

ENVIRONMENTAL AND CLIMATE CHANGE GOVERNANCE INTEGRATION INTO MUNICIPAL DEVELOPMENT PROCESS: AGGREGATION APPROACH FOR GOVERNANCE PROCESS STAGES

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Abstract. The environmental governance sector is nowadays the mandatory, but integrative applicable subject of municipal development governance content and process, including planning documents and their practices, but, certainly, to be done in close interconnection with the other main dimensions of sustainable development – economic and social dimensions, as well as importantly, the governance dimension. Valmiera city as one of the leading pro-environmental municipalities in Latvia was selected as a pilot territory within the Environmental and Sustainable Development Governance project (SUSTINNO) of the National Research Grant Programme, in order to study the environmental governance strength and challenges into their both complementary general application formats: governance sector and integration approaches, and, eventually designing and implementing some innovative but pragmatically based mixed/hybrid applications.

Environmental governance sector (branch) as multi-disciplinary sector itself, including inner cross-disciplinarity's, has been continuously and substantially developing for studying and governing of socio-ecological system into their interactive diversity. Valmiera city municipality has made clear and recognizable progress in complex implementation of the environmental governance in its territory by adopting and step-wise implementing environmental planning elements and management practices. Studies were realized in cooperation with municipality applying research-and-development framework approach and using case study research integrative methodology, complementary including document studies, household questionnaires and all main stakeholders deep semi-structured interviews, altogether. There have been designed and partially tested set of action policy proposals/instruments for systemic environmental governance process and its stages development for Valmiera city, what also could be eventually recommended for municipal environmental governance stages in general in Latvia.

Key words: governance process, 5P process model, auditing and monitoring, governance instruments and communication.

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Introduction and municipal environmental governance overview

Environmental governance research is closely related to the practice of environmental governance (hereinafter referred to as EG), namely, the implementation of research into the planning and management practices and vice versa (Armitage, 2008; Ernsteins, 2016). In the current studies, the known research-and-development (R&D) framework approach was utilized, where alongside the research phase and acquisition of academic results and insights, subsequently, there are to be taking place development phase, where, essentially also in partnerships with main stakeholders, are generated directly applicable results in practice – research application reports with designing of action policy recommendations (Armitage, 2008; Loe, 2009).

The statutory municipal development governance process, as well as environmental or any other sectorial/thematical governance process could be described and analysed also through the prism of governance process cycle and its stages. Traditionally, Environmental Management Systems (EMS), being based on ISO 14000 standard and its Plan-Do-Check-Act business cycle model, being used also by any other ISO series systems, are recognizing and structuring their performances around the six-step process

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as key elements of this standard: step 1: Environmental Policy etc. – Planning – Implementation – Checking and Correction – Management Review – Continual Improvement step.

But for this paper and other related R&D studies, particularly done in cooperation projects with municipalities in Latvia, there are used slightly different in 5 stages structured model of the **governance process cycle**, formulated as **5P stages model** (Ernsteins, 2017), and described below, but, particularly, emphasizing different first and critical process step as **Problem or Situation Analysis** (P1 step). In the planning practice for any policies and territorial planning documents, there could be recognized an analogy of this 5P model realization, even done to various extent. Otherwise, 5P's stages governance process model includes all main consecutive cycle steps for any governance process – stages are to be seen as parts of mutually inter-connected circular process, taking into account processual basic functions as audit-planning-management-control, and aiming to engage target/interest groups, but especially into every governance process stage (Ernsteins, 2017) (Figure 1):

P1 stage - **Problem Analysis**: situational status quo and trend analysis stage, using different data sources, and analysis of internal development potential, when identifying and clarifying environmental and developmental situations in the municipality/area, e.g. governance process audit, including existent qualities of the environmental governance content, stakeholders/segments and governance instruments, and then also engaging target groups for their evaluations, also usually when finishing this pre-planning stage, the SWOT analysis are carried out analyzing strengths-weaknesses-opportunities-threads, designing problem situation solving scenarios, overall monitoring frame and development perspectives;

P2 stage - **Policy Design and Formulation**: as strategic planning stage, where policy decisions are to be taken and the solutions of problem situations strategically planned and so the policy goal/s and main action directions are formulated, to be supported by clarified values and intentions, setting necessary principles and priorities;

P3 stage - **Planning**: as tactical planning stage (actionable short and medium-term planning), defining action directions into the tasks and subtasks etc.; preconditions and diverse resource provisions, set of policy instruments and actual monitoring frame (indicators/pointers);

P4 stage - **Practice Management**: as implementation stage of the plan/programme done, including distribution of tasks and responsibilities, communication and practical execution and management actions;

P5 stage - **Process Monitoring and Results Reviewing**: traditionally in 1-2 years, the systemic monitoring of the activities planned and managed in statutory municipal planning documents takes place, having review and decision making (eventually together with stakeholders, publicly) for the identified necessary adjustments in P3-P4 stages, or even for the whole governance cycle established, also preparing information for the subsequent P1 stage (Ernsteins, 2017).

