



**RMCC 11**



## **CNESTEN infrastructure dedicated to environmental monitoring**

**Tahar EL KHOUKHI  
CNESTEN - Morocco**

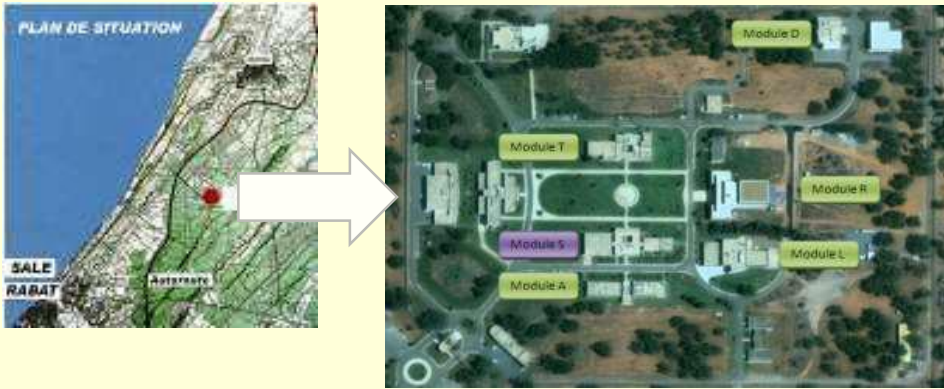
*MESIS - Amman*

*12 to 14/12/2016*

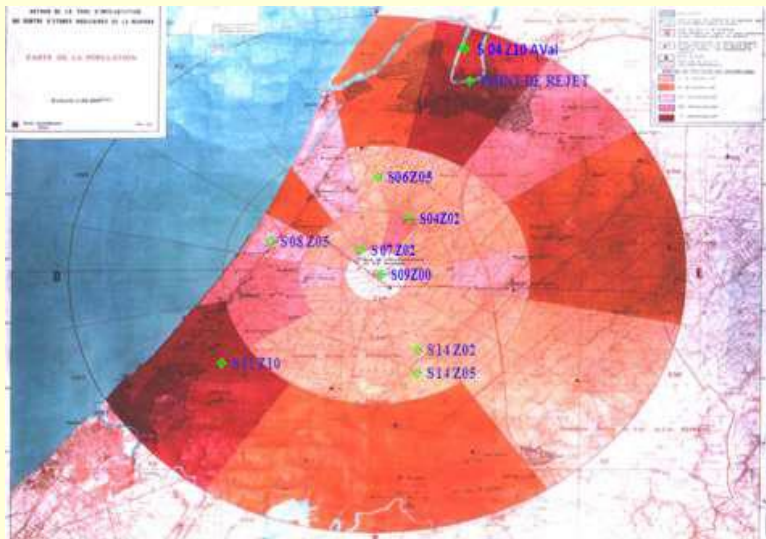
### **CNESTEN's missions**

- Promoting research and applications of nuclear science and technology in various sectors
- Preparing the technological basis for the introduction of nuclear power
- Providing technical advice to the state regarding nuclear safety and security

## CENM's site



## Environmental Monitoring Program



## Environmental Monitoring Objective

- Meeting the regulatory requirements
- Checking for the impact of CENM's activities on the population and the environment
- Assess the impact of any event

## Laboratory and Measurement Equipment

## Laboratory 1: Physicochemical and radiochemical measurements

High Performance Liquid Chromatography: HPLC
UV / Visible Spectrometer
ICP

## Laboratory 2: (VLA) Radiological Measurement

Gamma spectrometry chain HPGe 30%
In-situ Portable gamma spectrometer chain HPGe 30%
Ambient Gamma chamber
Total Alpha / Beta Counter
Liquid Scintillation Counter : Tri-Carb 3170TR



## Laboratory 3: (LA) Radiological Measurements

2 Gamma spectrometry chains HPGE 20%

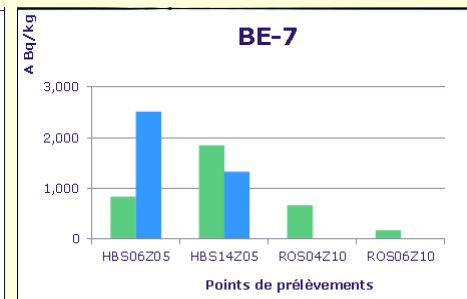
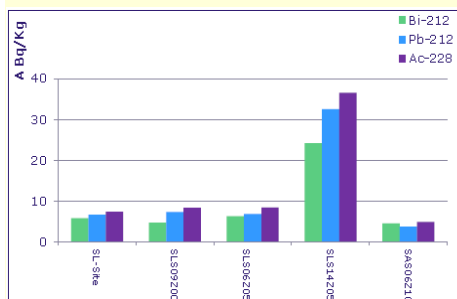
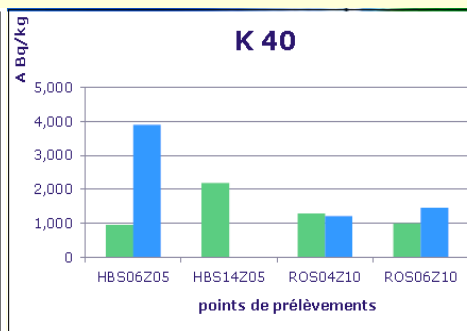
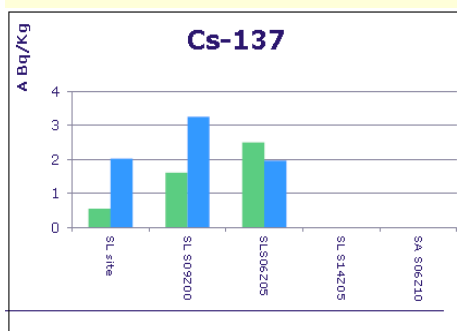
Total Alpha / Beta Counter Tenelec 5XLB

