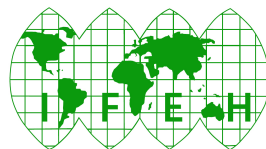


## **Course Brochure:**

# **Environmental Health in Disaster and Humanitarian Settings**

**18<sup>th</sup> – 21<sup>st</sup> July 2016**

***"Endorsed by IFEH"***



**West Plaza Hotel  
110 Wakefield St,  
Wellington, New Zealand**

**Delivered and facilitated by:**



***Griffith University School of Environment, Brisbane, Australia***

**Accredited Trainers:**

**Center for Disease Control and Prevention (CDC), Atlanta, USA**

**and**

**UNISDR - GETI Incheon, Korea**

# Environmental Health and Disaster Management

## 2016 course developed and managed by:

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## Contents

Introduction .....	4
About the Course .....	4
Objectives.....	5
Course Structure .....	5
Course Content .....	5
Target Audience .....	6
Course Duration .....	6
Cost .....	7
Accommodation Options .....	7
Registration Information.....	7
For Further Information.....	7
About the Facilitators .....	8
Attachment A – Provisional Program .....	11

## Introduction

During the last quarter century, more than 3.4 million lives have been lost due to disasters, with billions more affected, and tens of billions of dollars spent on repairing damage and reconstructing lives<sup>1</sup>. Between 1980 and 2005, 90 per cent of the natural disasters, 72.5 per cent of casualties and 75 per cent of economic losses were caused by weather, climate and water related hazards such as droughts, floods, windstorms, tropical cyclones, storm surges, extreme temperatures, landslides and wild fires, or by health epidemics and insect infestations<sup>2</sup>.

Good environmental health disaster and humanitarian management has a significant role in addressing the impact of disasters on environmental health infrastructure and consequently the public. This includes protecting and mitigating risks to systems required for general health and wellbeing, such as water supply, food safety, sewerage, waste management and stormwater<sup>3</sup>.

The preparedness and response actions to the environmental health aspects of disasters are vital in influencing the amount of human suffering, loss of life and ill-health. For example, the 2011 Christchurch earthquake caused widespread disruption to water and sewage systems, damaged food businesses and increased the risk of disease outbreaks. Also, over two years after the 2004 Indian Ocean tsunami caused massive devastation, people were living in temporary shelters and reconstruction projects were struggling to ensure that new housing had clean water supplies and good sanitation. At this time, diarrhoea was prevalent and there were a large number of vector-borne disease cases (dengue and malaria) in Indonesia's capital Aceh.<sup>4</sup>

As the density of populations continue to increase, the risk disasters pose to environmental health infrastructure and conditions will continue to rise. Furthermore, increased urbanisation and industrialisation place a greater proportion of the world community at risk with the majority of the population migrating to urban, disaster-prone areas that are often without an adequate level of environmental health protective infrastructure<sup>5</sup>.

## About the Course

Environmental health, humanitarian and disaster professionals from across the world have a critical function in mitigating public health risks during a response to a disaster and humanitarian crisis. To address this need the Griffith University's Env and Humanitarian and Disaster Initiative (EHADi), New Zealand Institute of Environmental Health (NZIEH), USA Centers for Disease Control and Prevention (CDC), and the National Environmental Health Association (USA) have worked together to develop this 2016 course.

This course will identify the critical role you may have in mitigating environmental health risks from a disaster or during a humanitarian crisis. This includes the need to conduct assessments to identify and address key risks such as those relating to drinking water, shelters, overcrowding, food safety, wastewater, disease-causing vectors, solid waste and hazardous materials. Many of these risks are within the existing roles of environmental health professionals, however, a disaster response and humanitarian crisis has unique challenges and a specific skill set is required from a range of professions and all levels of government.

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<sup>1</sup> Hogan D, Burstein J (2007). Basic Perspectives on Disaster. Lippincott Williams and Wilkins, Philadelphia.