However, the issue always remains about this governance process main functions of the audit-planning-management-control realization quality in the practice, starting with decisions made and methodological etc. approaches chosen by the leadership and specialists in particular municipalities – how to design and plan preparation process for P1 situation audit stage, next P2 and P3 planning stages, and, finally, for P4 and P5 implementation process stages. From national level having only spinal type guidelines for the structure and general content of the statutory municipal planning documents, these decisions and approaches in the particular municipalities in Latvia have been quite diverse for last decades and depending also from personal qualifications and motivation (Ozolins, 2023; Ernsteins, 2016). Traditionally it depends also from previous experiences, municipal territories and inhabitation size, location (central vs. peripheral, with or without regional development centres etc.) and type, particularly, rural vs. urban municipalities still often having various financial etc. resources capacities, especially, staffing capacities in general and,

importantly, in the case of environmental and climate change governance being understaffed. Besides the specialized staff of traditional statutory (according to the Law on Municipalities) environmental sectors as water, waste and heating (communal sectors), there was quite limited number of municipalities (mostly main cities) having any other type/specialism of environmental specialists or environmental managers (Ozolins, 2023). After the last administrative territorial reform in 2021 reducing number of municipalities in Latvia from 119 to 43 in order to increase their inhabitation size (to have at least around 20 000 inhabitants) and all necessary developmental capacities, the situation with environmental staffing has improved (Brizga, 2023). Also in the National Environmental Policy Plan 2014-2020 these municipal environmental governance shortages are recognized, as well as, still limited best practice exchange at the local municipal level.

Besides the main issue of this paper, the **environmental governance (sector) integration into municipal statutory development planning process cycle**, in parallel, there would be worthwhile at least qualitatively to review the similar exercise with actually similar and also content-wise overlapping, but even least developed, **climate change governance (sector) integration** issue too.

Comparatively new for municipalities in Latvia there is step-wise developing this climate change governance sector, previously dealt and developed within environmental governance sector planning and particularly in some urban municipalities, being there often combined with energy management sector, e.g. climate change and energy management subsector of Environmental Action Program, designed by Liepaja city coastal municipality (around 80 000 inhabitants) already in 2009. Also there should be mentioned, that there were not only such environmental sub-sectors elaborated and planned, but also voluntary initiated new municipal planning sector – actually, using different approaches and document structures, there were separate sectorial planning documents on climate change governance designed and approved by comparatively smaller local municipalities in Salacgriva (2011), Valka (2019) and Salaspils (2022). Also, more as dozen of local municipalities have signed EU Pact of Mayors (PM) and according to the joint matrix they have recently designed and approved Sustainable Energy and Climate Change Action Plans, instead of having just Sustainable Energy sector planning documents by PM during last 10 years. This gives another support for further establishment of the Climate Change and Energy (CCE) sector.

Particular change for municipal climate related issues governance was in 2023, when the new Law on Local Governments entered in force. This renewed law was, firstly, re-stating previously since 1991 known municipal autonomous functions in the nature/environmental fields (communal sectors as water, heating, and municipal waste, also sanitary cleanliness, green areas and natural capital and few more specific ones), however, there were not included any of other environmental activities what municipalities carry out anyway on a voluntary basis, related and chosen according their actual needs, e.g. protecting and improving air quality, remediating polluted sites, working with noise and other subsectors, monitoring and ensuring water quality in bathing areas, etc., and this list is ever growing – these subsectors are to be taken into account especially carefully, when planning and implementing environmental governance integration approach.

Secondly, the new law introduced also one new function to be at the full responsibility of municipalities, however quite vague formulated – to contribute to climate change mitigation and adaptation. Also in the municipal planning handbooks and recommendations issued by Environmental Protection Ministry is especially advised to consider the development of **voluntary sectorial planning document on climate change governance**. Finally, besides is to be mentioned, that newly elected national parliament have accepted proposal by just established majority Cabinet of Ministers to create brand new ministry – the

Ministry of Climate and Energy, combining together related departments from Environmental Protection Ministry and Economics Ministry, starting to work from 2023.

Continuing with all other environmental governance sectors/subsectors, there is to be mentioned the comprehensive list of all main environmental governance sectors being developed and accounted into regular or statutory municipal practice in Europe, as well as, good municipal sectorial practices, are compiled by the European Commission in the report "Best Environmental Management Practice for the Public Administration Sector" (Canfora P., 2015). There are described not only those known traditional communal sectors as water supply and wastewaters, waste, energy, then also green/rural areas and nature protection, but also a number of other environmental sectors to be taken regular care of – air quality, noise pollution, land use, mobility, and, separately both, climate change mitigation and, especially, adaptation, then green public procurement, environmental information/education for companies and for citizens. Actually, there could be mentioned more sectors or fields of municipal interest and/or municipal responsibilities, prescribed by different national level laws and bylaws.

