, 2013**

Day 1: January 17, 2013

Time	Topic	Speaker
9.00-9.15 am	Introductory remarks	Prof. Dr. Jamal Hisham Hashim
9.15-9.45 am	Climate change and extreme event	Prof. Dr. Mark Rosenberg Queen's University
9.45-10.15 am	Urbanisation and human health	Prof. Dr. Wuyi Wang Chinese Academy of Sciences
10.15-10.30 am	Q & A	
10.30-10.45 am	Tea break	
10.45-12.45 pm	Country reports (China, India, Australia, Indonesia, Philippines, Thailand)	Participants
12.45-2.00 pm	Lunch	
2.00-3.30 pm	Breakout session - Extreme events due to climate change - Environmental impacts of urbanisation - Environmental change and natural resource depletion - Environmental change and human health	Participants
3.30-3.45 pm	Tea break	
3.45-4.45 pm	Continue breakout session	Participants

Day 2: January 18, 2013

Time	Topic	Speaker
9.00-9.30 am	<i>Impact of climate change on human health</i>	<i>Prof. Dr. Jamal Hisham Hashim UNU-IIGH</i>
9.30-10.00 am	<i>Impact of environmental change on natural resources</i>	<i>Dr. Anna Lukasiewicz Charles Sturt University</i>
10.00-10.15 am	<i>Tea break</i>	
10.15-10.45 am	<i>Environmental conservation for sustainable development</i>	<i>Mr. Ritesh Kumar Wetlands International-South Asia</i>
10.45-11.15 am	<i>Q & A</i>	
11.15-12.35 pm	<i>Country reports (Malaysia, Cambodia, Vietnam and Laos)</i>	<i>Participants</i>
12.35-2.00 pm	<i>Lunch</i>	
2.00-3.20 pm	<i>Group presentations</i> <i>- Extreme events due to climate change</i> <i>- Environmental impacts of urbanisation</i> <i>- Environmental change and natural resource depletion</i> <i>- Environmental change and human health</i>	<i>Participants</i>
3.20-3.45 pm	<i>Tea break</i>	
3.45-4.15 pm	<i>Final comments and closing</i>	<i>Prof. Dr. Jamal Hisham Hashim</i>

Country reports :Participants from each of the 10 countries will present a 20-minute country report related to the topic of climate change, extreme event, urbanisation or natural resource management in their countries.

Group presentations : Each of the 4 groups of young scientists will discuss a research topic and proposal that would be relevant and implementable in their countries. The presentation should cover on research objectives, hypothesis and methodology (design, source of data/information, analysis)

**Global Environmental Change and Human Health:
Extreme Events and Urbanisation in the Asia Pacific Region
Young Scientist Training Workshop Program
January 17-18, 2013**

Instructions for Breakout Session

Each of the 4 groups of young scientists will discuss a research topic and proposal that would be relevant and implementable in their countries. Each group will comprise of 6 participants. The 20-minute presentation should cover on research topic, objectives, hypothesis and methodology (design, source of data/information, analysis).

Research Topic

- The research topic should be something that is of interest to you and your country.
- Be specific (e.g. impact of sea level rise on the coastal ecosystem of East Malaysia/Vietnam; padi farmers' perception and adaptation related to reduced rainfall).
- Preferably, something that is multi-centre, multi-country.

Research Objectives

- Comprise the general and specific objectives.
- A research objective should be something that is measurable (e.g. to measure the rate of deforestation/urbanisation/wetland ecosystem loss in km² per annum through remote sensing).

Research Hypotheses

- Hypotheses are developed from specific objectives.
- A temporary suggestion of the relationship between two or more study variables, generated through deduction (e.g. increase in temperature and rainfall due to climate change would increase the breeding of *Aedes aegypti*, which will subsequently increase the incidence of dengue fever).

Methodology

- Something that is doable.
- Design [cross-sectional, retrospective (historical data), prospective (modeling)].
- May employ quantitative or qualitative methods.
- May be based on primary or secondary data.

Data required

- What kind of data you need? (meteorological, satellite imagery, disease prevalence, mortality).*
- How can you get primary data? (interview questionnaires, focus group discussion).*
- Where can you get secondary data? (Department of Environment, notifiable disease registry).*

Stakeholders

- Policy makers*
- Government agencies*
- Public*
- Scientific community*
- Public*

Appendix 3

Science Policy Dialogue on Emergency Preparedness and Management of Health Impacts of Extreme Weather Events in the Asia Pacific Region.

