

OVERVIEW

TRAINING WORKSHOPS

15th International Conference of the Pacific Basin Consortium for Environment and Health
September 24-27, 2013. East-West Center, Honolulu, Hawaii

Training Workshop I

Children's Environmental Health

Children are amongst the most vulnerable members of our society and are particularly vulnerable to adverse environmental exposures. In general, they receive a higher “dose” of toxicants in a given environment, are less able to neutralize toxicants and live long enough for diseases with long latency periods to manifest. This workshop will cover the principles underlying the vulnerability of children and will highlight risks in specific environments.

Training Workshop II

Integrated Environmental Health Impact Assessment

Assessing and managing health impact caused by environmental exposures of any population is a complex process. To enhance understanding and application of impact assessment and management based on multiple environmental exposures in populations such as indigenous populations (with increased and varying layers of vulnerabilities and susceptibilities), it is necessary to understand the integrative impact assessment process required to achieve meaningful results.

This workshop will discuss how environmental exposures posing risks associated with health outcomes are best assessed within an Integrated Environmental Health Impact Assessment process.

Training Workshop III

Water Systems, Rural Areas and Indigenous People

Water is becoming an increasingly scarce resource throughout the world. Sustainable use of water, including appropriate treatment and recycling, is critical to our well being. Workshop presentations will highlight experiences in providing affordable, low maintenance solutions to water supply and water/sanitation in areas without access to advanced technical solutions.

Training Workshop I

Children's Environmental Health

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Pacific Basin Consortium for Environment and Health

24-27 September 2013

Day 1 (24 Sep: Tuesday) 1:00 pm – 4:30 pm

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Why Children?

Maria Neira, World Health Organization

Children are not little adults.

Leith Sly, University of Queensland

Indoor and Outdoor air pollution.

Peter D. Sly, University of Queensland

Children Health Indicators.

Peter D. Sly, University of Queensland

Exposure to persistent toxic substances.

David Carpenter, University of Albany

Training Workshop II

Integrated Environmental Health Impact Assessment

Paul Jagals¹ and Colleen Lau²

¹ School of Population Health, University of Queensland

² Children's Health and Environment Program, Queensland Children's Medical Research Institute, University of Queensland

Honolulu Symposium Pacific Basin Consortium for Environment and Health

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IEHIA provides a framework for first understanding and then managing – through evidence-based interventions – the drivers and pressures of environmental risk factors, potential pathways of exposure and their associated health outcomes.

1 - 1:30 pm: Integrated Environmental Health Impact Assessment (IEHIA)

Based on a conceptual model of IEHIA suggested by Briggs (2008) (Fig 1), the application of an impact assessment (rather than risk assessment on its own) allows for a more integrated and comprehensive assessment approach that considers the multiple systems that determines a population's sustainable resilience or vulnerability, i.e. health, environment, society, economy and technology. These elements play dominating roles in how people become exposed to environmental hazards, and the interaction between these different risk systems in determining overall impact and / or predicting the extent of a health outcome.

A well-designed and implemented IEHIA provides more precise information about environmental health impact (detrimental as well as beneficial) across these systems, allows design and implementation of appropriate interventions towards reducing adverse (and enhancing beneficial) impact and ultimately provide evidence-based assessment of the potential impact of the interventions.

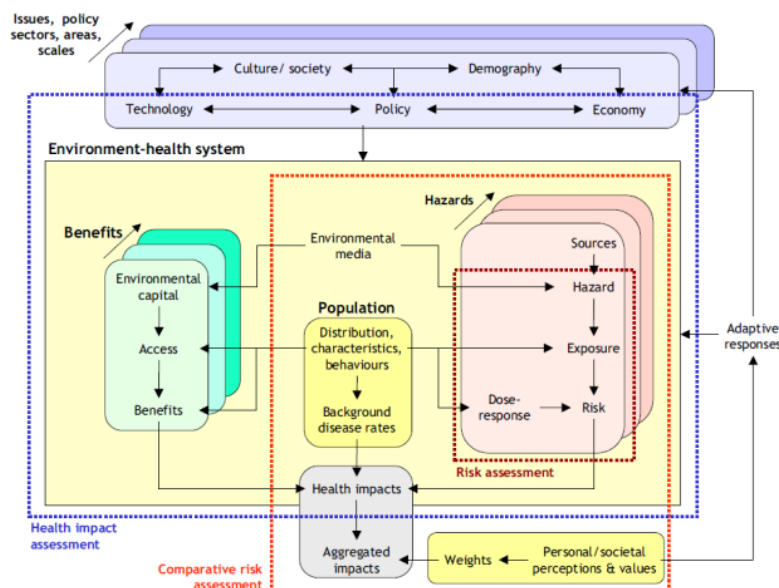


Figure 1: Conceptualising Integrated Environmental Health Impact Assessment (Briggs, 2008)

1:30 - 2 pm: IEHIA – A framework to understand impacts of environmental health exposure in indigenous communities

Understanding indigenous communities' exposures to environmental hazards provides clear examples of the points to consider when conducting an IEHIA of these hazards and their effects. We will briefly visit the various issues one needs to consider when assessing the environmental health impact on vulnerable people when conducting assessments.

Interventions aimed at protecting public health against multiple exposure risk factors will require a multidisciplinary approach (including all appropriate stakeholders) for proper design and implementation. Understanding the efficiency of interventions will require ongoing assessment to determine changes in impact (or at least risk) over time allowing for adapting interventions to evolving risks and changing environmental conditions.

