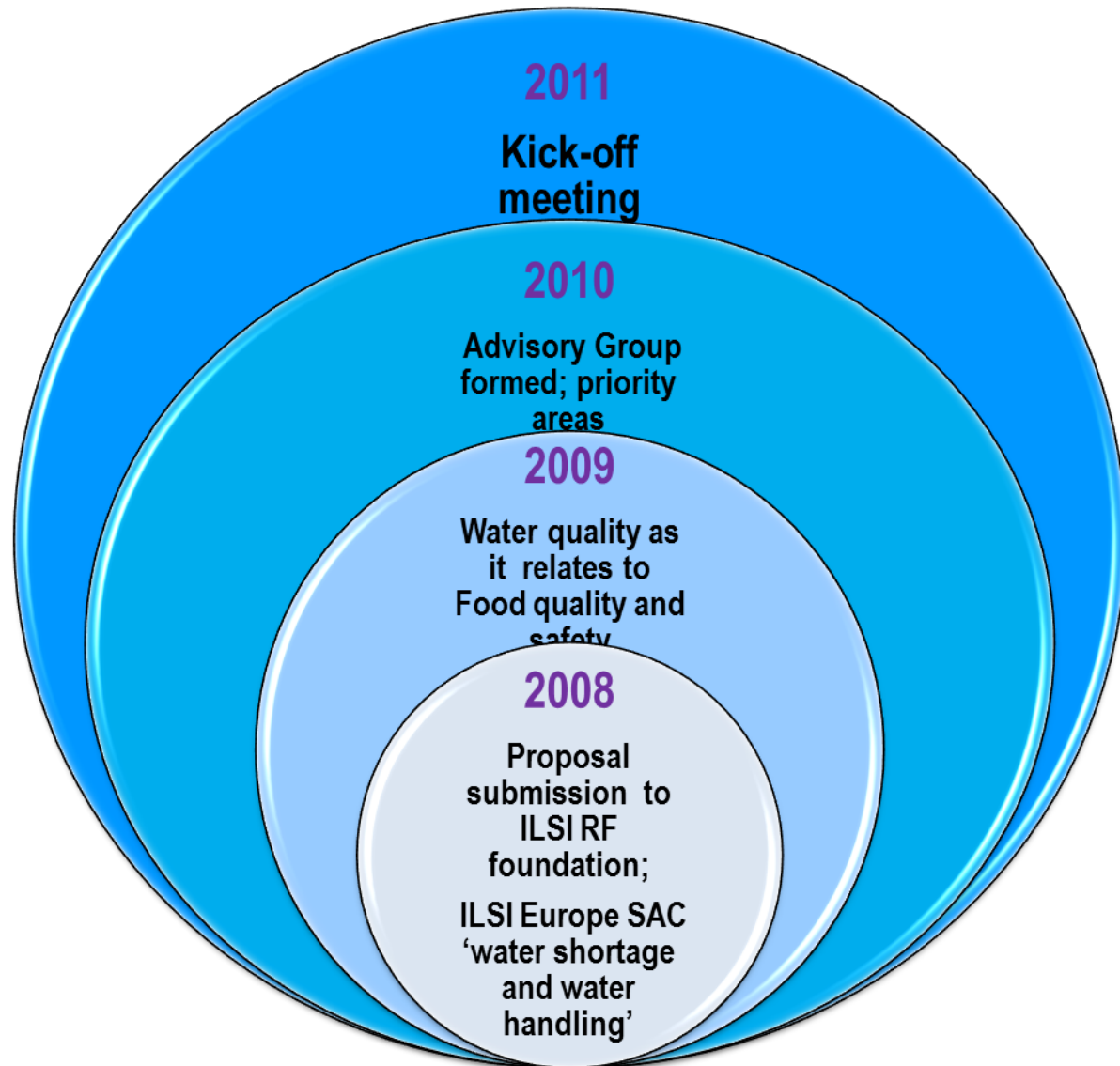


**2012 ILSI Annual Meeting**  
Tuesday, 24<sup>th</sup> January  
**Solutions for achieving sustainable water reuse**  
**An Interactive Session!**





# Identification of priority areas



The quality of water used in the production of fresh produce



The monitoring of water quality in relation to types of waterborne contaminants and their route of entry into the water systems, etc.