Date: 23rd to 25th March 2015

Location: United Nations University – International Institute for Global Health (UNU-IIGH)

Prelude

In the Asia Pacific region, extreme weather events have led to loss of life, damaged infrastructure and human health impacts. Climate change is contributing to the frequency and severity of many of these extreme weather events. Adverse effects on human health include traumatic deaths and injuries, outbreaks of infectious diseases, increased mortality and morbidity caused by damage to urban infrastructure and deteriorating mental health. The vulnerability of populations to adverse effects on human health from extreme weather events is dependent on both the sensitivity and the adaptive capacity of the populations. Both of these variables are influenced by the regional capacity for forecasting and preparedness, emergency response and strategies for mitigation and adaptation.

Science Policy Dialogue

This Science Policy Dialogue is being organized to bring together stakeholders from the Asia Pacific region to share their experiences and knowledge on forecasting, emergency preparedness and response, management, mitigation and adaptation to extreme weather events and their impending health impacts. Examples will be drawn from extreme weather events in the region like Typhoon Haiyan in the Philippines and flooding events in China, Thailand and Malaysia.

Symposium Outcome

Following this Science Policy Dialogue, UNU-IIGH will be publishing a policy brief on the same topic.

Science Policy Dialogue on Emergency Preparedness and Management of Health Impacts of Extreme Weather Events in the Asia Pacific Region

Programme

Day 1 : 23rd March 2015

9:00 – 9:15 am	Welcoming address by Prof. Anthony Capon, Director, UNU-IIGH
9:15 – 9:45 am	Introduction to the Science Policy Dialogue theme and the order of business <i>Prof. Jamal H. Hashim , UNU-IIGH</i>
9:45 – 10:15 am	Historical context of extreme weather events in the Asia Pacific region <i>Prof. Jamal H. Hashim, UNU-IIGH</i>
10:15 – 10:45 am	Tea break / Group photo
10:45 – 11:15 am	Forecasting of extreme weather events <i>Mr. Ling Leong Kwok, Malaysian Meteorological Department</i>
11:15 – 11:45 am	Ecosystem impacts of extreme weather events and implications on human health and well-being <i>Prof. Max Finlayson, Charles Sturt University</i>
11:45 – 12:30 pm	Discussion on forecasting of extreme weather events and potential impacts
12:30 – 1:45 pm	Lunch
1:45 – 2:15 pm	Emergency preparedness and response to extreme weather events <i>Dr. Noor Adelyna Mohammed Akib, Centre for Global Sustainability Studies, Universiti Sains Malaysia</i>
2:15 – 2:45 pm	Disaster risk management of extreme weather events in the Asia Pacific Region <i>Dr. Salmah Zakaria, UNESCAP, Bangkok</i>
2:45 – 3:30 pm	Discussion on emergency preparedness, response and risk management extreme weather events
3:30 – 4:00 pm	Tea break
4:00 – 4:15 pm	Day 1 wrap-up

Day 2 : 24th March 2015

9:30 – 10:00 am	Environmental and health risks of flooding in China <i>Prof. Yang Linsheng, Chinese Academy of Sciences</i>
10:00 – 10:30 am	How communities cope and adapt to the impacts of extreme weather events <i>Dr. Atsuro Tsutsumi, UNU-IIGH</i>
10:30 – 11:00 am	Tea break
11:00 – 11:45 am	Discussion on mitigation and adaptation to extreme weather events
11:45 – 12:15 pm	Briefing on group tasks <i>Prof. Jamal H. Hashim , UNU-IIGH</i>
12:15 – 1:45 pm	Lunch
1:45 – 3:00 pm	Group work
3:00 – 3:30 pm	Tea break
3:00 – 4:30 pm	Group work-cont.
8.30 pm	Dinner (venue tbc)

Day 3 : 25th March 2015

9:30 – 9:45 am	Reassessment of group tasks <i>Prof. Jamal H. Hashim, UNU-IIGH</i>
9:45 – 10:30 am	Group work-cont.
10:30 – 11:00 am	Tea break
11:00 – 12:30 pm	Group work-cont.
12:30 – 1:45 pm	Lunch
1:45 – 3:00 pm	Group work-cont.
3:00 – 3:30 pm	Tea break
3:00 – 4:00 pm	Group presentations
4:00 – 4.15 pm	Final comments and closing <i>Prof. Jamal H. Hashim , UNU-IIGH</i>