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A Common Approach to the Implementation of ICZM in the Baltic Region: The Principles underlying such an approach

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Summary

All Baltic Sea countries are, without exception, engaged in ICZM work, although there is no specific legislation pertaining to ICZM in the Baltic region which must use existing policies and instruments. Experience suggests that these ICZM initiatives are meeting significant constraints which relate to continued institutional, traditional ways of thinking, the prevalence of a sectoral approach towards management issues, a lack of involvement of all stakeholders and problems with full public participation. Furthermore, the intensive, and increasing, anthropogenic pressure on the sensitive and vulnerable ecosystems and biodiversity of the Baltic Sea region means that Integrated Coastal Zone Management needs to be systematically implemented throughout the region. Therefore, the Third Meeting of the Nature Conservation and Coastal Zone Management Group (HELCOM - Habitat), held in Gdynia, January 29th - February 1st, 2002, decided that a Common Approach for ICZM in the region should be developed. Consequently, this review of current ICZM practice has been made to harness the experience already gained in the rest of Europe and elsewhere.

The Coastal Area Management programme (CAMP) of the Mediterranean Action Plan (MAP) was the first systematic approach to ICZM in Europe. However, despite over twelve years of ICZM experience in the region, the basic question of whether it is necessary to develop a shared, long-term strategic vision for coastal management is still being asked. Globally, few other countries have developed specific principles to support their ICZM programmes.

The EC Recommendation on ICZM states that Member States should commit to a Common Vision for the future of their coastal zones and has laid out a set of principles to be adopted concerning good coastal management. However, these principles are very broad and, at best, provide only a framework. Alone, they will not prevent the further degradation of coastal habitats and biodiversity. Neither does the EC strategy, developed from the Recommendation, deal specifically with conservation issues or with the question of the marine environment and how far it should be considered within ICZM planning.
Therefore, HELCOM will need to develop a separate Recommendation on ICZM pertinent for the Baltic area which will embrace the content of the EC Recommendation but include additional parts or actions e.g. specific, underpinning reference to the ecosystem approach and inclusion of off-shore marine areas when implementing ICZM.

A draft has already been formulated which will embrace the content of the EC Recommendation but include additional parts or actions e.g. specific, underpinning reference to the ecosystem approach and inclusion of off-shore marine areas when implementing ICZM. This document calls for the nine riparian states to develop national ICZM strategies. However, in order to have a Common Approach in order for these strategies to be fully effective, it is important that there be full agreement on the principles which underpin ICZM. This can will only be accomplished by the adoption of a set of specific principles which augment those of the EC and which are adopted alongside them and which take into account the special nature of the Baltic Sea and its high vulnerability to rapid, human-induced change.

Therefore, when considering the implementation of ICZM, the following underlying principles should be used in the Baltic Region to govern all spatial planning decisions:-

1. *Biodiversity must be conserved, and environmental damage prevented, as a prime consideration in coastal development.*
2. *ICZM must be based on an understanding of coastal and marine ecological processes and dynamics and the ecosystem approach should be used when planning ICZM.*
3. *ICZM should include the Exclusive Economic Zone*

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4. *ICZM should be linked to, and co-ordinated with, freshwater and land planning and management.*
5. *Sustainable use is a prerequisite in ICZM.*
6. *Cultural heritage must be preserved.*
7. *All levels of government within a country must be involved in coastal management & planning and there should be trans-national co-operation in coastal border projects.*
8. *Public participation, including relevant stakeholder involvement, must be an inherent part of coastal management programmes.*

Furthermore, the following should always be considered when implementing ICZM as an incentive for good management practice:-

9. *The use of economic instruments.*
10. *The precautionary principle.*
11. *Adaptive management.*
12. *Environmental Impact Assessments.*

In order to implement ICZM adequately according to these principles and instruments, it is necessary that:-

13. *Data and information concerning ICZM should be systematically collected, and used by the appropriate stakeholders.*

Following the adoption of this set of supporting Principles for the Baltic, together with a draft Recommendation on ICZM, the next step will need to be the development of a Strategy for implementation of ICZM in the region.

I. Introduction

The Baltic Sea is a relatively shallow inland sea surrounded by Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. It also receives surface water drainage from five other countries: Belarus, Czech Republic, Slovak Republic, Norway and Ukraine. It is one of the major brackish water basins of the world and is physically dominated by the freshwater input by rivers and precipitation and limited inflow of more saline water via the shallow entrances to the North Sea.

Nearly 85 million people live in the Baltic catchment area, 26% of them in large metropolitan areas, 45% in smaller urban areas and 29% in rural areas. Population growth, urbanisation, agricultural intensification and land use changes have led to an increase in the use of fertilisers, increased industrial emissions and inadequate treatment of sewage.[1]

HELCOM's 4th Periodic Assessment of the State of the Marine Environment of the Baltic Sea, 1994-1998 shows that there have been significant improvements in many aspects of the marine environment but continuing problems still occur. Water quality has generally improved in coastal areas over the last two decades although eutrophication is still a major problem and the sea water is generally less transparent than it was 50 years ago. Whilst concentrations of many hazardous substances, notably DDT, mercury and lead, have declined considerably leading to improvements in the health of birds of prey and mammals, levels of toxic PCBs and dioxins in the food chain remain stubbornly high, affecting seals in particular. Furthermore, cod, herring, salmon and eel fisheries are currently operating at unsustainable levels and other threats to fish stocks include the loss of spawning grounds in rivers, and excessive by-catches. Cod stocks are declining rapidly due to overexploitation and unfavourable environmental conditions for hatching. Illegal discharges of oil and other wastes from ships are a continuing

