DEVELOPING BONUS-169 SCIENCE PLAN
- AN INTERACTIVE PROCESS

The Science Plan is of fundamental importance in providing the vision for a joint Baltic Sea research and researcher training programme. Developing the Plan has been an interactive and exciting process.

- The International Council for the Exploration of the Sea (ICES) with Jan Thulin as the Task leader was given the responsibility for carrying out BONUS Task 2.5 Ideas for potential future transnational research schemes. Starting in May 2005, Chris Hopkins was contracted by ICES as Co-Task leader to advance progress, including designing the main strategy for developing the Plan and being the key-writer for drafting the overall ‘BONUS-169 Baltic Sea Science Plan.’ In early summer 2006, the team was strengthened by the addition of Jon Sutinen (University of Rhode Island, USA).

The work started and has proceeded under the consultation and guidance of the BONUS Executive Committee (ExCom). Based on the progress reports, this forum has taken adaptive decisions about how to best develop the Plan. Other BONUS bodies have also been intensively involved at the different stages in the process.

Approach for developing the Plan

The initial approach adopted was to provide a Science Plan Framework document, acting as a strawman (i.e. a skeleton setting the scene for discussion and improvement), as the precursor for producing the actual Science Plan. The approach incorporated the following key aspects:

- Converting the research needs arising from the management bodies into scientific issues;
- Developing scientific outputs and knowledge to support and enhance the transnational ecosystem-based management of the Baltic Sea;
- Identifying and describing eight Themes to face the Baltic Sea environmental challenges;
- Taking into account policy drivers and users of research products and deliverables;
- Coupling ‘top-down planning’ (e.g. environmental problem orientated) and ‘bottom-up input’ (e.g. question and issue driven priorities of the scientists and research organisations); and
- Keeping the developmental process and the Plan inclusive rather than exclusive, being credible and relatable to the appropriate clusters.

Process and outcome: Many milestones and consultations

After completing the Science Plan Framework document by early summer 2005, the document was made widely available from the BONUS website. Links to the SPF were also set up on the websites of BONUS partners.

The next step was to arrange national consultations in the nine Baltic Sea States. These activities were established to stress the priorities, gaps, and aspirations of the participants. Additionally, single individuals could provide their views directly.

In September 2005, an international consultation of programme managers, scientists and stakeholders was arranged by Task 2.1 in Sopot, Poland. An additional e-mail consultation was arranged in March 2006 for considering issues and topics of specific relevance to the Theme ‘Integrating ecosystem and society’, to ensure a specially targeted outreach to, and wider representation from, social, economic and political scientists. During the earlier consultations it became apparent that these particular scientists frequently were insufficiently represented among the range of participants.

In all, more than 800 scientists and stakeholders have been involved in the consultations, in what must be a landmark consultation of programme managers, in what must be a landmark consultation of programme managers, for which we are very grateful.

In September 2006, ExCom reviewed the development of the Science Plan, and so providing guidance about the focus of future Calls for the submission of project proposals for funding.

Advisory Expert Groups for help and support

In drafting the text-boxes, the Task 2.5 team used Advisory Expert Groups, generally comprising 4-10 well-respected scientists and scientific managers for each Theme, to help develop the foundation including critique the text and to provide independent quality control. The composition of the groups reflected a wide geographical balance within the Baltic Sea States and areas of expertise.

When using this method, the Themes can be viewed as being robust in representing a wide pan-Baltic perspective, and ought to result in relatively few critical remarks from practicing scientists, managers and administrators. Reaching this level has not been a trivial pursuit and has required ‘research’ in the form of reading and closely studying and extracting background information, and painstakingly writing formulations and reiterations of the resulting parts of the draft Plan. This has involved substantial time and energy for all contributors, and confidence building throughout the BONUS apparatus including the scientific grassroots. It is also clear that different parts of the scientific discipline system have different perspectives in tackling similar issues, resulting in the well-known challenge of aligning ‘lumpers and splitters’. However, irrespective of the challenges, we have received an enormous amount of help and support from throughout the BONUS community for which we are very grateful.

Close to closing

After positive feedback of the BONUS Network Steering Committee (NSC) and Advisory Board meetings in June 2006, and developing the Plan further, a complete draft Plan was sent out for the second round of national consultations. In September 2006, ExCom reviewed the feedback and determined a strategy for subsequent revision of the Plan in what it is hoped will be the final version, due to be submitted for approval at the 2 November NSC meeting.

Chris Hopkins & Jan Thulin
Task 2.5 Leaders
ICES
The focus of the joint programme and the Science Plan Themes can be found on page 8.

Bonus Newsletter November 2006
EDITORIAL: ENLIGHTENMENT

Most of the Baltic Sea scientific community and administrators working with marine environmental issues have their academic background in the natural sciences, such as biology, ecology, limnology, oceanography, chemistry or geophysics. A thorough understanding of the function of the aquatic ecosystem is an important condition for good research as well as for good management decisions. In systems that these experts know best, the reserves and fluxes are expressed in terms of energy, biomass, carbon, nitrogen, phosphorus etc.

