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International Experts' Meeting on Radiation Protection after the Fukushima Daiichi Accident: Promoting Confidence and Understanding

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TAKING INTO ACCOUNT THE FUKUSHIMA ACCIDENT IN THE NATIONAL RADIATION PROTECTION PROGRAMME

by

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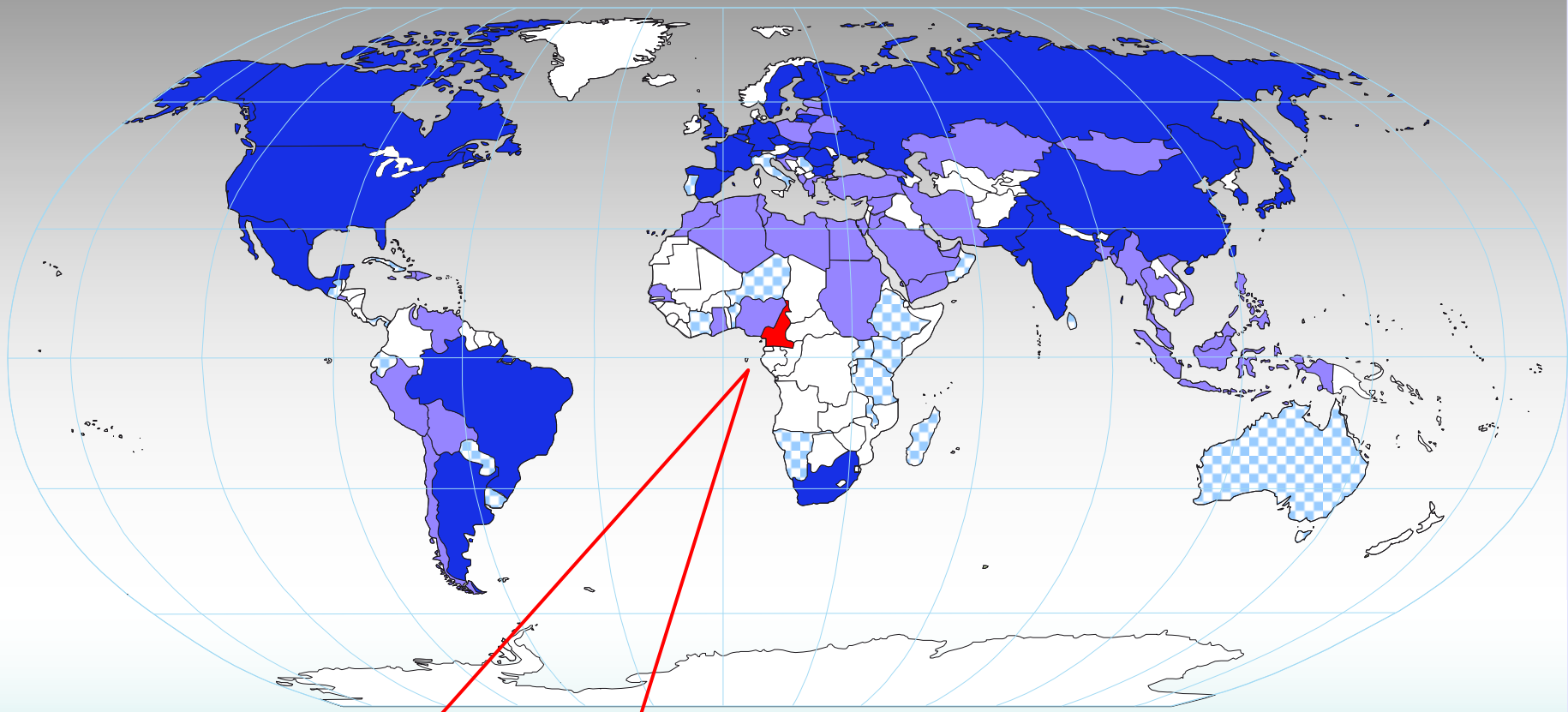

My name is CAMEROON

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OUTLINE

1. Introduction
2. Cameroon Decision after Fukushima Nuclear Accident
3. Implementation of the Decision
4. Experiments and preliminary results
5. Conclusion

INTRODUCTION

- **Release of radioactivity due to nuclear plant damage;**
- **Radioisotopes discharged into the environment;**
- **Can be significant for the food chain;**
  - **Immediate concern:** I-131
  - long-term concern: Cs-137; Sr-90; Pu-238; Pu-239; Pu-240;

As a consequence of **Chernobyl accident**, countries decided to perform measurements of radionuclides in foodstuffs: EU Member States, USA

Fukushima Daiichi nuclear accident:

Japanese Government put measures in place to prevent distribution of contaminated foods;

Recommendation of European Commission to its Member States: to monitor the radioactive levels in seafood

CAMEROON DECISION AFTER FUKUSHIMA NUCLEAR ACCIDENT

- After the Fukushima Daiichi nuclear accident,
- Decisions by countries and regions outside Japan to monitor seafood, either imported from Japan or caught in specific fishing grounds
- Cameroon: Government put the National Radiation Protection Agency (NRPA) in charge of setting up a national technical capacity to monitor the presence of radionuclides in imported goods (Ministry council, 31st March 2011) .

