Working Group 8
Environmental Sensitivities
Progress Report

3rd EMRAS II Technical Meeting
Closing Plenary
28 January 2011

Presented by:

Bliss Tracy
Health Canada

16 Participants

- **Belgium**
- **Canada**
- **Finland**
- **Germany**
- **Greece**
- **Hungary**
- **Italy**
- **Norway**
- **IAEA Secretariat**

Environmental sensitivity WG

Objective:

Explore the concept of environmental sensitivity in rural and semi-natural environments in the framework of assessments after an emergency situation

Main tasks:

- Clarify the concept of environmental sensitivity
- Compile a list of sensitivity factors
- Design scenarios
- Carry out modelling exercises

Non-urban Scenarios

- Agricultural (Europe and Canada)
- Alpine (Central Europe)
- Temperate forest (Europe and Canada)
- Arctic (Europe and Canada)
- Freshwater aquatic
- Coastal marine

Modelling exercise for each environment

- **Deposition of 1000 Bq/m^2 for each of ^{137}Cs, ^{90}Sr, and ^{131}I**
- **Calculate concentrations in environmental media and food chain products leading to humans**
- **Calculate radiation doses to humans during first year after deposition.**

CHERPAC Results for the Agricultural Scenario

Presentation for IAEA Environmental Modelling for Radiation Safety (EMRAS-II), Environmental Sensitivity Working Group Meeting, Vienna

Sohan Chouhan
Atomic Energy of Canada Limited
Chalk River, Ontario, Canada
ChouhanS@aecl.ca

2011 January 24

Calculations for Agricultural Scenario with JRODOS

EMRAS II Meeting,
24-28 January 2011, Vienna

Catrinel Turcanu, Geert Olyslaegers
Belgian Nuclear Research Centre SCK•CEN

Sustainable management of food production

Guideline levels

Beata VARGA
Central Agricultural Office
Food and Feed Safety Directorate
HUNGARY

EMRAS WORKING GROUP 8
VIENNA, 24-28.01.2011

COASTAL MARINE REGIONS
PRELIMINARY RESULTS

Mikhail Iosjpe
Norwegian Radiation Protection Authority

ARCTIC AND FOREST SCENARIOS

Presentation for:

Working Group 8 on Environmental Sensitivity
3rd Technical Meeting
Vienna, 24-28 January 2011

Bliss Tracy and Lauren Bergman
Radiation Protection Bureau
Health Canada

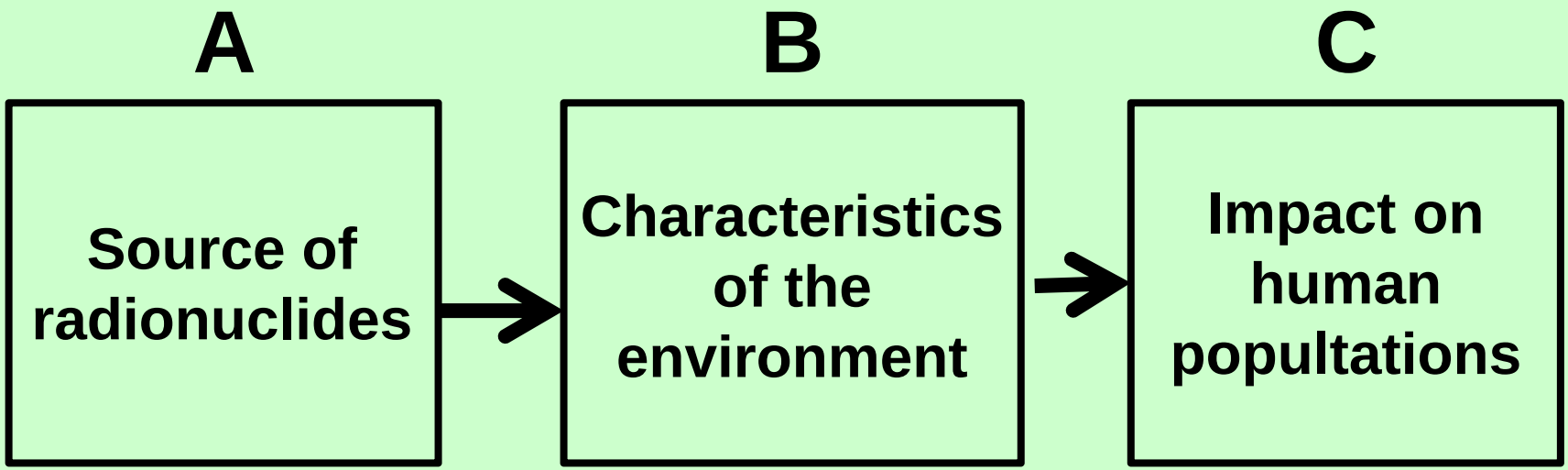
Freshwater aquatic environment using MOIRA PLUS

Luigi Monte, ENEA Italy

Considerations on the Definition of the Concept of Environmental Sensitivity
Luigi Monte, Italy

