

## **ROPME MUSSEL WATCH PROGRAMME**

**2014**

### **RADIONUCLIDES SCREENING**

#### **CONCLUSIONS**

The baseline assessment based on sediment and biota samples from the locations along the coast of the ROPME Sea Area did not reveal any increase of the radioactivity levels. The activities of anthropogenic radionuclides in sediment and biota were very low and those of natural radionuclides were similar to other areas of the world ocean. However, the number of samples analyzed was too small to be able to accurately represent the different regions of the RSA. A more thorough survey on the distribution of radioactivity in the RSA is required to collect more representative information for a comprehensive assessment.

#### **RECOMMENDATIONS**

Although the present results do not raise radiological concerns on radioactivity levels in the region, it is necessary to implement a more comprehensive assessment of the radioactivity in the ROPME Sea Area, collecting representative samples from more locations, including offshore sediments (surface and cores samples), in an adequate number to allow for a robust statistical analysis of the results. Wherever it is possible, depending on the type of sediment, it is recommended to use a corer (e.g. Gemini corer, box corer, multi corer) in soft fine grain sediments, in order to study the historical deposition of sediments and contaminants over longer periods. This would allow also the radiometric dating of sediment layers. In addition, sampling (of biota and sediment) should be carried out by trained staff; sampling protocols should be followed consistently and rigorously for all the different steps involved including samples dissection, preparation, transportation and storage. Also, because radioactivity levels are generally low, larger quantities of samples have to be collected to allow for accurate results.

In order to have a more representative assessment of the level of radioactivity in the region, additional radionuclides have to be included in the analysis, such as NORMs (Pb-210/Po-210 in sediments, Ra-226 in seawater) and anthropogenic radionuclides (Cs-137, Plutonium isotopes (Pu), Am-241 in seawater, sediment and biota, Sr-90 in seawater and biota and Tritium in seawater). Strengthening Data Quality Assurance in the analysis of radionuclides in marine

samples in the ROPME Sea Area should also be considered, in view of improving building regional capacity in the analysis of radionuclides in marine samples.