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Workshop on: The Environment

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Project Planning Proposal:

Risk Assessment on integrated management of harbour sludge

The awakening process of National policies has gotten started with the London Convention of 1972, pointing out the vital importance of the indissoluble tie between the marine ecosystem and humanity. This has led into an international management of the control and of the regulation concerning the introduction of polluting substances into the marine environment. European and International policies have fully agreed on an integrated and sustainable management of the coastal strip.

Within this context, harbour management and in particular the management of deposits dredged from harbour areas (AP), represents a crucial environmental socio-economic point. This problem is dealt through the use of two European Community instruments under implementation: the risk assessment (RA) and the risk management (RM). RA is carried out on a scientific basis and for example, it gives the risk integrated index to work out the predictive model thanks to the RM, to be made by managerial and political bodies.

Considering art. 1 of the current L.R. of the Marches No. 15 dated 14/07/2007 entitled “*Discipline of the roles concerning the coast protection*”¹, we reckon that it is appropriate to awaken the attention of political, economical and social parties of the importance of ecotoxicologic risk assessment on the integrated management of dredging sludge.

The proposal hereof plans to accomplish the following objectives:

¹ “The Region, within the management of competences of article 51 of the regional law dated May 17th 1999, No. 10 and of article 14 of the regional law dated May 25th 1999, No. 13, it adopts the integrated management Plan of coastal areas, hereafter called the Plan, with the objective of promoting the protection and the rational use of the coastal areas as well as the protection of its resources”

- To develop the integrated risk assessment for the sustainable management of harbour areas: prevention and/or reduction of the impact concerning anthropic activities.
- To establish a general approach and a guideline principle of risk assessment for the sustainable management of local and regional harbour areas.
- To work out the integrated risk index: “starting point” for the management of local and regional harbour areas:
- To integrate the risk index on local and regional harbour policies.

The use of this methodological approach requires the assessment of the toxic effects that are caused by exposure to harbour sludge of a suitable sentinel species (as provided by the ASTM protocols) and the assessment of the bioavailability of contaminating substances therein present, thus using the “Guidelines for Ecological Risk Assessment” (EPA/630/R-95/002F) and considering the “Technical Guidance Documents (TDG)” on RE of DC 93/67/EEC.

The use of this instrument is essential for the planning of managerial policies for the sustainable management of harbour sludge. On the Department of Sea Science (DiSMar), there are also the required competences for carrying out the second phase, that is to say the development of innovative technologies required for the treatment of dredging materials with the purpose of obtaining secondary raw materials. To that end, with the use of laboratories, harbour deposits will undergo chemi-physical and biological treatments optimized to maximize the removal output of inorganic and organic polluting substances. The effectiveness of the treatments will be evaluated by means of chemical and ecotoxicologic analysis; having as reference the limits required by current regulations that concern various uses (see Fig. 1). The third phase requires the reuse of dredging sludge; the current competences for the use of decontaminated harbour sludge are in the Department of Architecture, Survey, Design, City Planning and History (DARDUS).

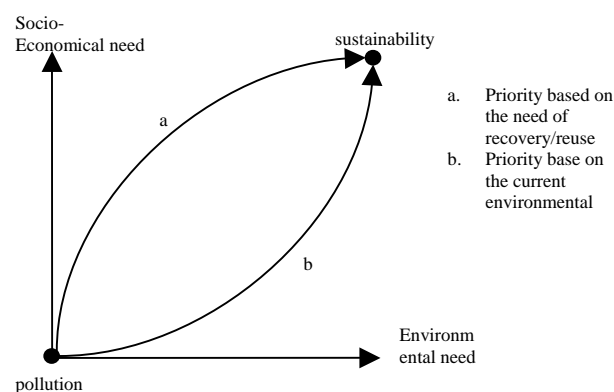


Figure 1 – schematic representation of the sustainable recovery process according to the socio-economical and environmental urge.

The development of a managerial instrument for the management of harbour sludge can represent an innovative service, rigorous and scientific at the disposition of competent authorities, as currently taking place in the Rotterdam Harbour, one of the major European commercial harbours, in which there are already several active scientific dealings.