Another group of researchers and experts in the human, social and economic sciences who might be involved in a broad spectrum of thematic research issues is less familiar with the bio-geo-chemical aspects of the Baltic Sea. But, they understand how the socio-economic system works, i.e. how the people living in the drainage area behave, how they earn their living and how the societal structures regulate these actions. The reserve/flux term for these systems is euro.

Interdisciplinary research that would create a bridge between the two above-mentioned systems has been called for at least for a decade. The results of the mapping of Baltic Sea research, published as BONUS Publication Nr 3 Baltic Sea Research and R&D Funding in 2004 revealed that a socio-economic approach was present in only eight per cent of the projects carried out in the Baltic Sea countries in 2004. This research approach is internationally young and in its infancy in the Baltic Sea. Important initiatives towards this direction in Baltic Sea research have, however, recently been made within the Swedish research programme MARE, the Finnish programme BIREME and by the Polish research team whose approach is described on page 6 of this Newsletter.

One of the pioneers in applying socio-economic in marine research is the Large Marine Ecosystems programme. I read their recently published handbook A Handbook on Governance and Socioeconomics of Large Marine Ecosystems and experienced a major moment of enlightenment. It was the first time for me, having a natural scientist’s background, to intuitively understand the meaning the term ‘marine socioeconomics’, which I myself have used in various contexts quite deliberately.

We all have our own ways of discovering new ideas and approaches. Nevertheless, my personal feeling and belief is that the Baltic Sea scientific community is on the verge of a major breakthrough as regards linking science and policy.

Kaisa Kononen

1) www.iwlearn.net/abc_iwlearn/pns/learning/lme-handbook.pdf/view

BONUS ERA-NET IN A NUTSHELL

The ERA-NET scheme is the principal means for the EU Sixth Framework Programme (FP6) to support the cooperation and coordination of research activities carried out at national and regional level. The objective is to encourage and support initiatives undertaken by several countries, in areas of common strategic interest, to develop synergy between their existing activities through coordination of their implementation, mutual opening and mutual access to research results; and to define and implement joint activities through the networking of research activities conducted at national or regional level, and the mutual opening of national and regional research programmes.

BONUS operates in close connection with the scientific and management actors in these countries. The aim is to gradually and systematically create conditions for a joint Baltic Sea research and researcher training programme.

Coordinator
Academy of Finland, Programme Unit,
Dr Kaisa Kononen, Programme Manager
(kaisa.konenen@aka.fi)

BONUS Workpackages and Tasks
WP 1: Collection and exchange of information and best practise
Task 1.1 Exchange of information on initiation, preparation, implementation and evaluation of research programmes
Task 1.2 Exchange visits of programme managers
Task 1.3 Providing a common directory of qualified evaluators

WP 2: Strategic activities
Task 2.1 Identification of areas for cooperation in existing programmes and gaps of knowledge
Task 2.2 Analysis of legal and administrative possibilities and barriers for funding transnational programmes
Task 2.3 Development of a common evaluation scheme
Task 2.4 Durable integration of national marine research funding schemes in Associated Candidate Countries in the ERA
Task 2.5 Ideas for potential future transnational research schemes

WP 3: Implementation of joint activities
Task 3.1 Proposals/position paper on common use of marine research infrastructure
Task 3.2 Action plan for creating joint programmes
Task 3.3 Development of postgraduate training scheme

WP 4: Coordination, management and dissemination
Task 4.1 Coordination office
Task 4.2 Forum of Programme Managers

WP 5: Review and assessment
Task 5.1 Review and assessment

Partners
Academy of Finland, Coordinator
Project Management Organisation
Jülich, Germany
Danish Agency for Science, Technology and Innovation (Danish Natural Science Research Council)
Estonian Science Foundation
International Council for the Exploration of the Sea
Ministry of Education and Science of the Republic of Lithuania
Latvian Council of Science
Ministry of Science and Higher Education, Poland
Institute of Oceanology of the Polish Academy of Science
Russian Foundation for Basic Research
Foundation for Strategic Environmental Research, Sweden
Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning
Swedish Environmental Protection Agency

Bonus Newsletter November 2006
SCIENCE AND THE CHALLENGE OF REVERSING MARINE EUTROPHICATION

Eutrophication, the increase in the supply of organic matter due principally to enhanced primary production stimulated by nutrient inputs, has long been regarded as one of the most important problems in the Baltic Sea and its coastal areas. Creation of oxygen-depleted (hypoxic) bottom waters, elimination of seagrass and macroalgal meadows, and stimulation of blooms of Cyanobacteria and other harmful algae are among the many undesirable consequences of eutrophication. From the 1988 Ministerial Declaration that targeted on the order of 50% reduction in discharge of nitrogen and phosphorus through more recent HELCOM declarations and European Commission directives, reducing eutrophication has been regarded as a keystone element of Baltic environmental protection and restoration.