IMPLEMENTATION OF CAMEROON DECISION

Methodology

1. Inventory of foodstuffs imported from Japan and neighbouring areas

2. List of recommended activity concentrations limits: IAEA, WHO, Codex alimentarius

3. Selection and acquisition of Laboratory equipment

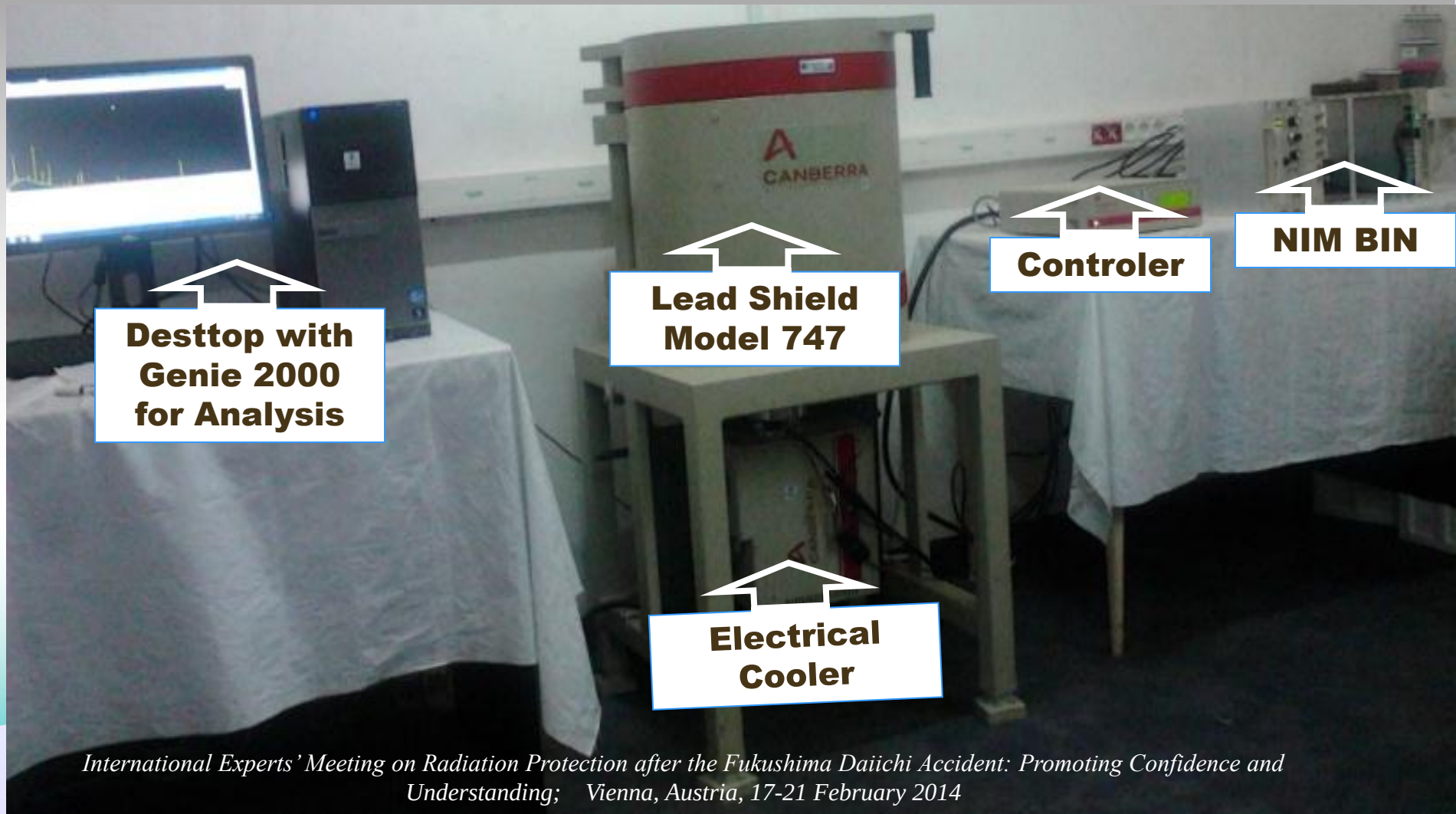
INVENTORY OF IMPORTED FOODSTUFFS

Imported Foodstuffs from Japan and its neighboring countries (China, South Korea and North Korea)

