MUNICIPAL COASTAL GOVERNANCE IN LATVIA: NON-STATUTORY INSTRUMENTS FOR COLLABORATIVE GOVERNANCE DEVELOPMENT

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ABSTRACT

The article summarizes results from the research and development (R&D) project aimed at the detailed ecological–social–economic (ESE) system based and stakeholders co-guided coastal studies for the methodological instrumentation improvements of the coastal governance practice, being realized by System Approach Framework (SAF) method application. The study was done in the Latvian coastal municipal context, characterized by the lengthy and sparsely populated coastal areas governed by small municipalities with limited institutional and other capacities, lacking coastal knowledge and adequate governance instruments for sustainable integrated coastal management (ICM). Earlier studies show that the majority of coastal municipalities in Latvia face similar challenges. Thus, a generic problem addressed by this study was the lack of the vital coastal governance capacity at local level. The study applied the case study research methodology, which permits complex analysis of the coastal system governance. Complementary to the desk analysis of governance policies, interviews/survey of coastal inhabitants and coastal observations, and use of other social research methods were combined with stakeholder involvement. The study done for a pilot case of Salacgriva municipality demonstrates possibility and instrumental background for establishment of the interface between SAF methodology and coastal municipal development planning approach and practice in Latvia as well as the necessary coastal governance process design and development steps. Building on the basic preconditions for the successful ICM – participation and science-policy interface – a set of innovative non-statutory ICM instruments was designed. Coastal indicators system (IS) was used as a special type of modelling that is understandable by the coastal stakeholders compared to other modelling tools. Other elaborated innovative instruments include multi-thematic municipal coastal monitoring system together with ESE based indicator system; a structure and content of the Coastal Governance Survey and their applications for the coastal thematic planning. All these complementary outcomes provide background for ICM integration in the municipal planning system.

Keywords: coastal indicator system, collaborative governance, governance instruments, stakeholder participation, science-policy interface, system dynamic model, System Approach Framework.

1 INTRODUCTION

Systems Approach Framework (SAF) provides multidisciplinary and trans-disciplinary advice to environmental managers and policymakers concerning environmental problems in the coastal zone, in order to improve coastal sustainability [1]. Accordingly, the SAF shall serve as the tool to translate scientific knowledge and data to policy decisions, in such a way which ensures that knowledge is transferred fully and understandable by stakeholders and practically applicable for decision-making at local level [2]. The SAF contributes to endeavours to elaborate systemic and integrative approaches for coastal sustainability, particularly, integrated coastal management (ICM) [3]–[5].

The general goal of the research and development (R&D) case study was to develop a SAF based coastal governance research application suitable for coastal governance situations in small municipalities of Latvia, and, based on findings – to elaborate policy recommendations and instruments for improved ICM. The goal was supported by several complementary tasks:

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- To apply and demonstrate the transition from separate isolated disciplinary issue orientated research to a comprehensive multi-disciplinary and multi-stakeholder R&D framework for coastal governance process studies and stakeholder participation.
- To establish an interface between SAF methodology and coastal development planning methodology including supervision of designed development documents, i.e. the application of coastal information systems (coastal indicator system, in particular) developed in accordance with SAF methodology.
- To create a set of instruments that could be used to attain better understanding of the coastal system and its governance, while collaborating with stakeholders and among themselves for implementation of coastal activities. Important prerequisite is costal governance efficiency and self-sufficiency, which means low costs and use of available capacities, primarily those of municipal specialists and local stakeholders.
- To identify elements and demonstrate synergy between science research and applications of citizen science for purposes of both, better coastal science and governance in general.

Testing and adaptation of the general SAF methodology for application in the municipal governance sector was based on systemic understanding of the coastal territory as a unified governance territory, where interests of different governance levels interfere. In partnership with local stakeholders, through studying the current state of the coastal ecological–social–economic (ESE) system, and, the state of the governance as its sub-system, the objective of the research was to structure governance processes to identify typical governance approaches (models) and instruments, seeking for synergies between those models and instruments and look for their complementarity opportunities.