[1] Schernewski G & Schiewer U (2002) Status, Problems and Integrated management of Baltic Coast Ecosystems *in* Baltic Coastal Ecosystems Structure, Function and Coastal Zone Management. Schernewski G & Schiewer U Eds. Springer.

problem, despite HELCOM regulations obliging ships to dispose of wastes at port reception facilities.[2]

The Baltic Sea is nevertheless home to many species of plants, animals and micro-organisms in a great variety of different habitats. Conditions are naturally challenging since winters are harsh and salinity varies considerably both between different waters and over time. A total of 133 distinct marine and coastal habitat types have in fact been classified by HELCOM for conservation purposes.

The intensive, and increasing, anthropogenic pressure on the sensitive and vulnerable ecosystems and biodiversity of the Baltic Sea region means that Integrated Coastal Zone Management needs to be systematically implemented throughout the region. Areas within HELCOM which are in particularly urgent need of ICZM measures are BSPAs, Natura 2000 sites, bays, the whole of the eastern Gulf of Finland and metropolitan areas.[3]

II. ICZM in the Baltic Region

Although there is not one, agreed definition for Integrated Coastal Zone Management (ICZM)[4] it is generally acknowledged to be *a continuous process with the general aim of implementing sustainable use in coastal zones and maintaining their overall diversity*. To this end it aims, by more effective management, *to establish and maintain optimum, sustainable levels of use, development and activity in coastal zones and, eventually, to improve the state of the coastal environment.*

ICZM is recognised as the most effective tool for incorporating conservation and sustainable use of marine and coastal biodiversity aspects into the planning process. Therefore, ICZM should deal with all aspects of land and water use and good planning and management should be seen as a preventative, environmental control. Nonetheless, it is still a challenge to find the right balance between biodiversity conservation, the sustainable use of its components and development.

A recent assessment[5] of the Baltic Sea region has shown 24 ongoing ICZM projects, 9 ICZM-related projects and 28 completed projects, of which some were international in character. It concluded that although no Baltic State - as is the case in the rest of Europe - has specific legislation relating to ICZM, existing policies, authorities and instruments can be used to accommodate the implementation of ICZM within an individual country's national borders and, therefore, within the Baltic region as a whole. Therefore, although there is no specific legislation pertaining to ICZM in the Baltic region all countries are, without exception, engaged in ICZM work. This is not systematic within any country, let alone within the region, but it is clear that the lack of legislation need not hamper the development of ICZM in the region.

Within the four Baltic projects of the EU demonstration programme, the Gulf of Finland project recommended that integrated planning should be undertaken at the regional and local levels during the preliminary phase of ICZM. Although Storstrøm County (DK) did elaborate coastal planning at the local level, under the overall directive of a regional plan, it was built upon the elaboration of a strong public participation process within the regional planning process for all relevant stakeholders. However, in trying to apply a rigorous sustainability assessment to new

[2] 4th Periodic Assessment of the State of the Marine Environment of the Baltic Sea, 1994-1998. HELCOM. See http://www.helcom.fi/environment/4pa.html.
[3] Outcome of a joint Swedish Environmental Protection Agency – HELCOM Workshop on ICZM held in Stockholm 30 Sept – 1 Oct, 2002.
[4] Also known as Integrated Coastal Management (ICM), Integrated Coastal Area Management (ICAM), Integrated Coastal and Marine Area Management (ICMAM), Integrated Management of Coastal and Marine Areas (IMCMA) and recently Integrated Coastal Zone Development (ICZD).
[5] Pickaver A (Ed.) Integrated Coastal Zone Management in the Baltic States - State of the Art Report (2001) EUCC - The Coastal Union.

tourist developments, it ran into the problem of public misconception that conservation initiatives would necessarily curtail economic activities. Initial experience of public participation was also regarded as a particular difficulty in Latvia. All of these projects have ended with no follow-up.

Experience, therefore, suggests that most of the ICZM initiatives in the Baltic region are meeting significant constraints which relate to continued institutionally traditional ways of thinking, the prevalence of a sectoral approach towards management issues, a lack of involvement of all stakeholders and problems with full public participation. Therefore, the Third Meeting of the Nature Conservation and Coastal Management Group (HELCOM - Habitat) held in Gdynia, January 29th - February 1st, 2002, decided that a Common Approach for ICZM in the region should be developed. It should include a list of adherent principles and appropriate strategies and a possible draft HELCOM recommendation towards reaching that Approach for the nine HELCOM riparian states.[6]

HELCOM , in 1993, initiated ICZM plans for Coastal Lagoons and Wetlands in Latvia, Estonia, Lithuania/Russia, Russia/Poland and Poland/Germany. The programme was concerned with matters of sustainable use of the respective lagoon & wetland areas applying, for these purposes, ICZM principles and methodology[7]. The plans, based upon an ecosystem approach, however, have been criticised because they were dominated by nature protection considerations and all economic and human activities were discussed under this restriction and, although the management plans were quite comprehensive, they were not balanced.[8] However, it could be better argued that this is precisely the approach that should be taken in such sensitive areas. An evaluation of the programme, which was completed in 1999[9], covered technological, economic, institutional, cultural and ecological constraints whilst recognising significant lessons concerning eco-system-based planning had been learnt[10].