To apply the risk assessment model to use of water in agricultural produce



To implement WHO guidelines for the safe use of waste water, excreta and grey water in agriculture and aquaculture, applying the same Stockholm framework as the drinking water guidelines.

Stakeholders	Advisory Group	Expert Group
WHO	Dr. Robert Bos	-
FAO	Dr. Sarah Cahill	Dr. Sarah Cahill Dr. Vittorio Fattori Dr. Marisa Caipo
Swedish Institute of Infectious Disease Control	Prof. Thor Axel Stenström	Prof. Thor Axel Stenström
Australian Public Health		Dr. David Cunliffe
IWMI (International Water)	Dr. Liqa Raschid -Sally	Dr. Philip Amoah Dr. Pay Dreschel

Stakeholders	Advisory Group	Expert Group
ILSI Europe  FP7 EU Project Veg-i-Trade	Dr. Peter McClure Prof. Lee-Ann Jaykus Ms. Annick Moreau	Dr. Peter McClure Dr. John Fawell Dr. Charles P. Gerba Prof. Gertjan Medema Prof. Lee-Ann Jaykus Prof. Mieke Uyttendaele Dr. Liesbeth Jaxens
ILSI South Africa	Mr. Nick Starke	IWMI
ILSI South East Asia Region	Dr. Mathew Lau Mr. Keng Ngee	Dr. Mathew Lau
ILSI Mexico	Ms. Cecilia Robles Dr. Felipe Rodriguez	Dr. Marcelo Signorini
ILSI Brasil	Dr. Flavio Zambrone	Dr. Flavio Zambrone Dr. Maria Tereza Pepe Razzolini
ILSI North Andean	Dr. Marta Elena Soto	Prof. Maria Claudia Campos Pinilla
ILSI South Andean*	Ms. Viviana Aranda	
ILSI India*	Dr. Rekha Sinha	
ILSI Japan*	Mr. Takashi Togami	
ILSI Korea*	Dr. Myeong-Ae Yu	

Current focus : 2011-2012

# **Assessing the Safety of Water Used in the Production of Fresh and Minimally Processed Produce**

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- 1.Executive summary and introduction**
- 2.Fresh produce and microbial safety concerns**
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- 6.Data needs and gap analysis**
- 7.Recommendations and consideration for different stakeholders**

## Objectives

- 1. Explore the relationship between food and water safety and security.**
- 2. Identify gaps involved in evaluating the quality of water used for irrigation.**

## Objectives

**3. Identify what additional guidance (WHO and FAO guidelines) at the farm and wholesale purchaser level to minimise risks from food crops irrigated with treated wastewater.**

- **Highlights from the FP7 Veg-i-Trade project** – fresh produce consumption and its importance.

Worldwide outbreaks :

2011 : E. coli O104 outbreak in Europe (sprouted fenugreek seeds)

2011: Shigella sonnei outbreak in Norway (fresh basil)

2010:Norovirus outbreaks in Denmark and Sweden

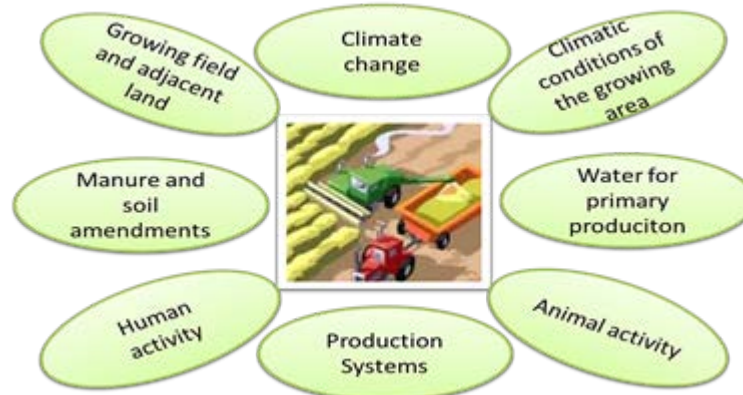
2008: salmonellosis outbreak in US (tomato-cilantro-peppers)

