

# AFTER EMRAS

Suggestion for a project within  
EMRAS – II  
(5 pages)

**BIOTA modelling**  
**Transition from freshwater to marine**  
**environment**

Dynamic food-web modelling  
(3 pages to come)

**R. Heling**

**Nuclear Consultancy and Research Group (NRG)**  
**The Netherlands**

# Unsolved questions in biota modelling

(still 2 pages to go)

- Dynamic modelling biota – at present limited to:
  - Sr-90, Cs-137, and to a lesser extent - Co-60
  - CF approach (marine and brackish environment)
- In dynamic uptake models often no salinity- driven uptake rates (needed for accidental releases)
- Predictive Power for predictive biota models for estuaries and seas limited (use of generic values)
- However - existing prototype models for marine and brackish environment not validated sufficiently

## **Suggestion DBE Ukraine – Salinity driven radionuclide uptake (Cs-137, Sr-90)**

**(one page to go)**

- **Dnieper- Bug estuary – BIOTA**: Data to test current prototype model (Chernobyl data) data available since this year (2007)
- PRO: Abiotic part DBE already modelled in EMRAS-I: endpoint or measurement data can be used as input data
- PRO: Various levels of salinity in estuary present – Salinity data and model results are available from EMRAS-I
- Modellers *at least (no exhausted list)* Russia, Netherlands, others – and maybe Sweden, Italy, France (5 modellers)

# Suggestion Black Sea Biota Modelling

**Salinity driven radionuclide uptake, other nuclides than Cs-137 and Sr-90, other species than fish (last page...)**

- **Black Sea – BIOTA**: Data to test current prototype model (Chernobyl data) data available via Black Sea Project (multi-national project – can be made available - IAEA)
- PRO: Black Sea modelled (3D and box models) for Cs-137 and Sr-90 (other nuclides may have constant levels)
- PRO: other biota than fish, other nuclides available
- PRO: Salinity data (model, measurements) are (or can be made) available
- Modellers *at least (no exhausted list)* Russia, Netherlands, others – and maybe Sweden, Italy, France (5 modellers)