Both, environmental and climate change governance sectors, obviously are seen as cross-sectors, also requiring **horizontal sectorial-thematic integration** process and not only with traditional and new non-traditional environmental subsectors, but, particularly, also with a wide range of socio-economic sectors of the any particular municipality/territory. In this context, there is obviously also straight similarities with another cross-sectorial governance application – integrated coastal (zone) management (ICZM) approach and understanding, being known already since 1970-ties (Karpouzoglou, 2016; Ernsteins, 2017), before introduction of marine spatial planning applications, and having many positive non-formal and formal experiences to be learned from at all governance levels, from municipal, to regional and national ICZM sectorial planning documents in various regions and countries across continents. This is also reminder of another ICZM mandatory feature, being important in the cases of environmental and climate change governance sectors – **vertical integration across governance levels**. All this and more was required also by EU already in 2000 in order to have National ICZM Strategies elaborated for all EU coastal countries by 2006, unfortunately still being not fully realized.

Research and development framework: case study research

The research-and-development (R&D) framework approach was used to study and then also to propose to the municipality related action policies guidelines for environmental governance process development for all the process cycle stages. The studies described took place in two stages.

First stage was realized before Administrative Territorial Reform (ATR) taken place in Latvia in 2021, what has been crucially changing municipalities' landscape due to reducing number of municipalities from 119 to 43 in order to increase the size of municipality and a number of inhabitants (above 20 000) around the chosen regional development centres for enhancing of the municipal development potential and various possibilities. This research stage was implemented within the framework of the National Research Program "Innovation and Sustainable Development: Environmental diversity and sustainable governance (SUSTINNO, 2014-2018) as multi-step research program, covering various environmental governance related topics, sectors and involving several case studies research, including in municipalities.

Given the multisectoral and complex nature of environmental governance and its connection to all aspects of territorial development planning, the methodology of the study was **integrative case study research** (CSR), which involves using several complementary methods to obtain processed information. Studies described in the paper were organized in urban Valmiera city municipality (about 25 000 inhabitants) as one of the most pro-environmental municipalities in Latvia, having some partnering

activities with University of Latvia already previously. Then this research was oriented towards academic and municipal collaboration also with potential designing, adapting and legally implementing jointly elaborated policy and planning initiatives. Already after initial research done, Valmiera municipality have been approving jointly elaborated Environmental Declaration (2015) as complementary policy document to their just approved main statutory municipal middle-term development planning document – Valmiera city municipal Development Program (2014-2020), including also special chapter on Environmental Awareness Development, based on structured application of action-oriented environmental communication model (Ernsteins, 2017) with all four communication instruments planned – environmental information and education/training, participation and pro-environmental behaviour. In the Valmiera environmental governance process cycle study, the following methods were used: document studies, including analysis of municipal and higher-level planning documents, analysis of state and local regulatory acts; interviews with main governance stakeholder's representatives; observation studies; focus group interviews and round table discussions; also household survey with results complementary to results of the stakeholders' interviews, but not described in this paper due to size limitations.

Stakeholder interviews (altogether 42 in-depth, semi-structured) with especially chosen key representants of the main stakeholder groups (Ernsteins, 2016): national/regional level and municipal administration (including municipal utility companies), production companies, intermediary groups (mediators - media, educators, non-governmental organizations (NGOs), experts/science), and then separately also short selection of households. The questions were related to the assessment of the environmental situation and governance in Valmiera. A matrix of semi-structured interviews was developed consisting of five interview modules, starting with the introduction of the interview, where also the identity of the interviewee as belonging to a certain or several governance stakeholder group/s, and, also to the relations to and between all main stakeholder groups and their environmental activities, was discussed and recorded. The next module of questions was about environmental communication (action-oriented model) - the internal and external communication practice in municipality and related companies/organizations was recorded. The third module included all environmental sectors – where the respondent is asked to evaluate what has been done in the sectors known in municipality and his/her organization or company. The fourth module helped to identify specific pro-environmental actions both in the institution/company and in the territory of the municipality. The last module - about governance instruments and their use.

Few focus group interviews were realized, based on research results and including development proposals, as well as, two **round table discussions and seminars** with municipal leading politicians and department directors and senior executives.

Document studies - studies of the national and regional documents for top-down requirements, municipal legal/regulations and planning etc., management documentation of municipal administration divisions and communal companies etc., and, also documents of governance segments outside municipal administration as far it was possible. Various municipal document studies were complemented by the local areas **observation studies** – inner and outer pro-environmental behaviour practise activities and cases, while visiting mentioned governance segments/organizations, the all main stakeholder's organizations in situ, for interviews and besides them.