We will provide the opportunity for attendees to experience for themselves the different aspects of such assessments that need to be considered by participating in two activities based on an IEHIA approach to assess people's exposure to environmental hazards. We will use the framework (Figure 2) to understand a practical IEHIA application and then develop a hypothetical assessment.

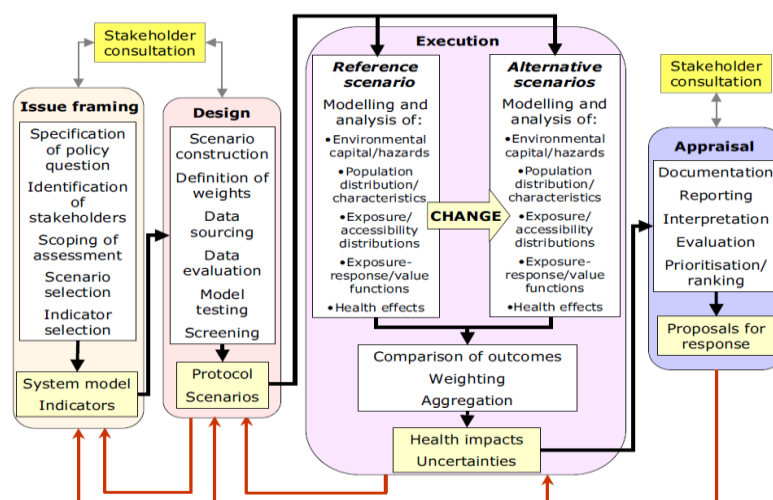


Figure 2: Operational Integrated Environmental Health Impact Assessment (Briggs, 2008)

2 - 3 pm: Real-life Case Study – Environmental drivers of an infectious disease (leptospirosis) in an island population

Using multiple sources of information including biomarkers, questionnaire data, and geo-referenced environmental data, the results were used to develop models to identify people at high risk of infection, produce disease risk maps to identify high-risk locations, and provide information to direct public health intervention strategies – all these are essential components of an IEHIA.

3 - 4 pm: Applying IEHIA to a resource development (natural gas extraction) activity

Participants will then have the opportunity to discuss a hypothetical application of IEHIA to assess population health impact from exposures to environmental hazards released from a resource development (gas extraction) activity in areas with vulnerable populations. The activity aims to identify possible extraordinary factors that need to be considered when designing an IEHIA for these activities especially in the context of vulnerable groups such as children and indigenous populations.

4 - 4:30 pm: Feedback, discussion and closure

References

Briggs D. 2008. A framework for integrated environmental health impact assessment of systemic risks. *BioMed Central (Environmental Health)* 7:61. doi:10.1186/1476-069X-7-61.

Training Workshop III

Water Systems, Rural Areas and Indigenous People

Session Chairs

Robert Arnold¹ and Kyoung-Woong Kim²

¹ Department of Chemical and Environmental Engineering, University of Arizona

² Department of Environmental Science and Engineering, Gwangju Institute of Science and Technology

Presenters

Maryanne Leblanc³ Min Jang⁴ Patrick Mette⁵ Vasiliki Karanikola⁵ Michael Hoffmann⁶

³ World Bank

⁴ Faculty of Engineering, University of Malaya

⁵ University of Arizona

⁶ California Institute of Technology

Pacific Basin Consortium for Environment and Health

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Water is becoming an increasingly scarce resource throughout the world. Sustainable use of water, including appropriate treatment and recycling, is critical to our well being. Workshop presentations will highlight experiences in providing affordable, low maintenance solutions to water supply and water/sanitation in areas without access to advanced technical solutions.

1- 1:15 pm: Introduction

In this introduction, Dr. Robert Arnold will provide an overview to the workshop and share insight into the scope of problems and progress related to introducing water and sanitation services into developing countries. Dr Arnold will cover the following topics;

- UNEP projections for improved water and sanitation in relationship to the Millennium Development Goals.
- What constitutes improved water supply for the purposes of UNEP statistics?
- Discussion of factors that may contribute to lack of progress among Pacific Rim countries.

1:15 – 3:30 pm: Ongoing Efforts in Water and Sanitation

This session is designed to describe field experiences in water supply and sanitation in developing countries and to promote discussion of factors that contribute to long-term success or failure of these and similar projects.

Factors contributing to success of WASH projects, from on-the-job experiences.

Maryanne Leblanc, World Bank

Porous polymer material for removing high levels of manganese.

Min Jang, University of Malaya

Solar driven membrane distillation for water purification in western Australia and northern Arizona.

Vasiliki Karanikola, University of Arizona

Point-of-use filtration applications; intermittent sand filtration and ceramic filters.

Robert Arnold, University of Arizona

Engineers Without Borders; how it works, with an example.

Patrick Mette, University of Arizona

3:30 – 4:30 pm: Upcoming Efforts in Water and Sanitation

This session is designed to promote speculation regarding the future of water treatment/sanitation in the developing world. Is there anything on the horizon that is likely to change the nature and success of efforts in this direction?

The implementation study of groundwater treatment in SE Asia.
Kyoung-Woong Kim, Gwangju Institute of Science and Technology

Gates Foundation grant, toilet for developing world.
Michael Hoffmann, California Institute of Technology

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