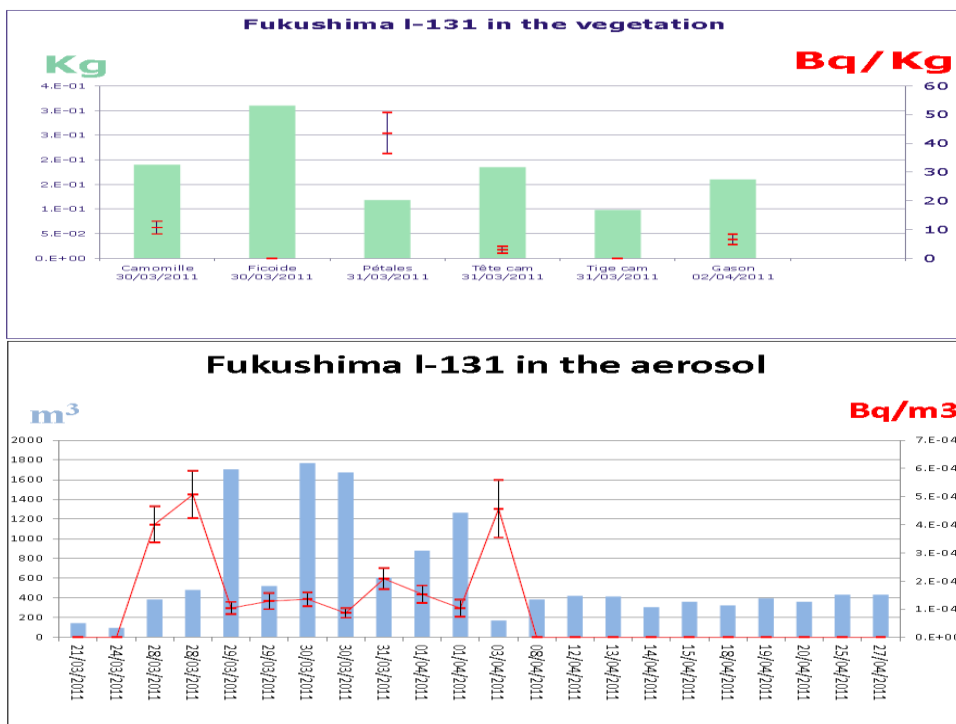
Multichamber Alpha Spectrometry Chain - 12 detectors

Liquid Scintillation Counter Tri-carb 3180TR

Automatic changer - gamma spectrometer

HPGe 30%





## Reporting

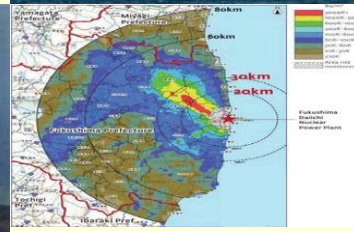
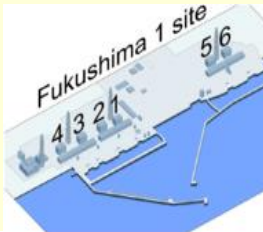
- Quarterly reporting to the authority
- Annual reporting to the authority
- Reporting for:
  - internal analysis demands,
  - interventions,
  - clients,
  - PT exercises,
  - other projects.

## Achievements

- Defining the environmental monitoring program
- Establishing the radiological baseline
- Radiological and chemical monitoring of CENM's installations
- Radio-bioassay control of CENM's staff
- Participation in academic training and research
- Providing services on behalf of socio-economic operators

- Intervention at the request of the authorities following:

- Accident of Algeciras (1998):  
 $^{137}\text{Cs}$
- Failure of the British submarine in the Mediterranean (2001)
- Fukushima accident (2011)



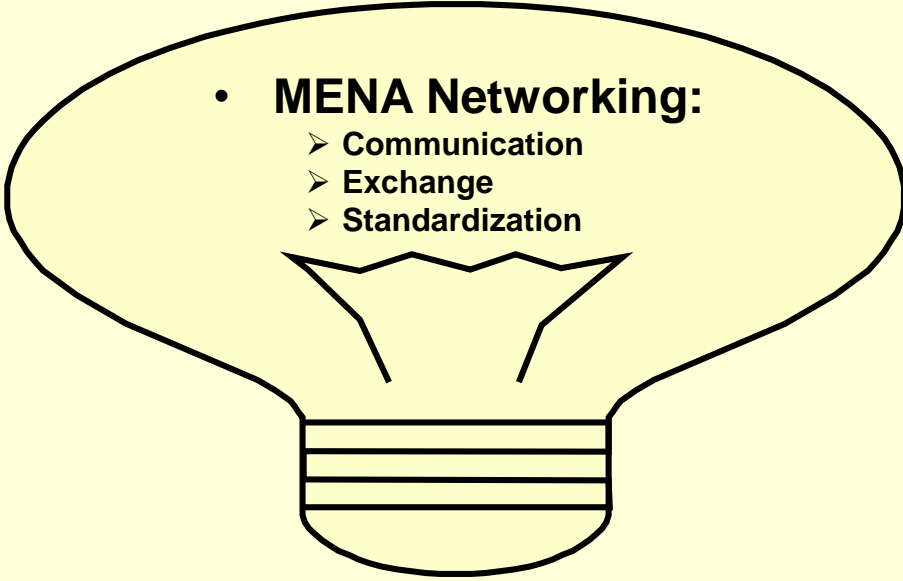
## Challenges

- Recruitment
- Training
- Maintenance of equipment
- Accreditation



## Regional Challenges

- **MENA Networking:**
  - Communication
  - Exchange
  - Standardization



شكراً