2 METHODS AND MATERIAL

The selected case study pilot site – Salacgriva municipality (Latvia) – is located on a 5 to 15 km wide strip of the Baltic Sea coast (the Gulf of Riga) stretching for 55 km, it occupies 638 sq. km with population of 9,000 inhabitants. The municipality is characterized by advanced environmental governance and participatory experience as compared to other municipalities in Latvia. At the same time, there is concern that limited progress in coastal activities may lead to the degradation of the coastal resources and hamper their sustainable use for common benefit. Based on information from desk studies, literature and local stakeholders survey, it was concluded that the success of coastal governance is limited by typical generic problems, namely, limited capacity (human, administrative, financial etc. resources) and a critical lack of reliable and update coastal information, what affects local coastal decision-making.

Steps-wise structured SAF methodology was the main backbone to be applied and studied in detail (Fig. 1). The SAF step of issue identification included: (1) coastal problems and their links to human activities; (2) relationships with ecosystem services; (3) DPSIR and CATWOE tools based analysis of coastal territory; (4) identification and involvement of stakeholders; (5) institutional mapping; and (6) identification of principal ecological–social–economic (ESE) components relevant for assessment of the state of coast.

During the step of system design, the relevant coastal area geographical boundaries and boundaries for coastal data areas have been defined. Descriptions of elements, material flows, and external hazards within the coastal ESE subsystems, including governance subsystem was done. A system dynamic model (SDM) has been developed, followed by its translation into STELLA language [6].

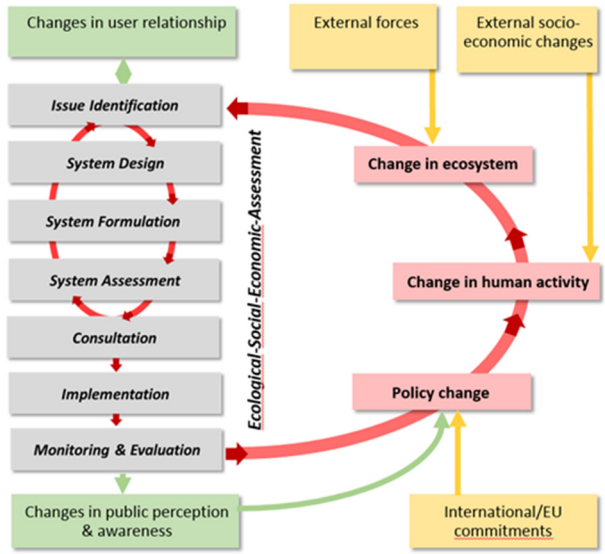

Figure 1: SAF steps. *(Source: BaltCoast project, www.baltcoast.eu.)*

The SDM analysis completed our understanding on the ongoing natural (ecological) and socio-economic processes in the typical coastal areas and their interaction, and lead to understanding the necessary framework for the science policy (decision-making) interface. It brought to the optimal number of parameters (necessary and sufficient) to characterise the state of the coast. Crucially, the indicator system is both – an information flow system and a modelling tool, which is assumed to be understood by the stakeholders, because the trends in indicator values make it possible to project future coastal scenarios [7].

Implementation of system formulation and appraisal steps focused on transition from the research stage (SDM stage) to the governance stage – a practical improvement of the coastal governance by proposing CIS approach. The transition was based on the following principles:

- Evaluating the dynamism of SDM parameters and including additional parameters with sufficient dynamics in the CIS;
- Evaluating regular, reliable data applicable to the coastal area, based on public data or applying other direct methods for obtaining data, including elements of citizen science;
- Including indicators which provide the link to the key municipal planning documents in short-, medium- and long-term perspective: sustainable development (SD) strategy, development programme, and investment plan;
- Evaluating the necessity for additional indicators to characterise the coastal SES in a more detailed manner, based on SD capitals approach.

Implementation and monitoring steps focused on development of the CIS implementation accordingly the completion level of the CIS: either it is full/complete CIS; or partial CIS; also for pilot implementation of some indicators and stepwise extension of indicators. The proposal for CIS was prepared for the pilot case of Salacgriva municipality with view to its eventual application for the whole eastern coast of the Gulf of Riga (for the Vidzeme region).

Institutional mapping and stakeholder engagement steps revealed over 130 institutions and stakeholders involved or with potential interest in the coastal governance (Fig. 2).