Second stage of the studies was realized also in Valmiera municipality, but after the Administrative Territorial Reform of 2021 - Valmiera city merged with five neighbouring rural municipalities and two smaller towns becoming then Valmiera county municipality. As a result, the area of the municipal territory increased from 19.35 km² to 2 946 km², including very sizeable nature, forested territories and arable lands etc., and, in terms of population change – from Valmiera city population around

25 000 inhabitants to Valmiera county with around 51 000 inhabitants after the reform. Accordingly, not only the capacities of the municipality increased, what was particularly important for environmental governance further developments and our studies, but also the range of problems to be solved, including those related to environmental governance.

During this studies stage, besides traditional and above described **document studies**, but particularly, of county documentation and data basis, and comparative **observation studies**, there were performed also **stakeholder interviews** (altogether 8 in-depth semi-structured and several express interviews) with relatedly to the first studies stage chosen key representants of stakeholder groups, but also not only on environmental governance process progress after ATR of 2021 as also on comparatively newly growing energy and climate change (EEC) sector developments, both integrative and sectoral.

Results of the Valmiera municipality case study research

1. Results of the all main stakeholder's interviews: summary

By the Law on Municipalities, there are delegated a wide range of environmental governance related autonomous functions to the local management level – this is municipal responsibility with full accountancy, but to fulfil these functions in all sectors prescribed, there are also important, actually essential, eventual collaboration development with all main other governance stakeholder groups (segments) and in both integration complementary directions (Ernststeins, 2017): upstream with regional and national governance levels up to international/EU level, and, downstream with local corporate segment, inhabitants/household segments, also particularly, with more and more emergent mediator stakeholders segment as NGO's, media, educators (formal/non-formal) and knowledge/science segments.

There is the municipal political will and administration interest to further develop the existent favourable environmental situation in the city (as valued by stakeholders outside municipal administration and companies), and its political etc. manifestations (e.g. the Green City Declaration, various Environmental Action Days etc.), even partly this could be perceived as campaign-like activities, still the scepticists are a minority. Even in general valuing environmental management positive, several of the respondents pay attention on particular unsystematic and not always systemic performance of environmental management activities in practice (besides basics of communal sectors management), also mentioning as these are eventual consequences of the lack of the responsible environmental specialist position and/or the proper environmental management organisational structure in the municipal administration to be responsible for the full scale integration of environmental issues into municipal everyday management. Each department acts in the frame of own duties, but there is not yet sufficient mutual coherence. However, there is also the opinion, especially by municipal administrators, that the current arrangements work well enough and do not need to be changed. The municipality has a number of internal and external, general public oriented, environmentally friendly actions, which are positively valued. Other positive municipal environmental performance aspects are related to environmental communication activities and instruments, also recognizing the role of existing municipal work position of the environmental communication specialist. But there are also deficiencies mentioned e.g. the transfer of the information to those target groups that are not so active. In general the municipality is evaluated as sustainable development focused. But necessity to create the municipal organizational structure-coordination for environmental management have been emphasized by various stakeholders, including from municipal administration.

Practically all respondents emphasize the good quality of Valmiera's environment; compared to other cities in the country, especially the big ones, it is even rated as excellent. This assessment is made up of

several components, noting serious improvements over the last 10-12 years: reconstruction of the wastewater treatment of the city and companies, as then also the water quality in Gauja river, splitting Valmiera city in two parts, normalized and is rated as good, however, there is some remaining pollution mainly brought from the upper stream connections; various activities of companies in environmental protection. The episodic air quality problem is in the vicinity of the dairy plant. Noise is practically limited problem as elevated levels are noted only around major transportation highways, but not significantly disruptive. The only concern is the activity of the households not connected to centralized sewerage, of few last and limited private housing areas. The cleanliness of the urban environment, as well as the state of parks and squares, are highly valued. The city has very good drinking water, used also as potable springs. Most of the respondents know what is happening not only in their immediate surroundings, but in the whole city, are informed about each other and have an opinion not only about the functioning of the municipal administration, but also about the functioning of most other target groups. National environmental institutions at the regional level in Valmiera city, are accused by some respondents as having too formal approach, but the attitude towards them is not strongly critical. All stakeholders note the lack of active environmental NGOs, at the same time stating that they actually have not much to do in the city.

2. Environmental governance process: summary for 5P process cycle stages

In the research phase complementary methods of case study research methodology had given very substantial information and data base and for this paper we will be using that research integrative summary results and also complementary research-and-development approach mode, as well as, following step-by-step structural analysis and action policies plannings based on environmental governance process cycle **5P stages model** (Ernststeins, 2016).

Problem analysis (P1)

In this stage, it is crucial to understand what data relevant to environmental management is available to the administration or potentially accessible but currently unused. Significant sources in this regard include the Environmental Overview of the Valmiera 2017 Spatial Plan, the review sections of the Development Strategy and Program, as well as document and statistical source studies.

The Environmental Overview was developed within the Strategic Environmental Assessment (SEA) procedure of the spatial plan, adhering to the requirements of regulatory acts (Cabinet Regulation No. 157, 2004). It provides fundamental information covering almost all environmental sectors regarding environmental quality and potential impacts of the specific planning document on the environment. However, environmental burdens and risks are not extensively characterized. Despite meeting regulatory requirements, the Environmental Overview lacks integration with geospatial information and does not reflect environmental management aspects.