<sup>2</sup> World Meteorological Organization. WMO Disaster Risk Reduction Programme. Accessed 23 February 2012; Available from: <http://www.wmo.int/pages/prog/drr/>

<sup>3</sup> Commonwealth of Australia (2008). Report of the 6th National Conference - Sustaining Environmental Health in Indigenous Communities.

<sup>4</sup> Chang, M. (2007) . Health and housing after the Indian Ocean tsunami. *Lancet*; 369(9579):2066–2068.

<sup>5</sup> World Health Organization. Statistical Information System Page. Accessed 30 May 2011. Available at <http://www.who.int/whosis>

The course recognises that environmental health professionals are in the best position to plan, assess and address the impact of disasters and humanitarian crisis due to their skill set and population-based focus. The content is guided by the successful Environmental Health Training in Emergency Response (EHTER) course run by CDC and UNISDR DRR approaches and training materials. It will provide training on how to apply environmental health skills and information in a disaster setting.

## Objectives

- Demonstrate how environmental health infrastructure and practices are central to disaster management and humanitarian activities
- Provide an overview of key environmental health risks and infrastructure and how this can be improved pre disaster and affected after a disaster and during a humanitarian crisis
- Understand what should be considered to mitigate the environmental health risks
- Provide guidance on assessing, addressing and responding to environmental health impacts of a disaster and humanitarian crisis using a population focus

## Course Structure

The course addresses the need for environmental health and other professionals to increase their education and training in disaster and humanitarian settings. This course concludes with an exercise to apply the skills and knowledge attained during the course. A provisional program is at [Attachment A](#).

## Course Content

1. Disaster and Humanitarian Crisis Management
  - Discuss DRR Planning and Resilient Cities, DRR systems, guidelines and programs that guide the role of environmental health during the disaster management cycle and a humanitarian crisis
  - Climate change adaptation and disaster risk reduction linkages
  - Identify and discuss preparedness, response, recovery, and mitigation resources for environmental health
  - Outline the structures and parameters in which environmental health may function during a disaster or humanitarian crisis
  - Discuss environmental health preparedness and response systems
2. Drinking Water
  - Water issues faced in disasters and humanitarian crisis
  - The role of environmental health practitioners in addressing water issues
  - Identification of key response partners
  - Increase understanding of the basic components of drinking water systems
  - Practice and demonstrate basic skills related to water issues
  - Common tests, sampling, treatment and assessment
3. Food Safety
  - Discuss food safety preparedness and response considerations
  - Operational considerations for mass feeding
  - Methods that may be used for assessing and mitigating food safety risks
  - Considerations for reopening food establishments
  - Actions that environmental health professionals can take to promote food protection

4. Wastewater
  - Environmental health role in wastewater issues
  - Describe onsite (septic) and public sewer wastewater systems
  - Discuss system vulnerabilities, failures and recovery considerations
  - Identify alternative means of treating wastewater
  - Assessment and response to wastewater spills
  - Identify areas to improve wastewater preparedness
5. Solid Waste and Hazardous Materials
  - Discuss solid and hazardous waste issues
  - Identify key response partners
  - Increase understanding of solid and hazardous waste planning, collection and disposal
6. Vector Control
  - The impact of vectors disaster events
  - Control measures needed in disaster events
  - The role of environmental health in addressing vector control issues
  - Identification of key response partners
7. Shelters
  - Shelter types and their operations
  - The role of environmental health within shelters
  - Planning and operational considerations for shelters
  - Considerations and processes for conducting an environmental health shelter assessment
  - Identify key environmental health preparedness, response and recovery actions for shelters and interim housing
8. Building Assessments
  - Identify exterior and interior building components
  - Explain assessment preparation and process for buildings
  - Identify building-related health hazards
  - Exercise recovery and re-occupancy evaluations
  - Identify preventative actions to improve building resiliency
9. Responder Safety
  - Identify common hazards that may be encountered during a disaster or humanitarian crisis.
  - How disaster related hazards can affect your health
  - Health and safety precautions that should be taken during a response

## Target Audience

Environmental health and disaster specialists, professionals, academics and students who plan to broaden their understanding of the role environmental health in disaster and humanitarian settings. Participants can be from the local, regional, provisional, state, federal, international and private sectors.