In 1996, VASAB recognised the need to elaborate common guidelines for spatial planning and management in the coastal zone in order to ensure and guide spatial development in the area.[11] It recommended, amongst other things, a 3km landwards planning strip and a protected zone outside urban areas both landwards and seawards of 100-300m.

The Approach taken in the Baltic will need to consider the differences between the EU States, with a strong tradition of legal and administrative systems and public participation, and the non-EU States where these aspects are not so institutionalised.

The main challenge for HELCOM is to take the implementation of the current individual ICZM projects in each of the member States to a systematic Common Approach at an international level within the framework of the EU Strategy.

To help achieve this, the experience gained from the two main European integrated coastal management initiatives have been considered for the development of specific principles for the Baltic region. These are the EU ICZM demonstration programme and strategy and the Coastal Area Management Programme in the Mediterranean Sea although other relevant ICZM experience is also taken into account. It is intended that these principles will be augmented by a specific HELCOM recommendation on ICZM.

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[6] Minutes of the 3rd HELCOM Habitat Meeting, 2002.
[7] HELCOM [Nature/CZM] 8 1/1.
[8] Platz H (2001) VASAB seminar on ICZD in the Baltic Region, Palanga, Lithuania. VASAB, Poland.
[9] HELCOM [Nature/CZM] 1/2000 8 1/2 (2000).
[10] The Vilnius round-table on management of trans-boundary waters (1999). Vilnius, Lithuania.
[11] VASAB (1996) Common Recommendation for Spatial Planning of the Coastal Zone in the Baltic Sea Region. www.vasab.org.pl/public/common.html.

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III. The EU ICZM Demonstration programme & EC Strategy

The EC Demonstration programme was launched in 1996 as a joint programme of the DG's Environment, Regional Development and Fisheries[12]. The main aims were to test co-operation models for integrated management of the coastal zones and to provide the technical results necessary to foster dialogue between the European Institutions and coastal stakeholders. It aimed to lead to a proposal for a European strategy for ICZM and the programme included 35 demonstration projects, although only four were in the Baltic Sea region. These were (a) coastal planning on the Gulf of Finland, (b) the Latvia Coast, (c) the Lithuanian Coast and (d) Storstrøm (DK).

These projects were not funded directly from the Demonstration programme but made use of existing programmes and, in some cases, national funding. Projects were selected to represent key factors believed to influence the success of ICZM and included a full range of physical, social, socio-economic and cultural conditions.

While each individual project has had specific goals related to its local needs and requirements of the funding instrument, all of the projects also incorporated similar tasks. Six Thematic Analyses were carried out during the programme on those factors believed to drive ICZM. These were legislation, information, EU policy, territorial and sectoral cooperation, technical solutions and participation. The analyses were intended to lead towards operational conclusions and guidance for activities at the local, regional, national and/or EU levels[13].

The general, major conclusions of the programme[14] which are equally applicable to the Baltic region were that:-

- management of the coast lacks vision and is based on a very limited understanding of coastal processes and dynamics with scientific research and data collection being isolated from end-users,
- ICZM is a process which should have a strategic dimension,
- there has been an inadequate involvement of the stakeholders in formulating and implementing solutions to coastal problems,
- inappropriate and uncoordinated sectoral legislation and policy have often worked against the long-term interests of sustainable management of coastal zones,
- rigid bureaucratic systems and the lack of co-ordination between relevant administrative bodies have limited local creativity and adaptability,
- local initiatives in sustainable coastal management have lacked adequate resources and political support from higher administrative levels,
- ICZM should be issue driven,
- legal definitions of the coastal zone should be flexible enough to reflect the complex dynamic nature of the coast,
- harmonisation between policies and regulatory systems is essential, and
- building up public support is also indispensable.

The conclusions of the Demonstration programme[15] have led to the formulation of an EC Strategy and Recommendation[16] for ICZM which consists of a series of concrete actions

[12] Demonstration Programme on Integrated Management of Coastal Zones (1996) European Commission; document XI/102/96.
[13] Lessons from the European Commission's Demonstration Programme on Integrated Coastal Zone Management (ICZM) (1999) Publ. Office for Official Communications of the EC.
[14] Communication from the Commission to the Council and the European Parliament on Integrated Coastal Zone Management: A Strategy for Europe (2000). COM (2000) 547 final.
[15] Towards a European Integrated Coastal Zone Management (ICZM) Strategy: General Principles and Policy Options (1999) Publ. Office for Official Communications of the EC.
[16] Council Recommendation of the European Parliament and of the Council of 30 May, 2002 concerning the implementation of Integrated Coastal Zone Management in Europe (2002). Document L 148/24 Official Journal of the European Communities 6.6.2002.

building upon the existing instruments, programmes and resources rather than requiring new ones[17]. It aims to improve their use through better coordination and through ensuring that they are appropriate for coastal zones. This Strategy must be treated as a flexible, evolving instrument, designed to cope with the specific needs of different regions and conditions.

IV. Conclusions of the EU programme and strategy acting as a pointer for the Baltic

The Recommendation states that Member States should commit to a Common Vision for the future of their coastal zones and lays down a series of broad Principles which should be adopted. However, the strategy does not deal specifically with conservation issues although the recent La Vila Joiosa Forum[18] recommended that states ''make advances towards achieving an integrated and ecosystem approach of the coast considering …. relevant aspects such as biodiversity …". Nor does it deal with the question of the marine environment and how far it should be involved in ICZM planning.