The Sustainable Development Strategy and Development Program did not have a specific section on territorial analysis, but it was developed separately for both documents. It contained highly detailed and well-illustrated information about the city of Valmiera, but environmental burdens were insufficiently described, and there was a significant lack of information about environmental management organization within the municipality. Furthermore, community target groups were not addressed, which is not the task of territorial description. Most of the sources identified in document analysis were used, but data from Latvian environmental, geological, and meteorological databases were only partially utilized.

CCE sector - P1. Problem analysis in the CCE sector requires nowadays much wider and system-based approach and, especially, also more risk assessments and additional financial planning and management.

The main municipality's autonomous function is the obligation for the municipality to organize heating services for residents regardless of the location and type of residential properties. This is task traditionally for municipally owned or co-owned heating and other communal infrastructure companies. Additionally, within the municipality's administration, there are buildings and other energy-consuming infrastructure and facilities to implement other autonomous functions. Meanwhile, the new Municipalities Law defines the work towards climate change mitigation and adaptation as autonomous function of the municipalities. Thus, the challenges faced by Valmiera municipality, like any municipality in Latvia, are associated with improving energy efficiency in municipally owned buildings and in centrally heated residential buildings. Especially, since the energy crisis triggered by the various regional conflicts, ensuring energy security has also become a challenge, strengthening municipal and Latvian energy independence, as well as optimizing energy consumption. Achieving climate neutrality requires reducing greenhouse gas emissions and promoting CO₂ sequestration in various sectors. To adapt to climate change, the municipality has to identify climate change risks and expected impacts. Increasing flood risk possibility and the expected rise in various extreme weather conditions are significant concerns and is to be accounted.

Since January 2017, the municipal council of the municipality of Valmiera has approved the municipality's energy policy, determining the municipality's commitment to support the energy management system and improve its efficiency. The three priorities of the certified energy management system: **thermal energy consumption of municipal institutions, electricity consumption and street lighting**. The total length of Valmiera lighting networks is 122.27 km. 81.82 km of them are currently regulated by the automatic street lighting control system Lucidus Smart. The system has 3,649 light points, including 1,463 or 43.65% LED lights.

Since September 2012, the residents of Valmiera apartment buildings have the opportunity to receive co-financing from the Valmiera city municipality for the management of their buildings, for example, for energy audits, simplified renovation of buildings, as well as yard improvement. There are 82 fully renovated apartment buildings out of 167 in Valmiera, which is 49% of the total number of apartment buildings. The largest operator of apartment buildings in Valmiera, SIA "Valmieras Namsaimnieks", which also has built the first municipal apartment buildings in Latvia in 2018, as well as educates residents of Valmiera about energy-efficient and building and health-friendly operation of buildings. In Valmiera, in a communal house of different social groups at Udens Street 2C, during its reconstruction, solar collectors were installed on the roof of the building for the preparation of hot water. Solar collectors for hot water preparation have also been installed on several other buildings in Valmiera, where consumers are using the building intensively even in the sunny summer season.

In 2019, Valmiera City Municipal Council approved the thematic planning "Valmiera City Transport Infrastructure Concept" and its environmental report. As the most appropriate transport hierarchy for the city, the document mainly proposes walking and cycling as the two basic modes of transportation in the city. In order to reduce the number of cars on the streets and encourage the use of public transport, a system of discounts of up to 100% has been established for different groups of the population for public transport.

Policy Design and Formulation (P2)

Within the framework of the current study and in collaboration with municipal specialists, the Valmiera City Environmental Declaration was developed and adopted by the municipal council on January 29, 2015. This document serves as a testament to the municipality's political will regarding actions that affect or may affect all environmental sectors within the city. Such a declaration represents a typical "umbrella"

instrument in the "P2 – Policy Definition" stage of the planning cycle, affirming the municipality's commitment to maintain a specific course not only in individual environmental areas but also across all stages of governance and in all areas. By the fall of 2017, the Declaration had been signed by 366 residents and representatives of significant enterprises. The introduction of the declaration outlines its intentions and mission statement. In the subsequent territorial development and/or environmental management planning process, all analysis of the situation and policy documents should directly or indirectly contain all elements of this structure. The Environmental Declaration also became the "visiting card" of the city council; for example, it was displayed in the foyer of the city council. The declaration was prepared as a policy proposal formulated as a result of research and was adopted by the municipality with minor changes compared to the proposed version.

