Lessons Learned

Norwegian Marine Management

HARMONY, Copenhagen 3-4 November 2010
The Aim of the Management Plans

- Provide a framework for the sustainable use of natural resources and goods and at the same time maintain the structure, functioning and productivity of the ecosystems of the area.

- Ensure that business interests, local, regional and central authorities, environmental organizations and other interest groups all have a common understanding of the goals for the management.
Process for Preparing Integrated Management Plan

FACTUAL BASIS
- Description of the environment and natural resources.
- Status report on industries.

ASSESSMENT IMPACT
- Maritime transport
- Petroleum and energy
- Fisheries
- External pressures

CUMULATIVE EFFECTS
- Cumulative effects
- Conflicts of interest

INTEGRATED MANAGEMENT PLAN FOR THE NORWEGIAN SEA

Vulnerability of particularly valuable areas
Coordinated environmental monitoring: indicators, reference values and action thresholds

STAKEHOLDER INVOLVEMENT
"Stortingsmeldinger"
White papers to the Parliament

Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands

Integrated Management of the Marine Environment of the Norwegian Sea
Political Participation

The Ministry of the Environment (responsible ministry)
The Ministry of Labour and Social Inclusion
The Ministry of Fisheries and Coastal Affairs
The Ministry of Trade and Industry
The Ministry of Petroleum and Energy
The Ministry of Foreign Affairs

Stakeholders

Fisheries
Petroleum industries
Shipping
Recreational users
Institutional Participation

The Norwegian Polar Institute (for the Barents Sea)
The Directorate of Fisheries
The Institute of Marine Research
The Norwegian Petroleum Directorate
The Norwegian Coastal Administration
The Norwegian Climate and Pollution Agency
The Directorate for Nature Management
The Norwegian Maritime Directorate
The Norwegian Radiation Protection Authority

The Directorate for Cultural Heritage.
Organisation of the Management Plan Governance

Interministerial Steering Committee headed by Ministry of the Environment

Advisory Group on Monitoring

Management Forum

Forum on Environmental Risk Management

International Contact

Reference Group
Ecosystem Surveys

- Measuring the state of a suit of indicators
  - Climate and physical oceanography
  - Plankton
  - Benthos, species and structure-building societies
  - Fish species, commercial and non-commercial
  - Seabirds and sea mammals
  - Alien species
  - Vulnerable species
  - Seafood Safety
  - Pollution

Total survey effort in the Barents Sea: ~220 days
Ocean Climate

- Monitor and modelling of the flux of different water masses to and from the Barents Sea
- Input to ACIA work to predict long-term climate changes
- Investigate consequences of climate change on the ecosystem
MAREANO and SEAPOP

- Mapping
- Monitoring (SEAPOP)
- Develop research projects

www.mareano.no
www.seapop.no
Marine Pollution Monitoring Programme

• Objectives
  – Collect data on inputs of oil and other hazardous substances to the marine areas from all sources
  – Monitoring pollution status in selected indicators (cod, air sea water, sediments)
  – Monitoring variation in ocean acidification

• Read more on www.Klif.no
Data Collections and Use

• Collection of data from surveys:
  – “Artsdatabanken”
  – MARBANK
  – DIRNAT (Miljøstatus)
  – IMR (SEA2DATA : infrastructure for efficient streaming of marine data)

• Use of data:
  – Stock assessments
  – National and international reports and advisories
  – Nature Index
  – ++++
Identification of Particularly Valuable and Vulnerable Areas

With areas of particular biological value we mean:
- Areas that are important for biological production
- Areas that are important for biodiversity

Under these two main criteria are a wide range of sub-criteria
Reports

Annual reports on

- State of the ecosystem (Monitoring group)
- Evaluation of the development of human activities (Risk group)
- Evaluation of the management of the region according to the management plan (Expert forum)

Periodic evaluation reports (every 4th year) (all groups)
Lessons Learned

Positive experiences

• Increased cooperation between directorates and research institutions

• Improved communication with stakeholders

• Continual refinement of methodology and reporting from the Barents Sea plan (2005-2006) to the present preparation of a management plan for the North Sea and Skagerrak

• Increased ecosystem-based monitoring

• Use of maps showing Particularly Valuable and Vulnerable Areas have been especially important for political decisions
Lessons Learned

Challenges

- Time allocations to cover all tasks involved
- Methodology to test how efficient integrated management practise is to manage the state of the marine ecosystems
- Fill data gap for indicators on all trophic levels
- Unclear definition of terms and levels of impact
- Methodology used to collect data and for assessment of cumulative pressures
Lessons learned

Challenges

• Integration of accidental events into the integrated, long-term dynamics of the marine regions
• Mapping of the huge areas of Norwegian marine regions
• Detect climatic changes and include adapted indicators
• Detect effects of ocean acidification and establish indicators
Lessons Learned

Challenges

- Measuring the grades of effects of human impacts
- Establishing scientifically based environmental target levels
- Developing integrated evaluation methodology
- Development of complex ecosystem-related indicators
Thank you