There has been little direct follow-up on the ground within the 35 demonstration projects. Once the funding period was over, the projects largely ended. The recent meeting in La Vila Joiosa recommended the projects be continued.

V. The EU Water Framework Directive

This piece of legislation[19] was passed in 2000 with the purpose of establishing a framework for the protection of inland surface waters, transition waters, coastal waters and groundwater. It basically lays down that water management shall be done by member states through river basins within river basin districts. It is noteworthy that coastal waters[20] have to be included within the river basin. Quite recently, this concept of river basin management[21] is being included with ICZM to provide the key to the integrated development of the natural, economic and cultural environment within river basins and coastal areas. Furthermore, in recognition of the diminishing biodiversity in the coastal regions, the definition is increasingly incorporating such terms as ''the precautionary principle''[22] on which to base planning.

VI. ICZM initiatives in the Mediterranean

The Coastal Area Management programme (CAMP) of the Mediterranean Action Plan (MAP)[23] was initiated in 1989 and was the first systematic approach to ICZM in Europe. The main goals of CAMPs are to introduce or develop the process of integrated planning and management of Mediterranean coastal zones and to contribute to both sustainable use and environmental protection. The programme aims to exercise a catalytic role particularly related to galvanising

[17] See Ref. 14.
[18] 1st European ICZM High Level Forum on Community Strategies for Integrated Coastal Zone Management (2002) La Vila Joiosa (Alicante, Spain).
[19] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community Action in the field of Water Policy. Official Journal L 327, 22/12/2000 pp 1-73.
[20] Defined as the surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.
[21] Known as Integrated Coastal Area and River Basin Management (ICARM).
[22] Coastal Zone Management – with focus on coastal sector co-ordination and Integrated Coastal Area Planning and Management (2001) HELCOM Habitat 2/2001 7/2.
[23] Developed by the United Nations Environmental Programme (UNEP).

interest of all the stakeholders, transferring international knowledge and technologies, procuring support in expertise and training, introducing applicable methodologies, assisting authorities in solving environmental problems in coastal areas and extrapolating problems and solutions in a wider arena. Both training and capacity building are considered essential components and are present in almost all project activities. This is particularly relevant for institutional strengthening and enabling the implementation of projects using methodologies and tools not previously applied in a country.

A CAMP project contains the following elements: implementation of legal instruments, resource evaluation, protection and management (of water, soil, forests, coastline, marine ecosystems and protected areas), development activities (evaluation and trends of industry, tourism, agriculture, transport, trade, etc.), natural hazards and phenomena (implications of climate change), planning and management tools (e.g. GIS, EIA), development – environment scenarios, and integrated planning and management[24]. They also include both individual activities which have to be integrated and a limited number of sectoral or multi-sectoral activities. Examples of individual activities include data management and GIS, systematic sustainability analysis, the co-ordination and integration of project results and biodiversity. Of these individual activities, some are considered mandatory whilst others, which are not mandatory, are called project specific and are defined according to the particular needs and priorities defined.[25]

VII. Conclusions of the Mediterranean programme acting as a pointer for the Baltic

The main constraint of the CAMP approach, despite over twelve years of ICZM experience in the region, is that the basic question of whether it is necessary to develop a shared, long-term strategic vision for coastal management is still being asked. Recently, a white paper has been published by MAP[26] in which this key question has again been put.

Another weakness[27] is that biodiversity issues are not mandatory within the CAMP projects and several have been carried out without reference to conservation of biodiversity. Furthermore, it was considered that there were too many activities and insufficient involvement of the stakeholders. Significantly, in most cases, the financial self-sufficiency of the projects and their ability to continue after the programme ended were defined as 'not bright'. As with the EU programme, there has been little direct follow-up of the projects. These limitations are not surprising in the light of a programme which lacks an overall common approach to the implementation of ICZM.

VIII. Global Initiatives relevant to the Baltic situation

Only three countries have passed specific national legislation relating to ICZM *viz*. the USA (1972), Sri Lanka (1981) and New Zealand (1991). In all three countries, the law provided the necessary authority and framework for more detailed plans and regulatory programmes to be developed either nationally (Sri Lanka) or regionally (USA, New Zealand)[28].

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[24] Pavasovic A (2000) MAP Experience in Integrated Coastal Management Projects. Report from a workshop "Towards a demonstration programme for ICZM in Central and Eastern Europe and the New Independent States, Split, Croatia.

[25] Jeftic L (1995) Coastal Areas Management Programme of the Mediterranean Action Plan of UNEP in Coastal Management and Habitat Conservation Eds. Salman A,.H.P.M, Berends H & Bonazountas M.

[26] MAP (2001) White paper: Coastal Zone Management in the Mediterranean.

[27] METAP-MAP (1997) Assessment of integrated coastal area management initiatives in the Mediterranean (1988-96) (undated). Mediterranean Environmental Technical Assistance Programme, Washington DC.

[28] Zeitlin-Hale L, Meltzer E & Ngoile M (1998) Application of International experience to formulation of a national policy for coastal management in the United Republic of Tanzania US Agency for International Development.