CCE sector - P2. Valmiera, as the administrative centre of the county, is a sustainable city that, while promoting the industrial development of the area, cares for a clean and organized urban environment, the preservation of natural values, and the mitigation of impacts on the surrounding environment. To strive for climate neutrality by 2050 and thus contribute to the achievement of the UN Sustainable Development Goals, particularly Goal 7 "Affordable and Clean Energy" and Goal 13 "Climate Action", Valmiera county municipality decided to join the international EU Covenant of Mayors in 2022, with elaboration and improvement of the **sectorial CCE planning document** in 2023 – Valmiera Sustainable Energy and Climate Action Plan until 2030. Tasks have been set to achieve the objectives of Valmiera's sustainable energy and climate policy in all areas affected within the municipality's competence. At the same time, utilizing climate communication instruments, Valmiera municipality as an implementer of the European Green Deal at the local level, promotes the participation and collaboration of all stakeholders affected in the implementation of energy and climate policy. Valmiera municipality has also defined its energy policy, which is part of the energy management system. It establishes principles for practically maintaining and analysing the municipality's work with energy resources and Valmiera municipality decided on the ten principles.

Planning (P3)

In the Valmiera City Development Program for 2015-2020, there were noticeable consistencies regarding the environmental management elements incorporated therein relative to those mentioned in the Strategy. In the strategic objective "Personal Growth," the action direction (S-4) "Environmental Awareness" outlined tasks for promoting environmental awareness (Table 1).

The Valmiera City Development Program Monitoring Report included the following indicators related to the environment: organized environmental events (target: stable); percentage of households connected to centralized water supply and sewage (target: increasing); streets with pavement (target: increasing); multi-apartment residential buildings where energy efficiency measures have been implemented (target: increasing); natural (green) areas (target: stable).

Thus, the environmental component in the long-term priority "Educated, active, creative society oriented towards a healthy and environmentally friendly lifestyle" resulted in one of the medium-term priorities: "Development of sports and active recreation offerings, orientation towards a healthy and environmentally friendly lifestyle." Meanwhile, the long-term priority "Accessibility of work, housing, healthcare, and social services in a safe city" corresponded to the medium-term priority "Formation of functional, aesthetic urban environments with developed and environmentally friendly infrastructure and efficient resource management"; conditionally, this can also include the development of governance directed towards residents and collaboration. However, it should be noted that environmental issues were not addressed

anywhere in the priority of economic development, which was somewhat contradictory to the principle of green and simultaneously industrial areas envisioned in the environmental declaration – achieving such a result is not possible without directly linking environmental issues with the economy. The presence of environmental management in the tasks of medium-term priorities was significantly important. The establishment of a multifunctional environmental and science centre and infrastructure development envisaged the development of environmental education and information at a new level and beyond traditional educational institutions. Three out of nine points in the development of urban environments were dedicated to environmental and its management issues. The revitalization of territories and the section on engineering infrastructure and waste management were fully related to environmental management, and moreover, the development of degraded and undeveloped territories are environmental issues directly linked to economic development. The promotion of energy-efficient transportation use, as well as the development of cycling infrastructure, were two of the four main directions for the development of the city's transportation systems.

Table 1

Environmental awareness promotion thematic planning in the Valmiera development program

Action Planning: Environmental Awareness via Environmental Communication tools
S-4-1 Societal information, education, and awareness building on environmental issues and environmentally friendly lifestyles (total of 4 actions)
S-4-2 Societal participation in environmental governance and promotion of environmentally friendly behavior (total of 5 actions)
S-4-3 Establishment of a multifunctional environmental and science centre and infrastructure development (total of 4 actions)

The analysis of planning documents created the impression that environmental and its management issues constitute a significant component of city development. However, there was no apparent systemic approach to their inclusion. It appeared that the development program compiled suggestions from sectoral specialists. The specialists involved in the specific planning situation had a high environmental awareness, but there was a lack of balance, unity of concept, and integration. In fact, no attention was paid to environmental management as such and the development of environmental communication. In the municipal planning documents there is mentioned necessity and plan to develop an Environmental Policy Plan.

In Valmiera, a large number of binding regulations issued by the municipal council were in force, which, in accordance with the municipality's competence and functions, regulated various aspects of city life. Several of them directly or indirectly related to specific aspects of environmental management: No. 119 on waste management; No. 182 on tree felling outside forests; No. 133 on the procedure for taxing buildings that degrade the environment, are dilapidated, or endanger human safety; No. 277 on the provision and use of public water management services. Additionally, several other binding regulations included individual aspects related to environmental management.

CCE sector - P3. The implementation of climate and energy management by the municipality of Valmiera is carried out both via integration approach and recently also as sector approach as since 2022 there is established, even voluntary planning document - the Valmiera Sustainable Energy and Climate Action Plan until 2030, Plan until 2030, Climate change policy (the Green Deal) is integrally defined by the municipal statutory Development Program as one of the municipality's three horizontal development priorities. Municipal horizontal priorities serve as guidelines for planning and implementing all medium-

term measures and investment projects. Thus, all planned investments must be assessed in response to the question of what contribution the investment project will make to the Green Deal. The Valmiera Sustainable Energy and Climate Action Plan includes separate analyses of electricity and heat production, defines a climate and energy management model, and analyses the following sectors affected by energy and climate policy in Valmiera municipality: municipal buildings and facilities; public lighting; residential sector; water supply; domestic sewage; stormwater management; blue-green infrastructure in urban planning; waste management; transportation and mobility; business and tourism sector; agriculture and forestry; management of developed peat bogs; health; civil defence and emergency situations; climate communication. Energy poverty is separately analysed, and the impacts of climate change in the region are also analysed separately: extreme heat; extreme cold; extreme precipitation; floods; sea-level rise; drought; storms; landslides; forest fires.