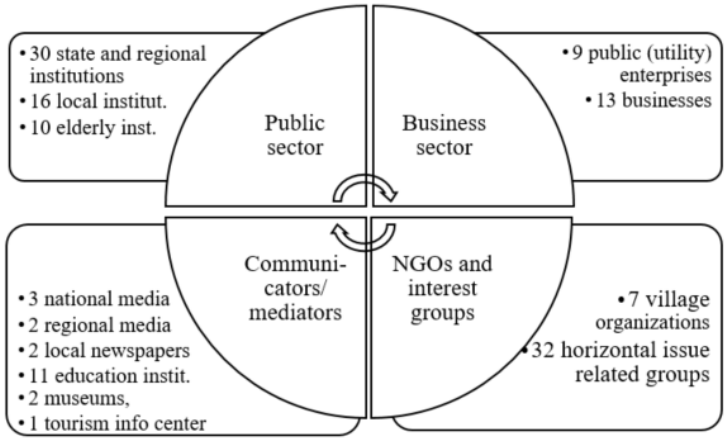

Figure 2: Institutional mapping of coastal stakeholders.

3 RESULTS

3.1 Understanding of the coastal issues and relationships to the ecosystem services

As result of the desk studies, thematic focus groups and stakeholder involvement, a list of 19 problems were identified in the coastal territory of Salacgriva municipality**.** Their analysis brought to the following principal findings: (1) there are few local coastal territories where resources are overly exploited or used in the interests of a limited group of stakeholders or individuals, creating additional strain on resources, as well as environmental pollution, as well as discomfort among other stakeholders. (2) At the same time, there are also local coastal territories where coastal resources are under-managed, causing risks of their further degradation.

The following causes of insufficient management were identified: (1) low density population of the coastal territory cannot provide a basis for sustainable coastal management, (2) stakeholders (including municipal authorities) insufficiently understand potential of the coastal resources for their local development; (3) lack of reliable information to support sustainable use of coastal resource for local development; (4) insufficient municipal efforts and activities for ensuring adequate coastal management.

A matrix of relationships between identified problems was prepared, revealing links that were scored as follows: 3 – direct, explicit link; 2 – direct, less explicit link; 1 – indirect link; 0 – unclear link (Table 1). Analysis of the problems structure and their interconnections led to the conclusion that there are three generic problems: (1) insufficient managed low-density coastal territories, (2) insufficient local environmental management/governance capacity, and (3) limited coastal communication (highest sored problems no. 17–19). Each coastal problem was analysed in respect to its relation towards providing ecosystem services.

3.2 Design of the virtual system

The next SAF step was to develop a conceptual system model for the central issue of the overall coastal governance system which was defined as “Unsustainable governance of coastal resources”. During the design of conceptual system model it was necessary to answer:

Table 1: Problems relationships with ecosystem services.

Nr.	Problem\Services group	Prod.	Regul.	Val.	Func.	Total
1.	Restricted access to sea	2	0	3	0	5
2.	Coastal erosion/dune existence	1	2	3	3	9
3.	Access of coast for people with special needs	0	1	3	0	4
4.	Coast erosion/shoreline preservation	1	3	2	3	9
5.	Over flooding during storms/areas with minimized risk of flooding	2	2	0	1	5
6.	Risks to valuable biotopes/the existence of valuable habitats	1	3	2	3	9
7.	Sea water quality	1	1	3	1	6
8.	Human safety in bathing/swimming places	0	0	3	0	3
9.	Nutrients pollution from rivers/ensuring the quality of water in rivers and on the coast	3	3	0	2	8
10.	Indvidual households' wastwaters/ensuring the quality of water in rivers and on the coast	3	3	0	3	9
11.	Potential pollution form industrial sites/industrial territories with (at least) no increase in the amount of pollution	0	2	1	1	4
12.	Forest damage/the existence of high-quality forest ecosystems	3	2	3	3	11
13.	Marine litter/unpolluted coastal assurance	1	3	3	1	8
14.	Risks to nature and culture capital/natural and cultural heritage of the existence of high quality	2	0	3	1	6
15.	High local seasonal pressures/providing minimally polluted coastal zone in sezonality visiting periods	2	2	3	1	8
16.	Construction of residential buildings on coast\dune existence	1	2	3	1	7
17.	Insufficiently managed low density territories	2	1	3	2	8
18.	Low environmental management/governance capacity	1	3	2	3	9
19.	Limited coastal communication/the existence of coastal communication	3	1	2	2	8
	Service group involvement	29	34	42	31	136
	The share of service group	21%	25%	31%	23%	100%