Progress in achieving goals set for reducing nutrient inputs or alleviating the consequences of eutrophication has been slower than first anticipated. In particular, it has proven difficult to reduce inputs from diffuse sources such as agricultural runoff and atmospheric emissions. Also, residual “internal loads” of phosphorus built up over decades may delay ecosystem recovery. Nonetheless, in some parts of the Baltic Sea region substantial progress has been made in reducing nutrient inputs from point sources and even some diffuse sources. Results presented at the June 2006 International Symposium on Research and Management of Eutrophication in Coastal Ecosystems in Nyborg, Denmark, brought together emerging knowledge of the responses of coastal ecosystems to the abatement of nutrient pollution. The knowledge resulting from such management “experiments” is yielding insights on the thresholds in nutrient loading required for restoration, lag times in responses, and resilience of coastal ecosystems that will prove invaluable in refining management goals and actions and, thus, achieving results.

Research in the Baltic region over the last thirty years has led the world in understanding the causes and consequences of marine eutrophication. Nonetheless, substantial and important scientific questions remain concerning limiting nutrients, nutrient storage and recycling, the causes of harmful algal blooms, recovery rates, and, most importantly, the effectiveness of various management practices. For example, last year I served on a panel of international experts advising the Swedish Environmental Protection Agency that in its report, Eutrophication of Swedish Seas, could not come to full agreement on the importance of reducing nitrogen as well as phosphorus inputs.

The BONUS-169 Baltic Sea Science Plan includes Combating Eutrophication as the third of its eight themes. The plan targets research on inputs and origins, flux and mass balance of nutrients; effects and consequences of eutrophication in the ecosystem; and scientific strategies for improving monitoring, assessment and management. In implementing this plan, BONUS has the unique opportunity to bring together the scientific resources and talents of the nations around the Baltic in a highly strategic and focused manner and link them to management of the critical and vexing issue of reducing eutrophication.

This Baltic initiative appears to be the first time that the knowledge generated is transferable to the rest of Europe in its combat with eutrophication in the North, Irish, Mediterranean, Adriatic and Black seas and the many estuaries and embayments experiencing eutrophication. Moreover, it provides important comparisons and lessons for those of us in North America who are laboring to understand and reverse eutrophication in places like the Chesapeake Bay and the 13,000 km2 “Dead Zone” of hypoxia in the northern Gulf of Mexico off the Mississippi River.

Marine eutrophication is truly a global problem and as populations increase and standards of living improve in the developing world, impacts similar to those that were manifest during the latter 20th century in the industrial world are emerging. By working to solve regional problems in the Baltic or in the Chesapeake Bay where I live, scientists can also help the rest of the world avoid mistakes and find effective solutions.

Donald F. Boesch
University of Maryland
Center for Environmental Science
Member of BONUS Advisory Board

THE ESSENTIAL FOCUS OF THE BONUS-169 SCIENCE PLAN:

- Mission of BONUS is to establish durable cooperation of the Baltic Sea States’ research policies and their scientific communities in order to support the region’s sustainable development.
- Goal is to create a cooperative, interdisciplinary, well integrated and focused transnational research programme in support of the Baltic Sea region’s sustainable development, by providing scientific outputs that facilitate the implementation of ecosystem-based management of the Baltic Sea environmental issues.
- It will enhance our understanding and predictive capacity about the Baltic-Sea ecosystem’s response to impending changes caused by both naturally and human induced pressures and about linkages between environmental problems and the social and economic dynamics in responding to them. In turn it will form the basis for prudent management aimed at safeguarding the sustainable use of the ecosystem’s good and services.
- It will act as a regional sea demonstration programme bridging science and policy, underpinning the European Marine Strategy and Maritime Policy. Lessons learnt and best practices will be exchanged with other European regional seas.
- BONUS-169 will also promote activities to foster the whole Baltic Sea Research Area – including four new EC Member States and the Russian Federation – through the formation of a Baltic Sea Research Council, and to cross the national borders of basic research towards application and dissemination of knowledge.