## Course Duration

4-days

## Cost

\$1,100 for non NZIEH members

\$900 for NZIEH members

\$500 for medium income countries (e.g. Fiji, Tonga and Samoa Japan, South Africa)

\$250 for low income countries (e.g. Papua New Guinea and Solomon Islands)

The International Federation of Environmental Health will decide on the status of income for each member based on the index below:

[http://en.wikipedia.org/wiki/Human\\_Development\\_Index](http://en.wikipedia.org/wiki/Human_Development_Index)

Registration includes morning/afternoon teas, lunches, course materials and Certificate of Completion.

## Accommodation Options

Recommend West Plaza Hotel, 110 Wakefield St, Te Aro, Wellington, New Zealand

Phone: +64 4-473 1440

Website: [www.westplaza.co.nz](http://www.westplaza.co.nz)

## Registration Information

Please visit <http://www.nzieh.org.nz>

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## For Further Information

Dr Peter Davey FEHA MIFEH  
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Stephen Bell  
President, NZIEH  
E-mail : [stephen.bell@mpi.govt.nz](mailto:stephen.bell@mpi.govt.nz)

## About the Facilitators

**Tim Hatch** (MPA, REHS)  
**Director of Logistics and Environmental Programs**  
**Center for Emergency Preparedness**  
**Alabama Department of Public Health, USA**  
[tim.hatch@adph.state.al.us](mailto:tim.hatch@adph.state.al.us)

Tim Hatch is a graduate of Auburn University a veteran of environmental and public health. He has international experience in training for disaster response and has won numerous state, regional and national awards in his profession. Tim is the subject matter expert for the Environmental Health Training for Emergency Response (EHTER) and Healthcare Leadership courses delivered across the United States of America (USA). Tim has also spent the last decade responding to disasters across southern USA. This has included Hurricane Ivan (2004), Hurricane Katrina (2005), Kentucky Ice Storm (2009), widespread water outage in rural Alabama (2009), Gulf Oil Spill (2010) and Alabama Tornadoes (2011). Tim is currently the President of the Alabama Public Health Association. He has made it his personal goal to share his learning's about how the environment can impact on human health.



**Dr Peter Davey**  
**Hon Vice President IFEH,**  
**Senior Lecturer**  
**School of Environment, Griffith University**  
**Brisbane, Australia**

Peter is a full-time academic and accredited EHO, and a Fellow of EHA; working across the environmental health and management sector focused on training/teaching/researching in Queensland and in the Asia and Pacific Region. Peter is Director of the Bachelor of Environmental Management and the Centre of Excellence for Sustainable Development for Indonesia at Griffith University., Brisbane. In these roles he has developed partnerships for capacity building and institutional strengthening for sustainable development. Peter is a UNISDR GETI Global Disaster Risk Reduction (DRR) Trainer.



**Stephen Bell**  
**President**  
**New Zealand Institute of Environmental Health**  
[Stephen.bell@mpi.govt.nz](mailto:Stephen.bell@mpi.govt.nz)



Steve has over 30 years experience in Environmental Health and is President of the New Zealand Institute of Environmental Health. Qualified in the 1970's he worked for the New Zealand Department of Health in Southland and Otago and was actively involved in the public health responses to the Maitai and Taieri floods, and supported field teams in the Invercargill and Pleasant Point floods. After working at all levels for the Department of Health he moved into education; teaching Environmental Health at Wellington Polytechnic, and Massey University in New Zealand; and Manchester Metropolitan University in England.

Currently working in the Ministry for Primary Industries he was part of their team that responded to the 2010 Christchurch Earthquakes.