Imported Foodstuffs	Activity concentrations limits / thresholds values for intervention (Bq/Kg)			
	Recommended by IAEA			
	^{134}Cs, ^{137}Cs, ^{103}Ru, ^{106}Ru, ^{89}Sr	^{131}I	^{90}Sr	^{241}Am , ^{238}Pu, ^{239}Pu ^{240}Pu, ^{242}Pu
Meat and edible offals	1000	1000	100	10
Sea fish frozen	1000	1000	100	10
Milk powder or concentrated	1000	100	100	1
Dried vegetables or Pulses	1000	1000	100	10
Tea and spices	1000	1000	100	10
Canned food	1000	1000	100	10
Rice and other cereals	1000	1000	100	10
Flour/wheat flour	1000	1000	100	10
Animal fats / vegetable	1000	1000	100	10
Crude or refined oil	1000	1000	100	10
Suggar	1000	1000	100	10
Preparations of cereals	1000	1000	100	10
Food for kids	1000	100	100	1
Canned tomato	1000	1000	100	10
Drinks/spirits	1000	1000	100	10
Cigars and Cigarettes	1000	1000	100	10

LABORATORY EQUIPMENT

Broad Energy Hight Pure Germanium Detector



LABORATORY EQUIPMENT

Broad Energy Hight Pure Germanium Detector

Main analysis equipment component at NRPA: low Background Gamma-ray Spectrometer consisting of Broad Energy Germanium Detector (BE6530), with **resolution of 0.5 keV at 5.9 keV of 55Fe, 0.75 keV at 122 keV of 57Co and 2.2 keV at 1332 keV of 60Co**, respectively.

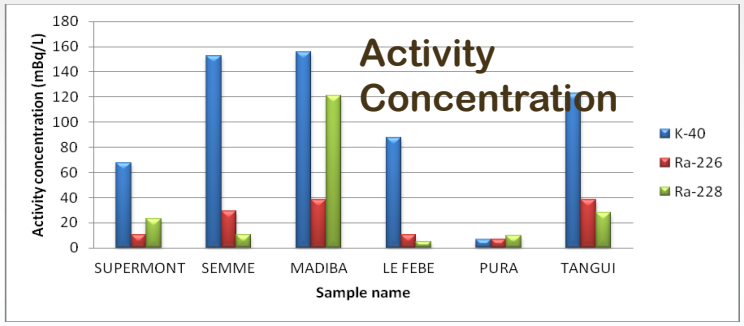
Detector placed in lead shield having a thickness of 10 cm, **to prevent from high background counts due to external radioactive sources**.

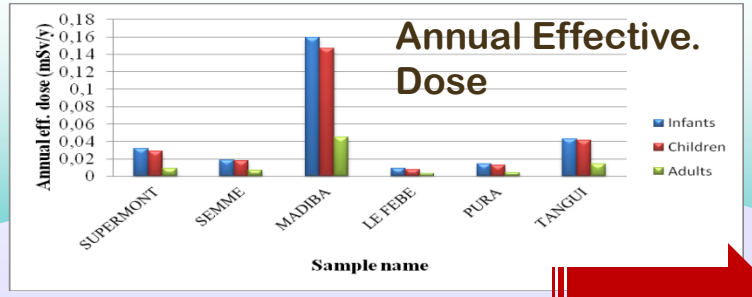
The efficiency calibration files are generated using Canberra designed LabSOCS (Laboratory Sourceless Object Counting System), a numerical calibration software.

This equipment was supplied through the International IAEA technical cooperation programme.

Results of analysis of radionuclide contents of local mineral water and soils

PRELIMINARY EXPERIMENTS: WATER



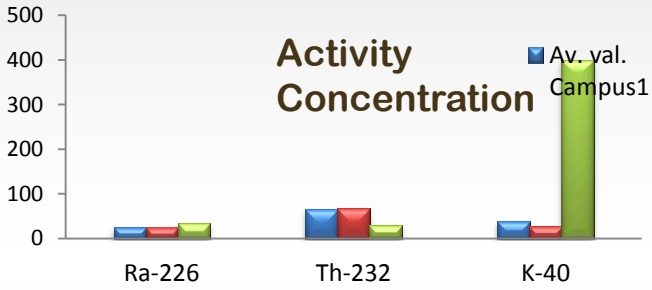


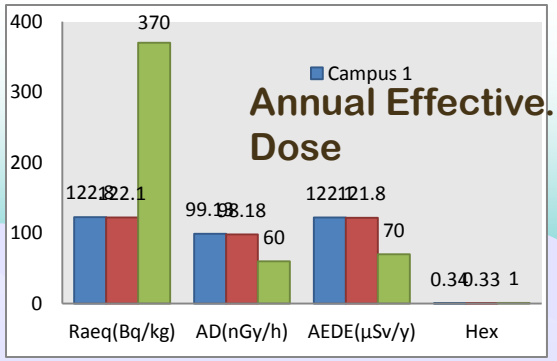
Low activity concentrations and acceptable risk values as recommended by US Environmental Protection Agency.

