



# “Global Training In NORM management”



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**UHASSELT**

KNOWLEDGE IN ACTION

# Global training in NORM-management

Project funded by

UHasselt – international office and IAEA  
funding for mobility

and ENA support for organisation

- Plan of action
- IAEA – Environet work group : NORM
- Project aim
- Preliminary Program
- Subscription modalities

# Project Plan of Action

## Preparatory workshop

[Teleconference strategy]

[Template e-learning module]

## Guest classes – site visit

[Preparing educational material for case studies]

[Interaction local stakeholders]

## International training school

[Linked to class rooms in several international countries]

[e-learning module]

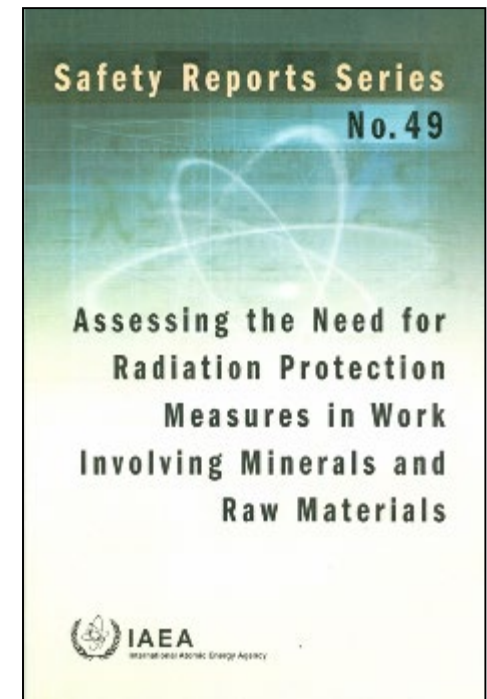
[Students from Cherne – IAEA Environet networks] – [Experts ENA]

## Dissemination

[IRPA, CHERNE, ENA... workshop]

## ***Industrial sectors dealing with issues related to NORM (Naturally Occurring Radioactive Materials)***

1. *Uranium mining and processing*
2. *Rare earths extraction (REE)*
3. *Thorium extraction & use*
4. *Niobium extraction*
5. *Non-U mining – incl. radon*
6. *Oil and gas*
7. *Production and use of TiO<sub>2</sub>*
8. *Phosphate Industry*
9. *Zircon & zirconia*
10. *Metals production (Sn, Cu, Al, Fe, Zn, Pb)*
11. *Burning of coal etc.*
12. *Water treatment – incl. radon*



# **Sustainable collaboration**

**Educational expertise : CHERNE European partners**

**E-learning platform**

**Research expertise :**

**ENA : European NORM Association**

**First ENA symposium in Katowice (19-23 November 2018)**

**IAEA – Environet : support for developing countries**



- **Exploring and strengthen partnerships between different networks: Educational & research**
  - **→ Joint projects & PhDs**

# Topic Global Training school in NORM

## Problem statement

### “How to start a NORM survey?”

- **Exchange of good working practices in Europe to global cases:**
  - Phosphate industry: **Demonstration** Belgium → **Case** Brazil
  - REE: **Demonstration** France/Estonia → **Case** Indonesia
  - Zircon - zirconia industry; **Demonstration** Italy → **Case** Egypt
  - Oil & Gas; **Demonstration** Angola → **Case** Argentina/Egypt



**Good working practices : Lessons learned form the past  
Networking**

## **Tool : Cherne EEAE platform : new module?**

- Course materials
- Video lectures (google hangouts)

### **Guest speakers :**

Sheldon Landsberger [oil and gas industry in US, measurement options]

Pedro Lemos [inventory for oil & gas industry in Angola]

Barbara Paci Mazzilli [Brazilian case study phosphate industry]

Johan Paridaens of ikzelf [Belgian case study, phosphate industry]

Jane Paju of Madis Kiisk [REE, Estonia] of Helene Caplin [REE, France]

Agus Sumaryanto [REE, Indonesia]

### **1 week program @uhasselt : 2ECTS**

**26 - 30 November 2018**

**1 week Pre-workshop** : ENA 2018 : Katowice : 2 ects

# Preliminary program Training School on “NORM inventories”

20 international students – 5-10 teachers – Lectures broadcasted to several class rooms world wide (accessible via link) – Electronic learning environment

MONDAY 26/11/2018	TUESDAY 27/11/2018	WEDNESDAY 28/11/2018	THURSDAY 29/11/2018	FRIDAY 30/11/2018
<p>9h00-10h00</p> <p>*Welcome with coffee</p> <p>*Questions &amp; answers on electronic study environment</p> <p>* Introduction of participants</p> <p>10h00-12h00</p> <p><b>Lectures on inventory building</b></p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Phosphate industry – Belgium &amp; Brazil: strategies for inventory building</li> </ul>	<p><b>Lectures on inventory building</b></p> <ul style="list-style-type: none"> <li>• Rare earth &amp; metal processing– France, Estonia &amp; Indonesia</li> <li>• Oil and gas industry – Angola, Netherlands &amp; US</li> </ul>	<p>FIELD Trip – Making the Belgian NORM inventory (guided by experts)</p> <ul style="list-style-type: none"> <li>• Visit + mapping of industrial site</li> <li>• Visit + mapping of phosphate legacy site</li> </ul>	<p>FIELD Trip</p> <ul style="list-style-type: none"> <li>• Visit + mapping of industrial site</li> <li>• Visit + mapping of phosphate legacy site</li> </ul>	<p><b>09h00-12h00</b></p> <p><b>Round table</b></p> <p><b>Presentations of the students</b></p>
12h00 Lunch UHasselt	12h00 Lunch UHasselt	12h00 Lunch	12h00 Lunch UHasselt	12h00 Lunch UHasselt
<p><b>PRACTICAL Exercises (4 groups)</b></p> <ol style="list-style-type: none"> <li>1. Sources of information</li> <li>2. Organizing a measurement campaign</li> <li>3. Mapping a legacy site</li> <li>4. On-site measurements</li> </ol>	<p><b>PRACTICAL Exercises (4 groups, continuation)</b></p> <p>19h30 Dinner</p>	<p>(Continuation of visits)</p> <ul style="list-style-type: none"> <li>• Visit + mapping of NORM contaminated area</li> </ul> <p>18h30 Social Event</p>	<p>13h00 Preparation of presentations by the students</p>	<p><b>Meeting of the jury + filling in evaluation forms</b></p> <p><b>15h30-16h30</b></p> <p><b>Round table discussion: Evaluation of the course</b></p> <p>16h30 Farewell drink</p>



## Conclusion

- Collaboration in a wide perspective
- Interactive program before and during the training week
- Extra E-module
- International guest-speakers
- Program open for Cherne students and PhD students
  - Master students
  - PhD students (Erasmus mobility using a bilateral agreement)
  - Registration (July 2018)

# Welcome at UHasselt



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