For details, we encourage you to see the currently drafted version of the BONUS-169 Science Plan by visiting the BONUS website (www.bonusportal.org)

Jan Thulin and Chris Hopkins
ICES
INTEGRATING ECOSYSTEM AND SOCIETY: GOVERNANCE AND SOCIO-ECONOMICS OF MARINE ECOSYSTEMS

Applying the ecosystem approach to management of Baltic Sea resources requires an understanding of the fundamental, underlying mechanisms that drive human behaviour, and more specific knowledge of how humans use and encroach upon marine ecosystems directly and indirectly for social, cultural, and economic benefits. The human activities that generate these benefits include oil and gas exploration and production including platforms and pipelines; shipping and maritime transport; mining and mineral and aggregate extraction; fisheries and aquaculture; coastal engineering and land reclamation; dredging and dumping of wastes and litter; power generation such as wind-farms; human settlements and coastal industries (e.g. pulp and paper, iron and steel, chemicals and petrochemicals, and food processing operations); and recreation and tourism. The benefits from these activities have drawn people to settle in and visit coastal areas of the Baltic Sea, increasing the crowding and ecological impact in the coastal areas. Human encroachment in the Baltic Sea’s drainage basin has, in turn, led to degradation in ecosystem health that has resulted in detrimental socioeconomic impacts in the region. The settlement and growth of populations in the coastal zone, in conjunction with the associated economic activities, constitute a set of major forces affecting the Baltic Sea ecosystem.

What is Governance?

The application of the ecosystem approach to management (EAM) requires careful consideration of how change within ecosystems is analyzed, how goals are set and how human activities within ecosystems are regulated – which involves governance, not just management. Scholars view governance to be much broader than and distinct from management. My colleague at the University of Rhode Island, Stephen Olsen, notes that governance addresses the values, policies, laws and institutions by which a set of issues are addressed; and it probes the fundamental goals and the institutional processes and structures that are the basis for planning and decision-making. Management, in contrast, is the process by which human and material resources are harnessed to achieve a known goal within a known institutional structure. Governance encompasses the formal and informal arrangements, institutions, and traditions that structure and influence (i) how resources or an environment are utilized; (ii) how problems and opportunities are evaluated and analyzed; (iii) what behavior is deemed acceptable or forbidden; and (iii) what rules and sanctions are applied to affect the pattern of use.

In this context, governance is neither synonymous with management nor confined to the actions of government. It includes all mechanisms and institutions that serve to alter and influence human behavior. My colleague Lawrence Judd has identified three basic governance mechanisms that drive and shape humans’ use of and encroachment upon ecosystem resources: markets, government, and the institutions and arrangements of civil society. Individually and collectively the three mechanisms of governance affect human and material resources, and of the marine ecosystem’s altered productivity and biodiversity, and poor overall health.

Government policy and regulation, whether at a local, regional, or national level, are well recognized mechanisms that can affect human behaviour. Fiscal policies can provide incentives for particular types of conduct and, through government spending patterns, direct society’s resources to promote specific objectives. Regulatory efforts, such as zoning and permitting, can channel costs of the economic activities that use and encroach upon ecosystem resources. As a consequence, market-driven economic activities are one of the direct causes of overexploited fishery resources, and of the marine ecosystem’s altered productivity and biodiversity, and poor overall health.

As a manifestation of social capital, nongovernmental organizations (NGOs) at local, national, and international levels actively and purposefully seek to influence public policy on a wide range of issues. NGOs play multiple roles in affecting behavior and public policy. They may serve as advocates of particular courses of action for government (e.g., to prohibit oil exploration in the Baltic Sea) or of societal behavioral patterns (e.g., rejection of corrupt practices) or seek to encourage or discourage enactment of particular pieces of legislation. In democratic and pluralistic societies, nongovernmental groups play important constituency roles, affecting both governmental and marketing decisions with attendant ramifications for the natural environment. As with markets and government, the institutions and arrangements of civil society

Governmental institutions are not always perfect, however, and can sometimes implement policies that are counter-productive and ultimately harm the status of an ecosystem (for example, subsidies that aggravate fishing overcapacity).

The institutions and arrangements of civil society play a central role in influencing behaviour. Social norms and networks (social capital) shape individual and collective behaviour, and also facilitate cooperation among individuals and between groups of individuals. The social norms and networks can encourage trust, civic engagement, and enhance effective governance while reducing management costs. These have considerable potential for advancing the EAM in informal governance systems. Elinor Ostrom and other scholars have shown that the institutions and arrangements establish ‘working rules’ that are commonly known, monitored and enforced. As a manifestation of social capital, nongovernmental organizations (NGOs)

As a manifestation of social capital, nongovernmental organizations (NGOs) at local, national, and international levels actively and purposefully seek to influence public policy on a wide range of issues. NGOs play multiple roles in affecting behavior and public policy. They may serve as advocates of particular courses of action for government (e.g., to prohibit oil exploration in the Baltic Sea) or of societal behavioral patterns (e.g., rejection of corrupt practices) or seek to encourage or discourage enactment of particular pieces of legislation. In democratic and pluralistic societies, nongovernmental groups play important constituency roles, affecting both governmental and marketing decisions with attendant ramifications for the natural environment.
society are not always supportive of sustainable development, since social norms are not always consistent with conserving marine ecosystem resources, protecting habitats and the quality of the aquatic environment.