Practice Management (P4)

In the framework of governance implementation, there was a general presence of environmentally friendly actions in the municipality's overall action plan. The implementation of policy measures was evidenced, for example, in January 2017 with the approval of the city's municipal energy policy. On March 29, 2017, the municipality received the LVS EN ISO 50001:2018 energy management certificate, confirming the effective energy management system covering 63 municipal buildings and public street lighting in Valmiera. The municipality engaged in environmental information, environmental education, public participation, and promotion of environmentally friendly practices.

The short-term action plan for development, in accordance with regulatory requirements, was designed as a dynamic component of medium-term spatial planning. Aligned with the 4 strategic objectives, the action plan was divided into 4 parts. The strategic objective "Safety of residents, both socially and physically," contained 3 environmentally friendly action directions under "Governance," with the most significant being the implementation of Environmental Policy (EP) by developing the EP strategy by 2020. Several actions were indirectly related to environmentally friendly practices as they involved resource conservation.

The strategic objective "An aesthetically pleasing, functional, and nature-inclusive urban environment" contained environmentally friendly elements in almost all of its points. The strategic objective "Business development" included at least 3 environmentally friendly actions directly related to the economic and environmental interrelationships. Similarly, several positions indirectly addressed environmentally friendly practices. The strategic objective "Personal growth" included various environmentally friendly elements indirectly.

Valmiera City Council did not have **institutional environmental management instruments**; considering the scale of the territory, the creation of such instruments may not have been purposeful. The position of Environmental Communication Specialist served as an administrative governance instrument in Valmiera, highly valued by the public. Other environmental management issues were divided among specialists in different areas, indicating that environmental management issues within these areas were generally addressed successfully (as evidenced by public reaction). However, some issues remained unresolved, and the existing scheme was evaluated as insufficient to further support the growth and development of environmental management. As a solution, the creation of a position responsible for environmental information circulation (including preparing information for the Environmental Communication Specialist) and coordinating environmental management activities in the city was consistently highlighted in interviews.

CCE sector - P4. The municipality implements CCE sector management applying both approaches – sector and integrative. Considering climate change policy as a horizontal priority for municipal development, the promotion of energy efficiency is particularly integrated and emphasized in the municipality's statutory Development Program, the long-term development priority "Attractive Living Environment and Space" and its medium-term development priority "Accessible Housing", as well as in each of its action directions: AD1 "Accessibility and Mobility"; AD2 "Engineering Infrastructure"; and AD3 "Residential Stock". Municipal Sustainable Energy and Climate Action Plan defines sectorial approach to the municipal energy and climate management. The municipality implements a certified energy management system ISO 50 000 covering energy efficiency of municipal buildings, electricity consumption of municipal buildings, and public lighting. The Municipal Real Estate Management Department, in collaboration with municipal administrations of local parishes, is responsible for the management and administration of municipal real estate owned or used by the municipality or leased to it. Within the Real Estate Management Department works the specially appointed specialist - municipal energy manager, who is also responsible coordinator for the work of the Municipal Energy Management Supervising Working Group and energy management system. Municipality owned and established joint-stock companies play a significant role in the implementation of municipal energy management, providing centralized heat production, energy transmission, and housing management.

Process Monitoring and Results Reviewing (P5)

Valmiera city Sustainable Development Strategy did not contain monitoring and evaluation system or their elements as regulatory requirements did not demand them from strategic planning, instead, such a system was attached to the mid-term planning (7 years) Development Program. The Valmiera city Development Program 2015-2020 defined the urban development priorities and directions of action, achievable results and the procedure and system for monitoring the implementation results of the development program. This monitoring and evaluation system consisted of 9 strategic development indicators describing the general social and economic development - population, territorial development index, etc. and 23 mid-term indicators related to development priorities and achievable results within the framework of action directions. There were still no particular/sectorial environmental governance indicators in the list of strategic indicators, however, there was one indirect environmental governance indicator - "Satisfaction of the population with life in Valmiera", the numerical value of which is determined by means of a population survey. In the same time, for the monitoring of the medium-term priorities, there were mentioned the following, even just 3 basic indicators - Number of households connected to centralized water supply and sewerage (%); Number of apartment buildings with implemented energy efficiency measures; Natural (green) areas (ha).