- What are coastal resources comprised of? The approach was based on three principal environmental management goals: protection of coastal biological diversity, ensuring coastal environmental quality and sustainable use of coastal natural resources.
- Which are system components? Governance subsystem, added to SES, became a central block allowing to address the central issue.
- Flow conceptualization was based on assessing pollution as a direct physical impact: ascertaining whether flow impact is negative or positive towards particular element.
- "Environmental action models" as a factor which influences system's behaviour was placed at the centre of the model. Such approach allowed to created links between: (i) environmental governance and municipal local governance instruments, (ii) stakeholder groups representing local socio-economic system, (iii) the application of specific governance models and instruments influencing stakeholders and encouraging them to adopt preferable environmental/coastal friendly activities. As result, (iv) this has a positive direct impact on reducing pollution and resource depletion in the coastal area.
- Impacts of external subsystems affect: (i) local economic activities, (ii) social system, the central element of which, in this model, are households and their practices or environmental/coastal activities, (iii) marine litter as global emerging problem affecting the coastline, (iv) external natural system (climate change which impacts seen as the erosion of dune ecosystem and wider coastal areas (forests, meadows), (v) blooming algae causing direct social and economic impacts (loss of property value, impacts on seasonal visitors etc.), (vi) invasive species (appearing due to climate change and human activities (e.g. shipping), besides deteriorating the coastal quality that results in limited open clean coastal space suitable for visitors.

Answering those questions in a systemic manner, enabled the research team to establish a coastal virtual system model for nature and governance subsystems.

3.3 Description of ESE model using indicator system approach

Thus, the main objective of the further SAF work was to make the transition from the research phase (development, modelling and analysis) to the improvement of coastal governance in practice. To achieve this, taking the SDM as the base, practically applicable tools for the coastal area governance were developed. An overall approach for attaining the system of coastal governance tools to address the issue applying the SAF is illustrated in Fig. 3.

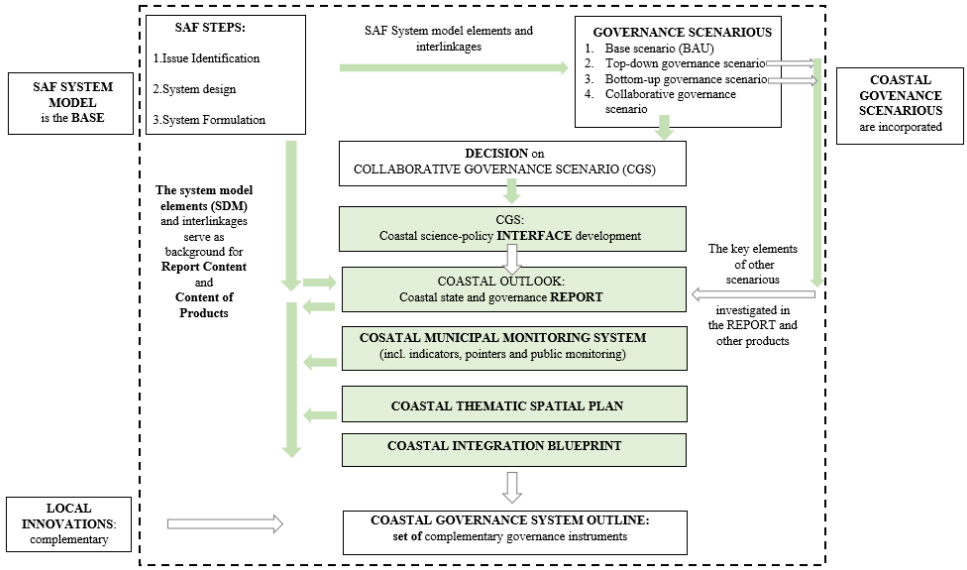

Figure 3: Layout of SAF application for coastal governance case [7].

The SDM makes it possible to establish an optimal number of parameters (necessary and sufficient) to characterise the state of the coast as a subject of municipal governance, and in particular, to understand the natural (ecological) and socio-economic processes and their interaction and framework for establishing interface to link science and decision-making.

The CIS is an important coastal governance decision-making support tools [8]. To establish a clear transition from the SDM model (science model) to the indicator system (IS) as a decision-making tool the following development steps have to be taken. Firstly, we had to look at the systemic parameters of the SDM. These parameters are required to understand SDM. The input parameters define initial conditions for further analysis of the state of the coast. At first, the parameters have been analysed from the point of their dynamic for change. The parameters with significant dynamics for change have been further included in the list of the coastal sustainability indicators.