**Dealing with Governance Challenges**

Unfortunately, the mechanisms of governance often fail to support sustainable development, and policies and programmes need to be developed and implemented to correct and mitigate these failures. Many of the world’s marine ecosystems have been deteriorating over the course of several decades. The stylized facts might read as follows. At about 1950, economic activity rose and the condition of the typical marine ecosystem began to decline with increased pollution, habitat destruction and overfishing. The market value of ecosystem services initially grew and then declined as the condition of the natural marine ecosystem began to decline. During the 1980-2000 period, the condition of the natural marine ecosystem continued to decline, which in turn weakened economic activity dependent on marine ecosystem resources.

At present, the typical marine ecosystem finds itself with relatively low economic activity and low non-market value of ecosystem services, which are the result of the degraded condition of the natural components of the marine ecosystem.

Many of these undesirable outcomes can be traced back to markets that do not tell the ecological truth. Markets favor those who can produce and sell at the lowest cost. The market mechanism in effect drives participants to ignore the ecological costs of pollution, of habitat destruction, and of overexploitation. As explained above, the market does not properly value ecosystem goods and services and natural assets. A key to creating a market that supports sustainable development of marine ecosystem resources is to get it to tell the ecological truth. If we can design or reform markets so that they tell the ecological truth, we can correct or mitigate their tendency to harm marine ecosystems.

The first set of tasks is to calculate the ecological costs of those activities that are extracting marine ecosystem resources, polluting and altering the environment. Economists can work with natural resource scientists to calculate these costs. This work will require integrating the socioeconomics research with natural science research on fisheries, pollution and ecosystem health, and productivity (c.f. the Large Marine Ecosystem modular approach developed by Kenneth Sherman and associates). Once the ecological costs of resource extraction, pollution, and reduced productivity are calculated, the costs can be incorporated into the market prices. One way to incorporate ecological costs into market prices is applying taxes to those activities that harm the ecosystem. Another way is to place a cap on the amount of the damaging activity and allow producers to trade their allowances - known as ‘cap and trade’ and ‘tradable permits.’

The approach that some countries are using is not to simply add more taxes and eliminate subsidies, but rather to shift taxes and subsidies to work in ecologically benign ways. For example, some countries are reducing income and property taxes in exchange for adding taxes on environmentally damaging activities, with an over all neutral effect on the total amount of taxes collected. Subsidies can also be shifted such that their over all level is essentially unchanged while they no longer promote ecological harm.

If these and other ways are found to tame markets so they support conservation, we can look forward to improving the ecological condition of marine ecosystems.

**The Role of Science**

The establishment of effective, good governance presents several challenges to governments, resource users and other stakeholders, and to the scientific community concerned with the long term sustainable development of marine ecosystems. To achieve the goal of sustainable development, policies and programmes need to account for the underlying mechanisms that drive human behaviour, and be based on specific knowledge of how humans use marine ecosystems directly and indirectly for social, cultural, and economic benefits. In other words, there is a need to understand, explain, and predict variations in those human activities that impact habitats, pollute, cause eutrophication, and overexploit a marine ecosystem's natural resources. If we improve our ability to explain and predict human interactions with the natural components of marine ecosystems, we stand a better chance of establishing good and effective governance institutions for the sustainable development of the Baltic Sea and other marine ecosystems.

The BONUS scientific community can contribute to the understanding of the three governance mechanisms by conducting research on the human dimensions of the Baltic Sea marine ecosystem. A principal goal of the theme on integrating ecosystem and society is to provide the social science information needed to support BONUS-169's integrated ecosystem approach to management of Baltic Sea resources. The BONUS Science Plan (page 2) emphasizes that the EAM is 'the comprehensive integrated management of human activities, … [emphasis added]. The goal would be achieved in part by assembling data and producing analyses that explain and forecast human interactions with the natural components of the Baltic Sea ecosystem. To further aid policy makers, the research programme will assess how humans have been and will be impacted by the spatial and temporal variations in all components (natural and human) of the Baltic Sea ecosystem; and assess society's preferences and priorities for conserving, protecting and restoring Baltic Sea ecosystem resources.