2008:Campylobacter outbreak in Alaska (raw peas)

2006: E. coli O157:H7 outbreak (spinach)

..... **and many more.....**

- Risk factors for microbial contamination in harvesting and post-harvest



- Current legislations at the global level

## 3. Irrigation waters and waters used for fresh produce production

- GAP and GMP, WHO guidelines on safe use of wastewater, excreta and grey water
- Water uses in primary production of fresh produce
- Sources of irrigation water
- Microbial water quality for irrigation water
- Agricultural practices regarding irrigation (overview in different geographical areas ) & sources of water at the global level
- Good practices and water management at farm , post-harvest level
- Preventive measures and interventions to address the impact of irrigation water on microbial food safety hazards of fresh leafy vegetables
  - from surface water
  - from ground water
  - from wastewater re-use
  - impact of irrigation systems
  - Water distribution systems
- Occurrence of pathogens that mirror the condition of the region; impact of climate change



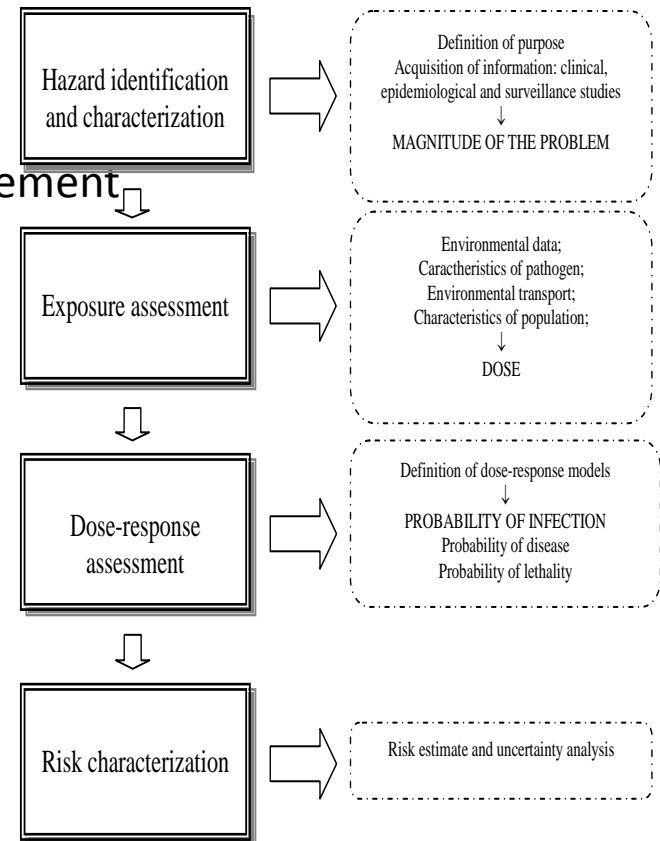
# 5. Microbial risk assessment

- **Microbial risk assessment**

(WHO Safe Water Framework and risk management

principles (ISO 22000/HACCP)

- **Guidance on MRA for irrigation water**
- **QMRA in irrigation water**
- **Case studies**
- **Recommendations**



## 6. Data Needs and Gap Analysis

- **Absence of data for real test**
- **Detection technics. Effects of stress on cells and recovery**
- **Sampling**
  - What information should be collected?
  - How often and by whom should this information be collected?
  - To whom will this monitoring information be given?
  - What decisions will be taken on the basis of the monitoring information?
  - How can those decisions be implemented? (WHO, 2006).
- **Complexity of study design**

- Panorama of **water uses for the production of fresh produce** in the world (irrigation waters/process waters)
- Mapping of **microbial hazards for fresh produce** regarding geographical area, agricultural practices and water availability.
- **Recommendations on microbial quality of waters** used during the production and/or in contact with fresh produce
- **Recommendations on water resources management** for fresh produce production

***THANK YOU!***

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