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The US Coastal Zone Management Act of 1972 elaborates the basic objectives of ICZM and requires each State to devise management programmes although each State is free to choose its own methods. A number of different systems have therefore evolved since it was not necessary for the States to evolve identical systems provided they operated harmoniously and effectively for the benefit of the coastal zone as a whole. Despite this autonomy and individual responsibility, federal support for the States is subject to a federal evaluation. In this way, the federal government has been the key catalyst in providing incentives to the States for both planning and implementation.[29]

Other countries without specific legislation have, nonetheless, extensive ICZM programmes and experience. In the Philippines, community-based management has tied fishing activities to coastal resources management: this is a practice that is desirable but seldom employed in most countries. This was done as a response to a deteriorating environment due to poor fishing practices This recognition resulted in local governments being granted jurisdiction over 15km seawards of the low water mark.[30]

In Equador, a careful legal review revealed that whilst existing laws were not ideal, they did provide sufficient authority to achieve the objectives of a National ICZM programme. In Australia, a non-regulatory approach has been taken emphasising supportive and facilitative programmes aimed at building productive inter-governmental relationships, strategic planning and coastal care incentives for good management with appropriate technical support.[31]

IX. A HELCOM Recommendation on Integrated Coastal Zone Management

In parallel with the development of a set of Common Principles to underpin ICZM implementation in the Baltic region, it was decided[32] that a Recommendation on ICZM should also be drafted for adoption. This document was presented to the fourth meeting of HELCOM Habitat on 11th February in Berlin.[33] It calls for the nine riparian states to each develop a national strategy as defined by the EC Recommendation. However, whilst embracing all of the actions of the EC recommendation, the HELCOM document goes further in its demands. In particular, it recommends that the implementation of IVZM should follow the ecosystem approach thereby incorporating the advice of the La Vila Joiosa Forum. It further defines the coastal zone to which ICZM should be applied "as a zone following the Baltic Sea coastline, extending from the mainland coast to the adjacent offshore areas. This zone thus covers Baltic Sea waters, the underlying seabed and coastal terrestrial areas including the abiotic resources as well as the biota. This zone extends as far into the mainland and as far offshore as it, in each case, is relevant for the sustainability of marine and coastal biodiversity and geological and geo-morphological diversity." Furthermore, and what is most important, "this zone may reach out as far as the outer borders of the Exclusive Economic Zone (EEZ) if these offshore areas are used, or intended to be used, in a way that conflict, or may conflict, with the aims of Atricle 3 of the Helsinki Convention. In other cases, or when no national EEZ exists, then the coastal zone reaches out to the outer borders of the national territorial waters (12nm)." This document will be presented to a future Commission meeting for adoption. If approved, it will be an important and significant step forward in coastal management and will have important ramifications in other regional seas where ICZM is high on the agenda e.g. The Black Sea Environmental Programme.

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[29] idem.
[30] idem.
[31] idem.
[32] see Ref. 6
[33] HELCOM Habitat 4/2003 3.2/1/Rev.1. HELCOM Recommendation on Integrated Coastal Zone Management.

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X. Principles applicable to the Baltic Sea

The EU has called for a very broad set of principles to be adopted concerning good coastal management.[34] These are:-

- a broad holistic perspective,
- a long term perspective taking the precautionary principle into account,
- adaptive management,
- local specificity,
- working with natural processes,
- participatory planning,
- support and involvement of all relevant administrative bodies, and
- use of a combination of instruments.

However, whilst setting the framework within which ICZM should be conducted, more specific coast and marine related principles are needed ''to preserve and protect the productivity and biological diversity of coastal ecosystems, mainly through prevention of habitat destruction, pollution and overexploitation'' as well as ''to promote rational development and sustainable utilisation of coastal resources''.[35]

Therefore, when considering the implementation of ICZM, the following underlying principles[36] should be used in the Baltic Region to govern all spatial planning decisions:-

1. **Biodiversity must be conserved, and environmental damage prevented, as a prime consideration in coastal development.**

Conservation of Biodiversity is considered to be of such importance as a result of the Rio Conference that the Convention on Biological Diversity (CBD) has been accepted and ratified by all HELCOM states. Its goal is to globally conserve biodiversity.

The EU demonstration programme never set out to incorporate biodiversity issues into the demonstration projects. Nonetheless, an integrated spatial planning approach was incorporated into the programme which considered, amongst other things, biodiversity[37]. However, the tasks of the programme were described in terms of the total environment. Those tasks were, *i.a.*, to describe the state of the environment – fauna, flora, habitats, landscapes - and environmental management infrastructures and to analyse the origin of the current environmental problems and the effect of the environmental measures in force and planned[38]. This has not, unfortunately, been carried through to the resulting EC ICZM Strategy which is to be used to promote and implement ICZM in the EU. There is only direct reference to the Biodiversity Convention in the Preface in which it is noted that the Strategy is making an EU contribution towards the implementation of the CBD. In fact, in the Strategy, the EC calls to make EU policies compatible with ICZM although neither the CBD, in particular, nor biodiversity, in general, is mentioned in this respect. Species and habitat protection are mentioned only in the context of carrying out a national stocktaking of a number of sectors ''to include (but are not limited to) fisheries, transport, energy, resource management, species and habitat protection, employment, regional development, tourism and recreation, industry and mining, waste management, agriculture and education.'' This will not be sufficient for long term conservation measures.

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[34] see Ref. 13.
[35] The World Bank. The Noordwijk Guidelines for Integrated Coastal Zone Management (1993). Washington.
[36] See also Clark J R (1992) Integrated management of coastal zones. FAO Fisheries Technical Paper No. 327.
[37] Better Management of Coastal Resources: A European Programme for Integrated Coastal Zone Management (1997) Publ. Office for Official Communications of the EC.
[38] Communication from the Commission to the Council and European Parliament on the integrated management of coastal zones (1995) COM (95) 511 final.