Some of the key research issues for the theme area of integrating ecosystem and society are (1) to explain the spatial and temporal variations in the uses of and encroachment upon the principal ecosystem resources (e.g. land use, waste disposal, extraction of living marine resources, recreation and tourism) in the Baltic Sea ecosystem; (2) to develop spatially and temporally dynamic models of human activities that are explicitly linked to the natural components of the Baltic Sea ecosystem and that can both explain and forecast those activities; (3) to estimate society's values for conserving, protecting and restoring Baltic Sea ecosystem resources; and (4) to develop the scientific basis for improving governance of the Baltic Sea ecosystem.
The idea is not completely new. A well-known paper by Constanza and coauthors from the USA on goods and services of the natural ecosystem appeared in Nature in 1997, while in October the same year, the European Science Foundation organized a major meeting on Integrated Coastal Zone Management in San Feliu, Spain. Three equal representations of natural scientists, economists and sociologists met to discuss the common ground of nature management based on socio-economic terms (Dronkers et al. 1998). Soon, the idea of valuing environmental goods from the human point of view was supplemented by the concept of biological valuation (see review in Dronkers et al. 2006). In this latter case, natural processes are seen regardless of their meaning for the human use – the more intrinsic value it has. Whatever the difficulties, there is an urgent need for a scientific approach to the assessment of the environment. Increasing human pressure on sea space is observed all over the world. New types of infrastructure require more cables, pipelines and platforms. Windmill farms, extraction of sand and gravel are increasing in coastal waters, while defence, recreation, nature conservation and fishery claim the same space. Typically, those claims are excluding each other. The only solution is an open and fair system of decision-making. To decide whether or not the given part of seabed shall be granted for the windmill farm or left for fishery, the price tag is needed. How much is a certain part of seabed worth? How much is for local upwelling? This may sound ridiculous, but this looks like the only way to solve the serious management problems. Important is not to stop just on the “non-market valuation” provided from the human use point of view (Champ et al 2003), but to supplement it with the biological valuation. The combination of the two approaches permits to value some small, specific areas. Purely in the socio-economic terms, too small space units will most often be undervalued

Price tags in the sea – do we need them in the Baltic?

(e.g. isolated stony outcrops on the large mobile sand bank). Biological valuation may bring more realistic meaning to such a small feature (e.g. as a stepping stone for some rare organisms). For the best-qualified information about the value of the environment, close collaboration between natural scientists, economists and sociologists is necessary. Still, the decision-making shall be left to democratic representatives of the community, and scientists shall not get involved in politics. Scientists may say “this area of seabed, thanks to its function as a natural biocatalytic filter is worth xxx euros per m2”, and its biological function makes it the second most important sea area within EEZ”. Having such information, the decision whether to place a windmill farm there or extract sand and gravel, shall be taken by clerks.

Jan Marcin Wesławski
Institute of Oceanology
Polish Academy of Sciences

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TRANSFORMATION OF R&D AND MARINE RESEARCH IN NMS

Second, the rebuilding the R&D institutions of Lithuania, Latvia and Estonia is taking place a relatively similar way. Former scientific institutions that have belonged to the Academy of Sciences have been subordinated to universities. The academies themselves have been reorganised into personal academies and do not fulfill the role of the central authority for science as before. The tempo and technicalities are still different. Nevertheless, Poland is keeping its traditional science organisation. The Polish Academy of Sciences (PAN) is maintaining its position as an umbrella organisation for a number of research establishments.

Russia has a different kind of organisation. There is still strong state-owned research institutes, managed and financed by different governmental bodies. Universities have very poor target finances for research today. The Academy of Sciences still has a significant role in research activities.

Third, in all the NMS (Estonia, Latvia, Lithuania, Poland) most activities classified as R&D are politically managed and also funded by the ministries of education and science. Several institutions of applied research are administered also via the ministries of economy, agriculture and environment. Funding is politically very sensitive.

In addition, R&D in the NMS is still rather dependent on funding from the state budget. Ca. 78–94 per cent of personnel in R&D is paid by the governmental sector and public universities (lowest in Estonia, highest in Lithuania), compared to 37–42 per cent in other partner countries (highest in Finland, lowest in Denmark). The role of the private sector in R&D is developing fastest in Estonia (from 10% to 20% within the last seven years), whereas there is a slow increase in Lithuania (from 5% to 23% within nine years), but no major changes in Latvia. Poland is moving into the opposite direction.

All the NMS have recently revised their R&D funding principles and passed appropriate regulations. Estonia and Latvia have introduced the arrangement of targeted financing of R&D institutions to secure the stability for personnel and the maintenance of basic equipment and facilities (R&D infrastructures). The basic funding covers about one-sixth of R&D expenditure in Estonia today. Latvia has just started with these arrangements. In Poland, R&D funding is decided annually by the leading ministry that bears the proposals of the appropriate advisory commission. Targeted research projects (top-down) are financed on the basis of the National Framework Programme. The Lithuanian Ministry of Education and Science allocates funding on an annual basis. The results from the previous year serve as a starting point for funding decisions.

Besides central financing facilities, the NMS as well as Russia have successfully introduced granting mechanisms based on bottom-up initiatives. There are no marine science programmes in the NMS at the moment. Targeted financing from the state budget is based on the governments’ official R&D priorities. Poland is the only one that has fixed the environment as a priority for now. Latvia has succeeded to include marine sciences into the state priority list coming into force in 2007. Marine scientists of Latvia are presently preparing a special programme to realise this priority. Lithuania has recently passed a law that allows proposals to be made to the government on a targeted programme; there is also a government proposal presently in progress. Estonia has no priority and no proceeding for a special programme on marine science. Poland has an SCOR programme (since 1999), which is not automatically secured by public funding but plays a role, e.g. in the accepted R&D strategy for marine science. Legally, since 2005 the funding of programmes is allowed, too.

