STATUS REPORT ECOSUPPORT WP2 AS OF JUNE 18TH, 2009

Status directly relevant to WP 2 deliverables sorted by Task and deliverable:

Task 2.1: Model validation of biogeochemical processes

Unified high quality initial, forcing and validation data sets (6)

On the kick-off as strategy plan was agreed and the status is here given for each point on that list

1. *Start with available downscaled ERA40 atmospheric forcing from SMHI.*

Done. New atmospheric forcing has delivered to the relevant partners and the downscaling is documented in a report (Höglund, 2009). New atmospheric forcing implemented in all three models.

2. *Use atmospheric nutrient loads from the present version of the ERGOM model.*

An excel file from IOW with integrated loads to the Baltic Sea has been delivered. BNI is in parallel compiling atmospheric load forcing on basin scales from BED data and from EMEP data. This will be ready and made available to partners by end of June.

3. *Use nutrient loads from land (rivers, diffuse and point sources) from the present version of the ERGOM model.*

An excel file from IOW with integrated loads to the Baltic Sea has been delivered. BNI makes a revision of current loads taking into account the latest PLC-5 data. This data will be available to partners by the end of June.

4. *Compare the river runoff and nutrient loading in the models.*

SMHI have compared the integrated loads to RCO and ERGOM and sent around the information for discussions. The discussion will be reactivated as soon as new BNI data is available

5. *Compare initial conditions of models.*

IOW has delivered ERGOM initial conditions to SMHI and SMHI produced initial conditions by spin up, the latter will be integrated to BALTSEM boundaries and compared to BALTSEM initial conditions.
A check in the BED database indicate that from observations one can construct initial fields of phosphorus for oxygen conditions similar to 1960, but for ammonia and nitrate one have to make some educated assumptions. The ERGOM and RCO initial conditions will be compared to the data set. This is delayed.

6. *Validation data and methods. Suggested variables to validate are: Concentrations of S, T, O2, NH4, NO23 (=NO3+NO2), PO4, pools of DIN and DIP and cod reproduction volumes.*

Annual pools calculated with DAS are delivered by BNI to partners. SMHI has

developed an analysis and validation tool. Extraction tool in Nest for extracting time-series from single stations will be made available to partners by the end of June. Decision on final time-series to use will be taken in the meeting in Tallinn in August and thereafter extraction of data for standard stations from BED will be done.

Model data sets (6)

ERGOM progress:

- Sensitivity runs and 40 years simulation with ERGOM+carbon model were performed
- Analysis of 40 years ERGOM+carbon model simulation with RCA-ERA40 forcing started
- First simulation ERGOM with RCA-ERA40 forcing finished, currently under evaluation

BALTSEM progress:

- Model simulations using new meteorological forcing 1961-2006 have been made.
- Recalibration of mixing parameters after implementation of new meteorological forcing is almost complete.
- A new version is used in ECOSUPPORT, therefore some recalibration of biogeochemical cycles will be performed during summer.
- Incorporation of CO2 sub-model will be done during autumn.

RCO-SCOBI progress

- RCO-SCOBI 2nm simulations for 1961-2007 have been performed
- coupling of RCO-SCOBI and a wave model, improved resuspension calculation and other model improvements
- coupling of biology and physics (via absorption of light)
- forcing data for the scenario simulations have been prepared, the first RCO-SCOBI run will be run hopefully during summer
- some improvements of RCO-SCOBI performance still necessary

Detailed assessment of model skills (9)

Has not started.

Task 2.2- 2.4: Have not started yet

Interaction with other WPs

A first draft of common objectives has been made with WP3.

Discussions started with WP4 about boundary conditions for local models. RCO-SCOBI will provide boundary conditions for open sea for scenarios.

As responsible for WP2, BNI will follow up the coupling to WP4.