Equally, the CBD is quite explicit in its language with respect to ICZM and has even developed the Jakarta mandate as a means of specifically addressing ICZM, the issue has not been so overtly transferred to the major European policy documents. A recent paper[39] has concluded that integrated coastal management is invariably taken up in the various biodiversity policy instruments and biodiversity is customarily an integral part of ICZM. Nonetheless, whilst each acknowledges the other in their text, there is no real, direct integration of ideas. The question, therefore, remains whether the links between biodiversity and ICZM policy are sufficiently direct and clear enough to be taken into account by those government departments working in the two areas. Therefore, the integration of CBD principles into ICZM projects and programmes can neither be guaranteed nor taken for granted.

Although the adoption of this principle would be breaking new ground with respect to ICZM, it is clearly in line with EU thinking with respect to the CBD. Furthermore, it is a concept which is already within the language of HELCOM and is reflected in the recent draft HELCOM recommendation on ICZM .

2. ICZM must be based on an understanding of coastal and marine ecological processes and dynamics and the ecosystem approach should be used when planning ICZM.

"Ecosystem management" is a new phrase being heard more and more often with respect to resource management and planning issues. Ecosystems are interconnected communities of living things, including humans, and the physical environment within which they interact. Healthy and well-functioning ecosystems are vital to the protection of our diverse biological resources, and to sustaining our economies and communities that rely on their products. Ecosystem management recognizes the interrelationship between the natural environment and healthy, sustainable economies, and emphasizes the integration of planning for the protection and preservation of both. One of the EU's Recommendations calls for ICZM to 'work with natural processes'.

The ecosystem approach is characterized as a method for sustaining or restoring natural systems and their functions and values. It is goal driven, and is based on a collaboratively developed vision of desired future conditions that integrates ecological, economic, and social factors. It is applied within a geographic framework defined primarily by ecological boundaries. Traditional resource management tends to be site specific, with little consideration of how a proposed action fits into the context of the broader ecosystem or landscape. Under the ecosystem approach, the frame of reference and management objectives are much broader. Although site-specific actions are still necessary, they would be developed and conducted within a broader ecosystem context, and evaluated over a longer time span. This approach is already being espoused within HELCOM and is a fundamental aspect of the recent draft HELCOM recommendation on ICZM.

3. ICZM should include the Exclusive Economic Zone.

The question of the inclusion of the marine environment, beyond any area defined within national legislation has never been considered within the remit of ICZM. Emphasis has been almost exclusively on the terrestrial part of the coastal zone, logical given the pressures from land development. Most marine issues have dealt largely with pollution incidents and to the viability of economic activities (i.e. tourism and recreation). However, recent trends towards river basin management and the ecosystem approach are calling into question the omission of the marine side of the coast. Whilst there is a tradition of land use planning in the Baltic States, sea use management is a more complex issue as rights and duties in the open sea are

[39] Pickaver (A) (2002) Integrated Coastal Management and Biodiversity in Europe EUCC - The Coastal Union.

not well defined. However, this should not prevent the management *process* used in the marine area to be different from that on land issues.

At the moment, marine areas are not considered at all within the definition of the coastal zone in Estonia, Germany, Lithuania and Poland. In Denmark, Finland, Latvia, Russia and Sweden a strip of 100 - 1000 m is included. Nonetheless, there are precedents for including marine areas in ICZM.

The EU Recommendation[40], thus, recognises the importance of the marine environment since it states that National Strategies should be developed or maintained and, where appropriate, regional or local legislation or policies and programmes formulated which address both the marine and terrestrial areas of coastal zones together. The MAP has also recently[41] recognised the need ''to adopt a more integrated, in spatial terms, approach which will be explicitly based on the identification of the interdependencies and continuities of ecological processes while indicating in a more concrete manner that way that these could be incorporated in coastal area management.'' Neither the EU Recommendation nor MAP, however, specifies the extent of the sea-side boundary.

However, in the EU demonstration project in the Cyclades (GR) and the CAMP project in Malta, the entire island groups, *including the marine areas between them*, were considered as the coastal zone. Further, in Strymonikos (also an EU demonstration project), *the coastal zone includes the marine area which extends to a depth of 50m*. In the Baltic region, an ICZM project is being conducted in the west-Estonian Archipelago in Estonia. This area is represented by coastal and island environments and encompasses the four biggest Estonian islands: Saaremaa, Hiiumaa, Muhu and Vormsi together with all the small islands, islets *and the coastal sea in-between*.[42] As mentioned above, the Philippines grants local governments jurisdiction *over 15km seaward of the low water mark*.

Furthermore, the Alliance of Maritime Regional Interests in Europe (AMRIE) have called[43] for the EC ICZM Strategy to extend to a distance of 20 km on the seaward side (equivalent to the 12 mile limit). AMRIE argues for a combined sea-space and land-side development and management within a coordinated ICZM approach.

HELCOM has acknowledged the need for including marine areas into a definition of the coastal zone with respect to ICZM in their recent recommendation on ICZM: "this zone may reach out as far as the outer borders of the Exclusive Economic Zone (EEZ) if these offshore areas are used, or intended to be used, in a way that conflict, or may conflict, with the aims of Atricle 3 of the Helsinki Convention. In other cases, or when no national EEZ exists, then the coastal zone reaches out to the outer borders of the national territorial waters (12nm)."