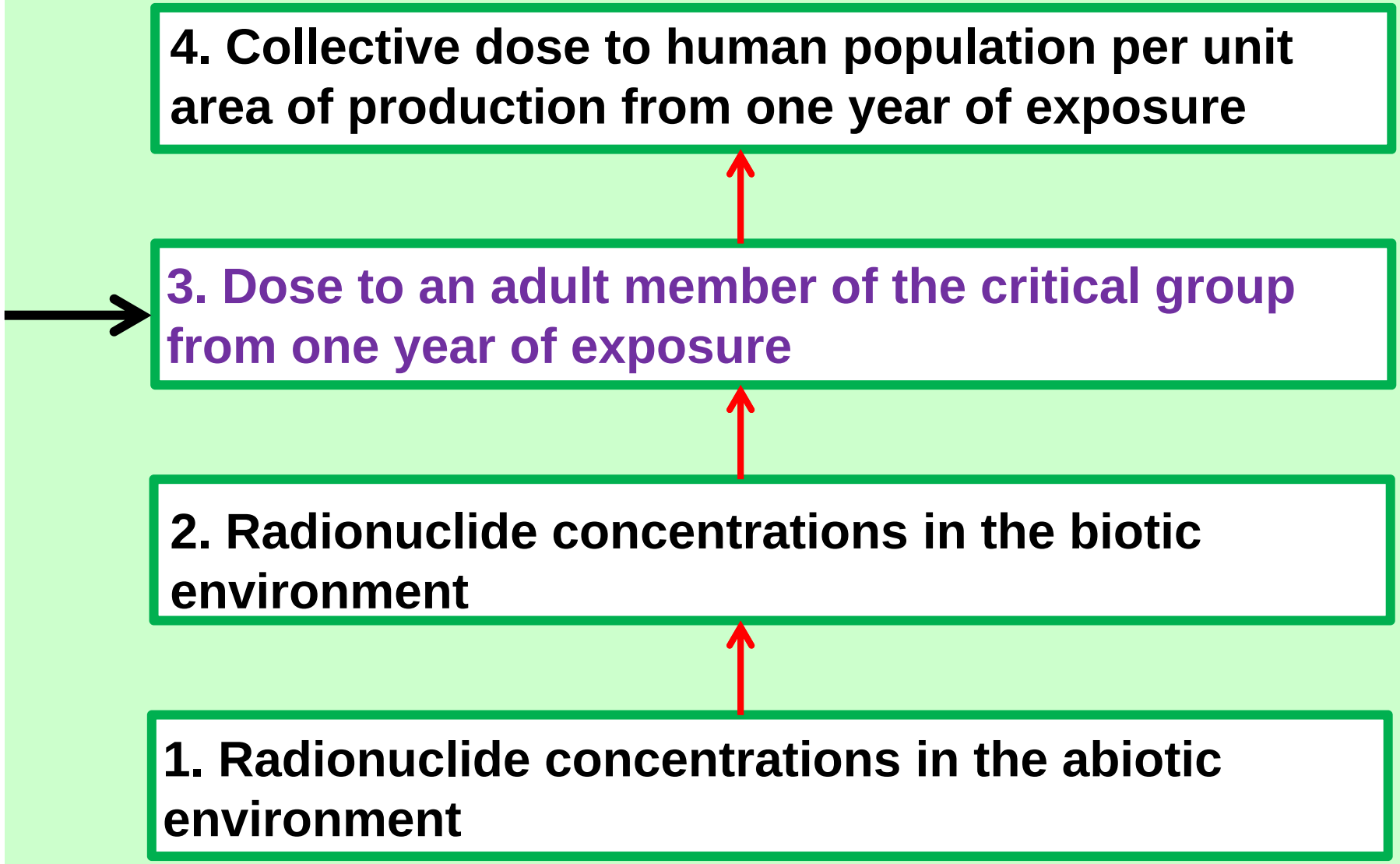
Thoughts on Radioecological Sensitivity Concept Document,
Sohan Chouhan, Canada

Meaning of environmental sensitivity



“Sensitivity of C to B”

Measures of environmental sensitivity



Adult dose during first year (μSv/year)

Environment	Cs-137	Sr-90	I-131
Agricultural	******	******	******
Alpine	---------	----------	---------
Arctic	******	******	******
Forest (terrestrial)	******	******	******
Aquatic	******	******	---------
Marine (coastal)	******	******	******

Average concentration in meat or fish (Bq/kg)

Environment	Cs-137	Sr-90	I-131
Agricultural	******	******	******
Alpine	---------	----------	---------
Arctic	******	******	******
Forest (terrestrial)	******	******	******
Aquatic	******	******	---------
Marine (coastal)	******	******	******

Collective dose per unit area of production (person-Sieverts/year))

Environment	Cs-137	Sr-90	I-131
Agricultural	----------	----------	----------
Alpine	----------	----------	----------
Arctic	----------	----------	----------
Forest (terrestrial)	----------	----------	----------
Aquatic	----------	----------	----------
Marine (coastal)	----------	----------	----------

Plans for the year ahead

- Finalization of exercises
- Preparation of WG8 report
- ICRER presentations in Hamilton
  - An overview presentation from WG8
  - 6 presentations from individual members
- Interim WG meeting (Fall? Europe?)
- Expected completion of report by January 2012

Ideas for future work

- **Broaden concept of environmental sensitivity to include impact on biota**
- **Consider direct releases to aquatic environments**