Comparing the legal conditions for cooperation with foreign researchers, Latvia seems the most open to include foreign scientists into the national crew. Other NMS require the occupation of a foreigner by domestic institutions. Russia cannot finance an invited scientist. Concerning the languages used, Estonia, Latvia, Lithuania and Poland practise the R&D documentation, besides in their national language, also in English. The Russian RFBR works only in Russian.

The number of national projects on Baltic Sea research is related to the national funding capacity of R&D. Under the pressure of the Lisbon Agenda, all the NMS are taking measures to increase the GERD percentage. If the EU GERD average is about 1.8, then fastest growing Estonia has achieved 30 per cent of it for 2004 (Finland 3.7 and Sweden 3.5), Lithuania 40 per cent, Poland 30 per cent and Latvia 25 per cent.

Poland has been the most active partner in international projects; Estonia, Latvia and Lithuania have been active partners as well. Russia is participating only in three joint marine research projects in the Baltic Sea basin.

The overall wealth of society strictly determines the R&D capacity among the Baltic coastal states. It will take some until Poland, Lithuania, Latvia and Estonia can participate in Baltic research as equal partners with Finland, Sweden, Denmark and Germany. Russia’s financing of marine research is also very poor compared to its potential capacity. Germany, for example, continuously spends several times more money on marine research than Russia.

Russia has a remarkable scientific potential in marine research: there are about 20 large R&D institutions dealing with research (P.P. Shirshov Institute of Oceanology being the largest with some 1,600 employees!), highly qualified research personnel, a large fleet of underemployed research vessels and rich databases of scientific data. At the same time, Russia has some serious obstacles to organising joint research on an equal basis, mostly political. The RFBR is showing diligent initiative to improve this situation.

Andrus Ristkuk
Estonian Science Foundation

Mike Elliott, Director of the Institute of Estuarine and Coastal Sciences, UK, spent three days in Helsinki and interviewed all project leaders, one student from each project as well as members of the funding organisations, stakeholders and coordinators. The Chair also participated in the symposium. In addition, a considerable amount of written material had been provided to the panel in advance. The evaluation report will be published in November (early December) 2006.

The final symposium ‘A view to the future’ was attended by altogether 100 scientists. The two keynote presentations, 23 oral presentations and 32 posters provided a comprehensive overview on what has been achieved within the BIREME programme and also gave indications of where immediate research efforts are needed. Both the presentations and general discussions clearly showed that the Finnish Baltic Sea research community has gained stronger the last years and that the lifespan of BIREME and is now fully prepared to respond to new challenges ahead.

Tuula Aarnio

BONUS started in late 2004, when Estonia, Latvia, Lithuania and Poland were preparing to become EU members. Certain plans were made and followed to harmonise the R&D management with the regulations common to older EU members. As a matter of fact, this transition from earlier centrally governed science planning to a more liberal, western-like system had started immediately after their regaining independence and disconnecting the management from the Soviet dictate.

Nevertheless, the overall process developed comparatively slowly until EU membership was gained. The tempo has speeded up fast after the spring of 2005. But, differences are still evident among the New Member States (NMS), and in order to move towards smooth cooperation in the future, some significant changes are required in the NMS.

Comparing the NMS, and also Russia (as a traditional and inevitable partner in Baltic marine research!), with each other, one can identify the following similarities and major differences.

First, several countries have an abnormal age structure of personnel. The years after the collapse of the socialist camp have caused a significant loss in certain age groups of scientists. Russia and Latvia have suffered the most. Therefore, all the NMS work to develop a special approach to encourage young scientists.

The third week of September was a real momentum for the Finnish Baltic Sea Research Programme BIREME (2003–2005/2006) and its researchers: the final evaluation panel and the final symposium took place back to back. Twenty-one projects carried out within the programme had reached their end – and three projects will be completed by the end of 2006 – and were at the stage of summarising their results. The results were first presented to an international evaluation panel, followed by a presentation to a larger audience during the BIREME final symposium.

An evaluation panel, chaired by Professor

BIREME APPROACHING ITS FINALE

The following presentations have been prepared:

Mike Elliott, Director of the Institute of Estuarine and Coastal Sciences, UK, spent three days in Helsinki and interviewed all project leaders, one student from each project as well as members of the funding organisations, stakeholders and coordinators. The Chair also participated in the symposium. In addition, a considerable amount of written material had been provided to the panel in advance. The evaluation report will be published in November (early December) 2006.