**Chris Hewins**  
**Specialist Adviser - Food Safety**  
**Ministry for Primary Industries**  
**New Zealand**  
[Chris.Hewins@mpi.govt.nz](mailto:Chris.Hewins@mpi.govt.nz)



Chris Hewins is a Specialist Food Safety Adviser in the Regulation and Assurance Branch of the Ministry for Primary Industries. His career in public health and food safety has included working for local authorities in the UK and New Zealand. In the UK he also ran his own consultancy business and was contracted to the Meat Hygiene Service and DEFRA. In his current role Chris has recently been an Advisor to the Parliamentary Primary Production Select Committee considering the Food Bill. His response activities have included the Christchurch earthquakes (2010 and 2011) and the Maui gas pipeline failure (2011). Chris is also a commercial yacht captain and has been a 'roving ambassador' with IFEH, giving him an interesting global perspective of food safety and public health practices. He is a Fellow of the Royal Society for Public Health and a Chartered Practitioner of the Chartered Institute of Environmental Health.

**Sue Reynolds**  
**Team Leader, Food Safety and Public Health**  
**Hamilton City Council**  
**New Zealand**  
[sue.reynolds@hcc.govt.nz](mailto:sue.reynolds@hcc.govt.nz)

Sue is an Environmental Health Officer, with a Health Studies degree and a Post-graduate Diploma in Environmental Health from Bristol, UK. Following several years experience working for three Local Authorities, she arrived in New Zealand in 2003. Sue began life in New Zealand in a quiet research and academic role as a Food Safety Scientist at ESR, Christchurch, (a Crown Research Institute). In August 2010, she returned to Local Authority work as the EHO for the east side of Christchurch, covering the CBD to New Brighton. Three weeks later, a series of major Earthquakes hit Canterbury, and Christchurch in particular. Starting with a 7.1 magnitude Earthquake in the early hours of 4<sup>th</sup> September 2010. Sue's induction quickly turned into all manner of civil defence duties. The work of the Environmental Health team at Christchurch City Council was nationally recognised in an NZIFST award for Excellence in Services to the food industry, the first time the award had been presented to a Local Authority. In November 2012, Sue moved to Hamilton City.



## Attachment A – Provisional Program

### Day 1 – Monday 15 February

- 9.00am Welcome and Introductions  
10.00am Disaster Management in NZ - Stephen Bell  
10.30am *Break*  
11.00am Environmental health aspects of disasters - Tim Hatch  
12.30pm *Lunch*  
1.30pm Introduction to responder safety and health - Tim Hatch  
2.00pm Case Study: Gulf Oil Spill - Tim Hatch  
3.30pm Drinking Water - Tim Hatch  
4.30pm Close

### Day 2– Tuesday 16 February

- 9.00am Disaster preparedness, response and recovery strategies  
and risk management - Tim Hatch  
9.45am Wastewater - Tim Hatch  
10.30am *Break*  
11.00am Sphere standards and environmental health - Peter Davey  
1.00pm *Lunch*  
1.30pm UNISDR Disaster Risk Reduction Approaches and communicable disease - Peter Davey  
2.45pm *Afternoon Tea*  
3.00pm Food safety - Chris Hewins  
4.00pm Review of Day  
4.30pm Close

### Day 3 – Wednesday 17 February

- 9.00am Volcanic Risks and Response – Dr Carol Stewart, Joint Centre for Disaster Research  
10.30am *Morning Tea*  
10.45am Vector Control - Peter Davey  
1.00pm *Lunch*  
1.30pm Solid Waste and Debris - Tim Hatch  
2.45 *Afternoon tea*  
3.00 pm Building Assessments – Stephen Bell, Tim Hatch  
4.30pm Close

### Day 4– Thursday 18 February

- 9.00am Evacuation centres and shelters –Tim Hatch  
10.30am *Morning Tea*  
10.45am Exercise –Tim Hatch, Peter Davey, Stephen Bell  
3.00pm Close