PRELIMINARY EXPERIMENTS: SOIL

Samples of Soil

Prepared samples





High Annual Effective Dose was recorded but with acceptable risk values as recommended by UNSCEAR.

CONCLUSION

- This presentation provides evidence of available capacities to implement environmental radiological analysis including imported or local foodstuffs.

- **It is expected that the effective monitoring of imported foods, as decided by the Government, will strengthen this capacity and the role of the NRPA to insure the radiological safety of foods consumed in he country.**

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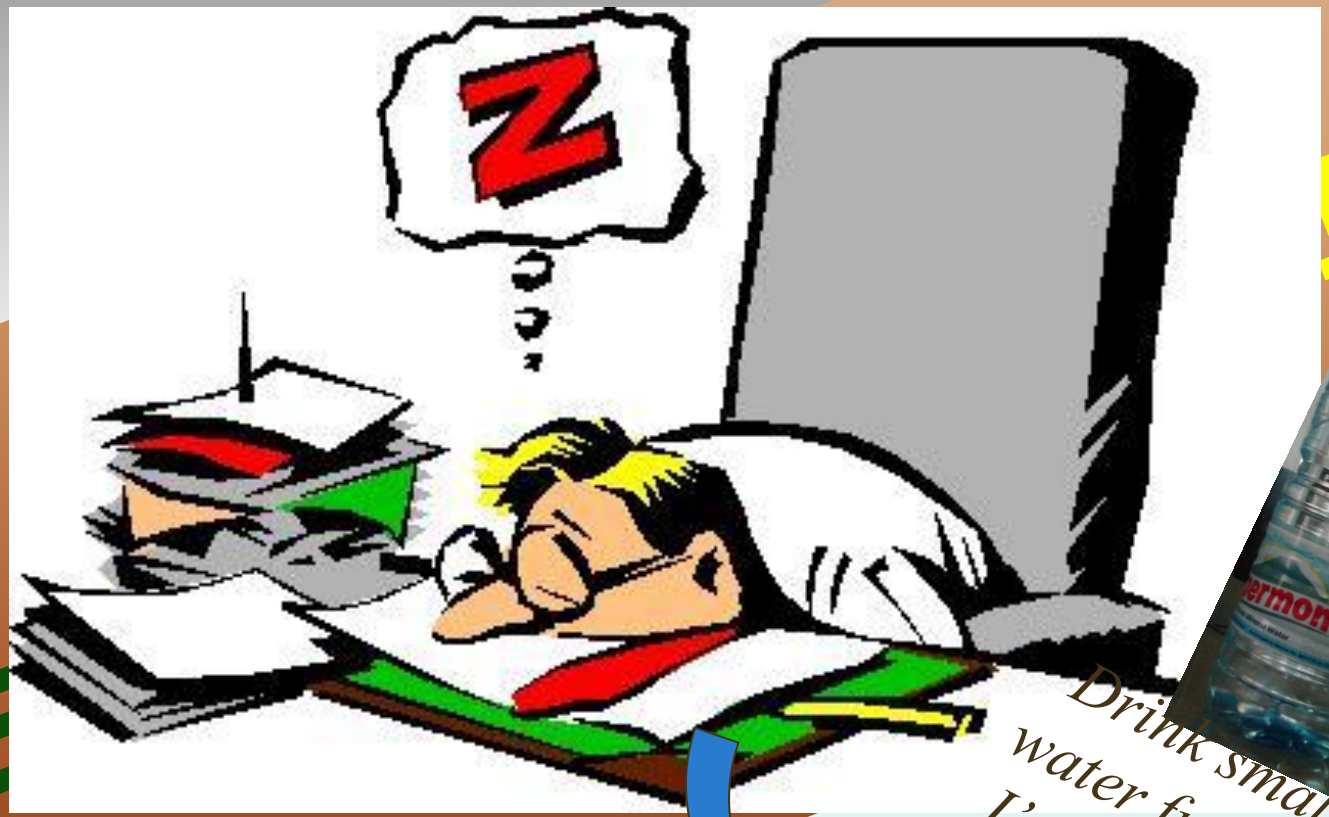

Drink small mineral water from Cameroon I's save from NORMS

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