4. ICZM should be linked to, and co-ordinated with, freshwater and land planning and management.

In line with the EU Water Framework Directive, links should be made, where appropriate, between ICZM managers and the relevant freshwater resource managers. The overall objective of such a partnership is to promote more efficient methods to enhance protection of the productivity and biodiversity of freshwater and coastal ecosystems. In order to do so, it is necessary to raise the awareness of the need for co-ordination on the political agenda of national governments and those bodies responsible for water management. The need to co-

[40] See ref. 13.
[41] Good Practices Guidelines for Integrated Coastal Area Management in the Mediterranean (2001). UNEP/MAP/PAP.
[42] Kokovkin T Safeguarding biodiversity through sound rural development and market mechanisms: experience from the Väinameri project in Estonia (undated).
[43] AMRIE position paper on integrated coastal zone management (undated).

ordinate ICZM with river basin management was recognised by the recent SEPA/HELCOM workshop.[44]

5. Sustainable use is a prerequisite for ICZM.

Sustainable development was first coined in 1980 by IUCN in their publication ''World Conservation Strategy'' although it was not accepted widely until the endorsement by the Rio Conference in 1992. Sustainable development implies, within a socio-economic context, that an improvement in the quality of living, beyond simple economic growth, will take future needs, a concern for the environment and equity into consideration. Since that time sustainable use has been considered more descriptive of this definition.This means that care should be taken of the long-term consequences of present human activities as well as conservation of environmental quality whilst providing for the needs of all social strata.

Due to the complexity, sensitivity and limitations of natural systems and the value of natural resources, coastal zones fall under those environmental domains in which it is particularly important that the concept of sustainable use is applied. Accordingly, the basic principles of this concept must be reflected in the practice of ICZM. This is largely the case in the definitions which already govern ICZM.

6. Cultural heritage must be preserved.

Coastal cultures are diverse and, often, unique and remaining traditions can often be threatened by coastal development. Inhabitants of coastal settlements have derived their livelihood from many and varied occupations such as small-scale agriculture and fishing which are now vanishing. Development perspectives are needed for such declining areas and sparsely populated regions which have left many northern parts of the Baltic Sea de-populated and in need of development.

The issue is to preserve those characteristics of cultural heritage such as under-water building structures from ancient times, ship wrecks and other important features of traditional livelihoods such as fishing and shipyards etc. However, it is not intended to preserve environmentally damaging management practices from whichever traditional livelihood is concerned.

7. All levels of government within a country must be involved in coastal management and planning and there should be trans-national co-operation in coastal border projects.

Economic strategies and legislation are generally defined and implemented at a national level in nation States. However, environmental degradation and, therefore, its remedial sustainability generally occur locally. Coastal ecosystems often go beyond local, provincial and even national areas of authority. Therefore, attention must be paid to vertical integration between spheres of government[45]. The so-called ''bottom-up'' approach will only enable change at the local government level if it is augmented by a ''top-down'' approach. Both sides of this two-track system must be reconciled and complementary to succeed in creating and sustaining a dialogue which will promote a sense of shared purpose at all levels.

The EU Recommendation states that ICZM should be based on support and involvement of

[44] See Ref. 3.
[45] Department of Environmental Affairs and Tourism. (1998) Coastal Policy Green Paper - Towards Sustainable Coastal Development in South Africa. Coastal Management Policy Programme, South Africa.

relevant administrative bodies at national, regional and local level between which appropriate links should be established or maintained with the aim of improved co-ordination of the various existing policies. Furthermore, that partnership with, and between, regional and local authorities should apply when appropriate[46]. The La Vila Joiosa conference[47] also recommended that ICZM be promoted on a local scale in the conviction that local government bodies must play an essential role in successful ICZM. However, local planning needs to be integrated with the regional and national levels so as to apply a holistic and dynamic perspective.

It is equally important that when any ICZM projects are being considered in border areas, that the governments of both/all countries communicate and co-operate.

8. Public participation, including relevant stakeholder involvement, must be an inherent part of coastal management programmes.

Public participation is considered as referring to the involvement and collaboration of the private sector, NGOs, citizen groups and other non-institutional organisations or individuals interested in, or affected by, the management of the coast. Insufficient participation and consultation of these relevant actors is often the reason for inadequate coastal management as well as degradation of the coastal environment. Participation is often conceived in different ways ranging from the involvement of all parties concerned to a more limited concept involving only partial public involvement *e.g*. NGOs.

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The EU Strategy specifically mentions participatory planning as one of its broad, underpinning principles. Participation is particularly pertinent in the Baltic region as a number of States do not have a long history of implementing this approach. The Recommendation states that ICZM should be based on involving all the parties concerned (economic and social partners, the organisations representing coastal zone residents, NGOs and the business sector) in the management process, for example, by means of agreements and based on shared responsibility.[48] It adds that National Strategies, particularly, should identify measures to promote bottom-up initiatives and public participation in ICZM.

Furthermore, the following instruments should always be considered when implementing ICZM as an incentive for good management practice:-

9. The use of economic instruments.

Economic instruments need to be used in conjunction with regulations to supplement them in areas where economic efficiency is important, where regulations have failed and/or where funds need to be raised to implement policy. The use of such instruments is part of the Principles laid down by the EU. There are a variety of instruments that can be considered e.g.