As the whole complex system, CIS:

- describes the state of the coastal area, the stability of both – the coastal ecosystem and the coastal ESE, and their restorative potential;

- presents stakeholder concerns through the key parameters which can be improved through stakeholder participation in collaborative governance scenario [9].
- the set of indicators, included in CIS, are necessary and sufficient to adequately represent the functionality of the coastal system and the impacts of actions performed in the coastal area. These can produce a reliable view of the state and dynamics of coastal and governance, to possible extent considering limitations and conditions. This reasonability is provided by both – the CIS structure and methods chosen for data collection, processing, and analysis.

A proposed monitoring system includes parameters of different governance needs/levels: (i) quantitative indicators for monitoring long-term processes; (ii) quantitative resultative pointers characterising the achievement of objectives; (iii) semi-quantitative parameters: ranged observations and (iv) resultative pointers – a checklist (Yes/No).

There are three governance levels for application of the CIS:

- Strategic level – full-scale CIS application with biannual measurements for highly dynamic indicators and at least every five year measurements for indicators with lower dynamic. The main obstacles for implementing are costs and human resources.
- Tactical level – short-term annual monitoring measuring indicators which are highly relevant to characterize change in the coastal area. The costs of measurements shall be reasonable and carried out by either a municipal specialist or local communities or both. This monitoring shall be linked to the actual municipal development targets.
- Operative level – seasonal/monthly observation of the processes in critical coastal areas. The obtained data should be efficiently processed and analysed, and based on it – operative coastal management decisions should be taken and implemented in due time.

The CIS and the related Municipal Coastal Monitoring Programme (MCMP) are based on:

- Modifying and making better use of an existing component – municipal institutions' capacities, better organisation of the assessment of parameters;
- Additional new component – new bottom-up initiatives of stakeholders organized in coordinated and complementary way. Based on scientific research methods and citizen science initiatives, a citizen monitoring system has been designed;
- Integration of this new component and optimisation of the existing component will lead to the development of a new approach for assessment and new governance decisions.

The application of the CIS and MCMP have also been evaluated on the basis of the general governance scenarios developed within the previous SAF step [10].

In other words, the following information have been ascertained:

- What data has been collected and for which specific indicators (BAU scenario);
- What additional data might be collected by municipal institutions (top-down approach);
- Which data collections stakeholders are interested in (bottom-up approach);
- What collaboration should be established among municipal authorities and stakeholders and what new added value this provides (in the context of a collaborative scenario).

3.4 Use of indicators for assessment of ecosystem services

The developed MCMP indicators and parameters was connected to ecosystem services/ functions).

Assessment provided in Table 2 indicates that generally the indicator system is oriented to the assessment of a production function of the ecosystems.

Table 2: Links between CIS indicators and ecosystem functions.

Ecosystem services/functions	Number of indicators ranked "2"	Number of indicators ranked "1"	Total number of indicators
Production	9	25	43
Regulation	3	12	18
Cultural values	4	23	31
Support	9	3	21
Total number of indicators	25	63	–

Legend: Value "2" – if the indicator makes it possible to evaluate ecosystem, function, "1" – if the indicator provides indirect information for evaluation.

4 DISCUSSION

The novelty of the SAF application was the conceptual invention of a coastal science-policy interface for municipal governance case, which means integrated preparation of scientific knowledge that could subsequently be translated, transferred and integrated into ICM-related decision-making and implementation practice at the local level. This requires elaboration of the required background and tools for both the transfer process and deliverables, in order to manage interpretation of scientific data into "language" understandable by decision-makers at all governance levels, but primarily at local level and by the general public.

At first, the challenge for local governance and the first element and step of interface is coastal multi-thematic research and development and support for results, as the initial scientific basis for ICM development. Natural and social sciences knowledge of the land–sea interaction is available from academic and applied studies, but there is still a lack of locally specific coastal data and knowledge.

The second interface element is a Coastal Governance Survey (CGS). This is an informative and analytical document, which serves as a basis for policy formulation and decision-making. The CGS concept provides for the assessment of the state of ESE, including governance, particularly assessing instruments (Table 3), and role of stakeholder groups and their involvement in governance.