The final symposium ‘A view to the future’ was attended by altogether 100 scientists. The two keynote presentations, 23 oral presentations and 32 posters provided a comprehensive overview on what has been achieved within the BIREME programme and also gave indications of where immediate research efforts are needed. Both the presentations and general discussions clearly showed that the Finnish Baltic Sea research community has gained stronger the last years and that the lifespan of BIREME and is now fully prepared to respond to new challenges ahead.

Tuula Aarnio

BONUS Newsletter November 2006
BONUS GOES TO THE EUROPEAN PARLIAMENT

KOSTAS NITTIS
A NEW MEMBER OF THE BONUS ADVISORY BOARD

What is your professional background?

I am a marine scientist of the Hellenic Centre for Marine Research (HCMR) in Athens, Greece. My current position is Senior Researcher of the Institute of Oceanography; I joined HCMR in 1997 following a research-associate position at University of Athens (1993-1997). My studies were in Physics (BSc) and Physical Oceanography (PhD).

What are your main professional interests?

My main research activities are in the field of Operational Oceanography. I have the scientific coordination of our national program on this topic and I work closely with EuroGOOS and I-GOOS for the development of Operational Oceanography on Global and Regional scales. During the past 7 years I have been actively involved in European Marine Science integration and networking activities both as a member of the Marine Board of ESF and as a national expert of the Greek research funding agency (General Secretariat for Research and Technology). In the same context, I am currently involved in the MarinERA project that aims to network European Marine RTD funding agencies and contribute to opening of Member States. Implementation of the Marine Strategy is a broad issue and thus cannot be properly categorised, which makes it difficult to deal with in a political context. More information and maybe the exchange of opinions, research results and best practices would make the goal a bit less difficult.

What are your expectations related to the BONUS project?

BONUS is playing a leading role in the European efforts for Marine Science integration. From a strategic point of view, it demonstrates that the combination of thematic and regional approach is the way forward for Marine Science in Europe. From a practical point of view it has already started to provide “best practices” to similar EraNET activities. But, above all, its efforts to move towards an Article 169 initiative have really raised the expectations and have shown that Marine Science can be high in the European research-agenda if good coordination and strong commitments are put together.

What kind of opportunities and challenges can you see in the Baltic-Mediterranean regional seas cooperation?

The differences and commonalities of these two regional seas of Europe have always been an interesting topic for both environmental and socio-economic research. They are both semi-enclosed seas with important environmental pressures and, thus, their ecosystem health heavily depends upon policies and practices of the surrounding countries. Collaboration (at research and policy levels) has always been strong in both seas but Baltic now makes a big step ahead through the BONUS project. The Mediterranean community has a lot to learn from this effort; in the same time it fully supports it, recognizing the value of combined regional/thematic approach. This approach is actually followed by the large integrated projects of FP6 (SESAME, CIRCE) currently conducted in the Mediterranean Sea. Regarding challenges, one should mention the different level of development between the two regional seas, since the Mediterranean partnership includes many non-EU countries that should also participate in such common efforts.

BONUS Coordinator, Kaisa Kononen, was invited to give a presentation on BONUS actions for the members of the Committee on the Environment, Public Health and Food Safety (ENVI) on 18 September 2006. BONUS was presented during the hearing on Marine Environmental Policy that gathered approximately 70 participants and listeners. The main message of the hearing was that Europe needs a common marine policy. Speakers were divided into two panels, “Good Environmental Status of European Oceans and Seas” and “Regional Coordination”. Among the other speakers there were experts from institutions such as the Centre for Environment, Fisheries and Aquaculture Science and Leibniz-Institute for Marine Sciences IFM-GEOMAR. Kononen was welcomed by the Socialist Group in the European Parliament (PSE). It is, of course, a rare honour that MEP Marie-Noelle Lienemann took the initiative to organise the hearing and included BONUS in the agenda. However, there has been a lot of work done before BONUS reached this far and still more efforts are needed to implement the programme under Article 169. Next spring BONUS will organise an exposition in the European Parliament, this time hosted by MEP Eija-Riitta Korhola.

MEP Marie-Noelle Lienemann led the discussion. She said that it is important to discuss the marine strategy now and to include all that is essential, because this is the moment when the Parliament can influence it, as the strategy is in the co-decision procedure. True; indeed; it is also the time, when the Commission is making the decisions on Article 169 Actions. Lienemann stressed that first we have to have a common understanding of what we mean by the responsibilities and concepts, and what are the issues that can be treated as exceptions of these rules.

The Mediterranean area and the Barcelona Process were much discussed during the sessions. The Baltic Sea was stamped as one of the priorities of the Finnish EU Presidency. Kononen stressed in her speech that BONUS needs urgently support from the EU and the Member States. Implementation of the Marine Strategy is a broad issue and thus cannot be properly categorised, which makes it difficult to deal with in a political context. More information and maybe the exchange of opinions, research results and best practices would make the goal a bit less difficult.

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