- Polluter pays principle

The Polluter-Pays Principle constitutes a fundamental principle for allocating costs of pollution prevention and control measures introduced by the public authorities in Member countries. It takes account of particular problems and means that the Polluter should bear the expenses of carrying out measures to

[46] See ref. 13.
[47] See ref. 16.
[48] See ref. 13.

ensure that the environment is in an acceptable state. The cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption.

- The compensation principle

This should be applied in those areas of development where there is unavoidable loss of biodiversity.

- Best Available Technology

HELCOM already endorses the fact that best available technology should be used in all future industrial facilities.

Others include charges to supplement pollution control regulations, development taxes in land-use management, subsidies and resource pricing.

10. The precautionary principle.

The precautionary principle has been defined as "when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically". It includes taking action in the face of uncertainty; shifting burdens of proof to those who create risks; analysis of alternatives to potentially harmful activities; and participatory decision-making methods.

Article 15 of the Rio Declaration[49] states that in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. The EU Recommendation also states that ICZM should be based on a long-term perspective taking into account the precautionary principle.[50]

The precautionary principle has now become a critical aspect of environmental agreements throughout the world because it offers the public and decision-makers a forceful, common-sense approach to environmental and public health problems. This principle is already being espoused within HELCOM.[51]

11. Adaptive management

Adaptive management is one of the principles put forward by the EU in the ICZM Recommendation. It is generally regarded as a systematic process for continuously improving management policies and practices by learning from the outcomes of operational programmes. Its most effective form – "active" adaptive management – employs management programmes that are designed to experimentally compare selected policies or practices, by evaluating alternative hypotheses about the system being managed. It is essentially "learning by doing" and involves six steps: assessing the problem, designing a solution, implementing, monitoring, evaluating, adjusting and then re-assessing *in perpetuity*.[52] Since ICZM is itself an on-going process which continuously evaluates progress, adaptive management is a logical component.

12. Environmental Impact Assessment (EIA)

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[49] The Rio declaration on environment and development (1992).

[50] See ref. 13.

[51] Coastal Zone Management – with focus on coastal sector co-ordination and Integrated Coastal Area Planning and Management (2001) HELCOM Habitat 2/2001 7/2.

[52] Walters, C. 1997. Challenges in adaptive management of riparian and coastal ecosystems. Conservation Ecology 1(2):1.

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This is a process that is used to prevent environmental degradation by predicting and evaluating the effects of an action or series of actions on the environment. The conclusions are then used as a tool in planning and decision-making. However, it needs to be conducted within a broader knowledge of surrounding ecological processes and data and not just by itself. EIA essentially gives planners and decision-makers better information about the consequences which development actions could have on the environment. However, in order to ensure that decisions give an environmentally favourable result, other information pertaining to the environment as well as additional policies or laws are needed.

EIAs are already used within HELCOM although they are not used for the fishing industry, a sector which particularly needs to be integrated with environmental and nature conservancy issues. The recent SEPA/HELCOM workshop further recommended that Strategic Impact Assessments *i.e*. cumulative effects on larger areas, should be used in the spatial planning process[53].

In order to implement ICZM adequately according to these principles and instruments, it is necessary that:-

13. **Data and information concerning ICZM should be systematically collected, and used by the appropriate stakeholders.**

Data and information are elements to build up trust between the different stakeholders and are essential for effective planning in and management of marine areas. In order to keep the general public and decision-makers informed and involved from the beginning it is important that the relevant information and data should be translated into information that is understandable to and to public.

A central ICZM data collection and storage facility should be developed because:-

- It is likely that there is already relevant information stored, but not readily available, in public and private institutions,
- Data gaps have to be defined,
- In general, coastal and open sea marine data is sparse and patchy,
- Data quality is varying because sampling frequency can distort the information, therefore temporal and long-term data sets are required.

Habitat mapping, in particular, is an area to be addressed and evaluated for data availability. The data types needed are *i.a*. physical, biological, social/economic, managerial, legal, administrative etc. GIS is considered to be a very useful analytical tool to convert data into information.

XI. Concluding remarks

It is evident that the Baltic coastal areas face social, economic and environmental problems that demand particular attention. In this context, ICZM has been recognised as a coherent framework in which to manage coastal areas effectively. There is, however, no unique way to implement ICZM which varies reflecting the diversity of geographic conditions and environmental problems of coastal areas as well as the complexity of institutional set-ups. Therefore, it is not necessary for states to develop specific ICZM legislation because existing instruments can be effectively used. What may be required is a new mechanism to bring the different sectors to the co-ordination and negotiation tables.

Although the EU has adopted a Recommendation concerning ICZM implementation, the underpinning principles are very broad and, at best, provide only a framework. Alone, they will not prevent the further degradation of coastal habitats and biodiversity. Consequently,

[53] See Ref. 3.

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HELCOM needs to develop a separate Recommendation on ICZM pertinent for the Baltic area. A draft has already been formulated which will embrace the content of the EC Recommendation but include additional parts or actions e.g. specific, underpinning reference to the ecosystem approach and inclusion of off-shore marine areas when implementing ICZM. This document calls for the nine riparian states to develop national ICZM strategies.

However, in order for these strategies to be fully effective, it is important that there be full agreement on the principles which underpin ICZM. A Common Approach in the region will only be accomplished by the adoption of a set of specific principles which augment those of the EC and which are adopted alongside them. These Principles need to take into account the special nature of the Sea and its high vulnerability to rapid, human-induced change. Following the acceptance of a set of supporting Principles for the Baltic, together with a Recommendation, the next step will be the development of a Strategy for implementation of ICZM in the region.