As regards the third interface element, the most important socio-natural process and impact parameters and its system are transformed within the framework of CGS content and the process that is a backbone of the coastal governance assessment system to be designed and applied for subsequent governance cycles – including the municipal coastal monitoring system (MCMS), but later also as a coastal indicator system, which are complementary and developed accordingly. MCMS is a complex observation (monitoring) system of different parameters, which makes it possible to judge both the implementation of spatial planning document (primarily, local SD strategy), and the general situation concerning the sustainability and sustainable governance within the municipal (and coastal) territory. It is designed for long-term planning documents. Information obtained from monitoring has to be used in formulation of policies and new planning documents; as well as directly for decision-making.

Table 3: Coastal governance instruments.

Instrument groups	Practical realization of governance instruments
Planning instruments	• Coastal problematics integration in planning (SD programme, spatial plan, development programme), integration monitoring; • Coastal sustainability report (present situation assessment); • Coastal thematic plan; • Coastal problem areas/sectors detail plans/local plan; • Coastal municipalities indicator system and monitoring.
Legislative instruments	• Local regulations specific to the coastal management; • Local regulations for communal services use (incl. for visitors).
Policy instruments	• Coastal (or environmental) consultative board at the Council; • Coastal sustainability/green declaration; • Commitments by the Council (like the Mayors' Climate Pact); • Municipality's sustainability report.
Economic and financial instruments	• Penalties, discounts for coastal management activities; • Entrance fees/permits (also outside the beach zone); • Project support (from LEADER and other programmes); • Environmental/coastal budget as a chapter in municipal budget.
Infrastructure instruments	• Parking places and access roads; • Footbridges/paths; nature trails and watching towers/platforms; • Information signs/instructions/boards; • Summer piers/boat docks, other boats management solutions; • Solutions for fortification of coastal dunes ecosystems; • Alternative energy (solar, wind) generators to lit nature trails.
Organizational (institutional and administrative) instruments	• Coastal (environmental) management commission/committee; • Coastal monitoring and management staff (seasonally); • Coastal development and infrastructure planner/manager; • Coastal NGO villages associations/elders with delegated tasks.
Communication instruments	• Coastal state monitoring (incl. citizen science); • Coastal topics in all education levels' curricula and projects; • Coastal citizen science mobile app and educational brochure; • Institutional internet site section devoted to the ICM.

MCMS is based on different types of applied coastal monitoring measures implemented by:

- Local municipality administration and subordinated organizations/services' staff;
- Other organisations, to whom certain municipal management functions are delegated;
- Interested inhabitants/groups and their representatives, thus potentially providing public participation contribution (citizen science), and
- Supplementing it with expert studies/assessments when necessary.

The citizen science contributes through public monitoring development involving self-organizing potential of networking between different voluntary groups/individuals [11]. As far as possible, this should be based on science principles. The general approaches have to be elaborated by relevant experts and discussed with stakeholders, while the public

monitoring programme should be supplemented with the parameters characterising the performance of the municipal medium-term development programme. Given the significant contribution from public involvement, a decision must be supplemented with a type of collaborative governance mechanisms. It could be a written agreement between municipality (or other public institutions) and NGOs, also with Eco-schools and other interest groups regarding the commitments for public monitoring.

The fourth challenge is the development and application of a municipal coastal (and development) indicators system (CIS/IS). In general, indicators are a tool for organising information and defining priorities. The IS simultaneously provides input for both ICM done by the municipality, as well as the assessment and achievement of strategic development goals. Assessment of indicator values is conducted by the municipality based on a precisely elaborated system of algorithms.

The fifth interface element and development step is the design of a coastal planning instrument – Coastal Governance Thematic Plan (CGP) which means implementation of a disciplinary ICM approach. Such a thematic plan should be an important component of the mandatory municipal spatial planning, providing a higher level spatial resolution and detailing (using spatial zoning approach) of the coastal territory.

The sixth and decisive step of the coastal governance interface is the result of all the previously developed scientific-applied results, integration into municipality mandatory development planning documents and budget (financial and investment plans). It is equally important that similar integration occur in connection with other existing or potential voluntary planning documents. Such integration process and result would ensure better vertical integration between national and local coastal development practices.

It is important to note that, throughout the BaltCoast project, the Latvian research team has considered development of Coastal Indicators System (CIS) as a special type of modelling The way research team interpreted quantitative modelling which actually might be either the mathematical modelling or modelling by applying CIS, is the CIS based on quantitative values and maintaining stakeholders' involvement in its definition. Taking this as a basic premise, a methodology was developed by the Latvian research team to ensure/create an interface for the transition from conceptual SDM to CIS-based modelling. The participatory function is undoubtedly a backbone of the SAF. CIS sustains the participatory function. Analytical models of the SAF methodology (especially CATWOE) provide new opportunities for identification and grouping of stakeholders.

5 CONCLUSIONS

Generic and typical ICM problems faced by many rural coastal municipalities in Latvia, which essentially lack the most vital local coastal governance capacities, require different management solutions to those traditionally and statutory-based being used already to approach topical problematic coastal issues as expounded in SAF applications and in the case studies of the BaltCoast project partners.

Therefore, besides basic development of the SAF application and its adaptation for coastal governance process, the following tasks were specifically assigned for the Latvia case study:

- To explore and evaluate different municipality coastal governance (ICM) approaches and
- To elaborate necessary approaches for SAF and ICM integration into the general local decision-making and municipal developmental/spatial planning.

The case study demonstrates the establishment of the interface between SAF methodology and coastal and municipal development planning methodology, leading to the development

of new coastal governance instruments in Latvia and their introduction, proposals for coastal analysis and governance, as well as integration proposals for general municipal planning.

The study area – Salacgriva municipality is also characterised by experience in environmental and participatory governance that is among the most advanced in Latvia, including village development-oriented NGOs, Village Elders institution, stakeholder Advisory Councils which taken together have an impact on formal local decision-making. At the same time, there is limited progress in the coastal development. The stakeholders are concerned about coastal resources which are not sufficiently protected and ongoing coastal degradation that may negatively affect the use and sustainability of the coastal resources for common benefit.

Thus, a type of generic problem limits the success of coastal governance in the municipality and this is seen as limited human, administrative, financial and other resources available for coastal governance. Another critical obstacle to the local coastal governance is the lack of reliable and update coastal information, resulting in flawed understanding of ongoing processes in the coastal area, which, in turn, undermines decision-making.

Applying SAF methodology, in particular, by using the SES and the stakeholder participation approaches, a coastal governance interface with ICM instruments was developed for the pilot territory. Importantly, all products are innovations for ICM in the national/Latvian context.

Science policy interface framework elaborated for the coastal (ICM) policy development, includes the following four innovative complementary set of non-statutory key ICM instruments:

- Municipal Coastal Collaborative Monitoring System (ICM Monitor) – a multi-disciplinary and public engaged (citizen science) programme for regular and locally managed provision of actual and locally managed information and also to be used for the ICM Outlook update with 2–4 years' regularity;
- Coastal Indicator System (CIS) as SAF application model for governance practice and Public Coastal Monitoring Programme (incl. detailed multi-thematic coastal monitoring for whole 55 km long coastline) as the complementary parts of the ICM Monitor.
- Municipal Coastal Governance Outlook (ICM Outlook) – a coastal status and governance Source Book/Report, based on multi-thematic data form national–regional–local level information (including necessary horizontal and vertical integration) and a special ICM studies/monitoring overview compiled locally for the municipal coastal area as a complex ESE system to be used for any ICM sector development and other related sector decision-making/planning at local municipal level with the participation of all stakeholders;
- Coastal Integration Blueprint (ICM Integration) – guidelines for the ICM approach and science-policy interface instruments, e.g. the coastal data/monitoring/procedures, integration into both mandatory and voluntary municipal planning process/documents: the municipal development programme (for a seven-year period with an annual upgrade) and related Spatial Plan.

Improvement of the coastal governance is based on modifying and better use of existing governance components: existing municipal institutional capacity (and staff) and providing space for non-statutory, new bottom-up initiatives by the stakeholders. Integrating these two components will lead to the establishment of a new approach for assessment of the state of the coastal area and new governance decisions inspired by it.

Overall, the application of SAF methodology and adaptation of it to the coastal governance R&D case in Latvia within the pilot study site in the Salacgriva municipality has

facilitated novel application of the SAF methodology; building of a new collaborative governance model and tools; creation of an interface between science and policy (decision-making), as well as practice (society); and conceptualisation of the coastal monitoring programme as an essential tool for collaborative governance that is aimed at improved ICM and is based on local ownership and active public(citizen) involvement.

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