Since 2015, regular biannual reports on both monitoring indicators have been prepared, but they had a more descriptive nature, without detailed analysis, especially in the context of overall territorial sustainable development. The biannual developmental planning Monitoring Report 2019 of the Valmiera city Development Program 2015-2020 indicates that the 2019 Valmiera Residents' Survey showed also results with relation to above mentioned strategic indicator - that 94.6% of residents are satisfied with life in the city, which is 5.6% more than in 2013 and 0.4% less than in the 2018 survey. It should also be noted here that while the characteristics of all indicators increased between 2013 and 2020, one of the key indicators, namely population size in the city, continued to decrease.

Later on Valmiera city municipality was defined as a national city within the Administrative Territorial Reform (ATR) and merged with five neighboring rural municipalities and two smaller towns in 2021.

Importantly, that the positive practical experience and strategic development documents of the neighboring rural and small towns municipalities were taken into account when developing now already Valmiera county statutory development planning documents starting from 2022. The number of indicators related to environmental governance in the Valmiera county Development Program 2022-2028 has increased significantly compared to the Valmiera city programming document - from 3 indicators as mentioned to 40 now. This is one of the highest number of environmental governance indicators in any municipal development planning documents in Latvia. Now the monitoring indicators system is actually covering not only all traditional-communal sectors (water, waste, heating), but also new environmental sectors being outside those statutory communal sectors prescribed by the Law on Municipalities. In the new Valmiera County Sustainable Development Strategy 2022 - 2038 is formulated one unified and summarizing goal: "Valmiera county - a territory of excellence in economic development, knowledge and social life with a dynamic and intelligently governed environment", which significantly emphasizes the meaning and importance of good environmental governance in the municipality, but at the same time, environmental governance indicators are still not included into this long-term strategic development planning document, however in several other Latvian municipalities strategic indicators could be found. Of course, long-term development indicators in development strategies may overlap with and complement the medium-term indicators in development programs but there is clearly a need for such a link. Development strategies should include at least one long-term management indicator as a variable related to changes in the medium-term performance indicators of the activities, which should correlate with changes in other key long-term development indicators such as population changes, indicators of economic activity in the municipality (GDP, number of active enterprises etc.). In the mandatory monitoring system of the territorial planning, there should be more detailed procedure provided for the preparation of monitoring reports, including requirements for data sources etc.

CCE sector - P5. The implementation of the statutory municipal mid-term Development Program was and is to be evaluated every three years. It includes monitoring indicators for the following development sectors: demographics; youth; education; social services and child protection; security; healthcare and promotion; culture; sports; business, economy, and tourism; mobility and infrastructure; housing; water management; heat management; drainage, stormwater, climate change adaptation; environment, nature conservation, public space; digital transformation (information society); governance. Among them, the following indicators for the implementation of energy policy and climate policy in the sector of "mobility and infrastructure" are included: Total length of roads with sidewalks and pedestrian paths; Total length of cycling infrastructure in the district; Number of electric charging stations in the district; Number of passengers transported on regional bus routes in Valmiera district; Number of passengers transported on the Riga-Valga passenger train route per year; Number of mobility points; Share of low and zero-emission vehicles in the city's public transportation fleet; Positive residents' assessment of public transportation accessibility; Positive residents' assessment of pedestrian infrastructure and public space; Positive residents' assessment of cycling infrastructure development; Positive residents' assessment of mobility infrastructure development (cycling, car-sharing, food delivery to home, information etc. new services); Positive residents' assessment of public transportation accessibility.

Discussion: Proposals for Environmental Governance Process in Valmiera

Although general development planning principles envisage the inclusion of all three (actually, four) dimensions of sustainability in the development planning process, currently, legislative acts do not require the assessment of environmental situations in municipal territories and the incorporation of guidelines into

territorial development planning documents; essentially, this is of a voluntary, goodwill nature. Accordingly, there are neither methodological guidelines on how to do this nor corresponding instruments available.

In Valmiera, the Environmental Governance Process Cycle is organized through the following elements - tools for each stage of the governance cycle (Figure 2) (Ernststeins et al., 2020):

- Environmental Problemanalysis (P1 – Environmental Governance Report - EGR);
- Environmental Declaration (P2 - Policy Formulation - already implemented);
- Environmental Management and Communication Program (P3 - Policy Planning);
- Environmental Management and Communication Action Management (P4 – Policy; Implementation - practice management within the respective planned programs);
- Environmental Management Monitoring System (P5 - Monitoring).

The Environmental Governance Report (EGR) is a comprehensive document of environmental management situation analysis and is based on a wide range of information sources, including necessary research. In an integrative approach, Environmental Management is one of the cross-sectoral binding elements and a direct source and reflection of sustainability. EGR envisages assessing environmental impacts not as a specific planning document aspect, but as a sum of planning documents and non-planning factors - the actions of society's target groups. EGR views the environment in terms of environmental condition, management, and public involvement, and as one of the fundamental elements of sustainable development. EGR concludes with joint and sectoral Strengths, Weaknesses, Opportunities, and Threats (hereinafter - SWOT) analysis matrices, which serve as guidelines for planning document development.

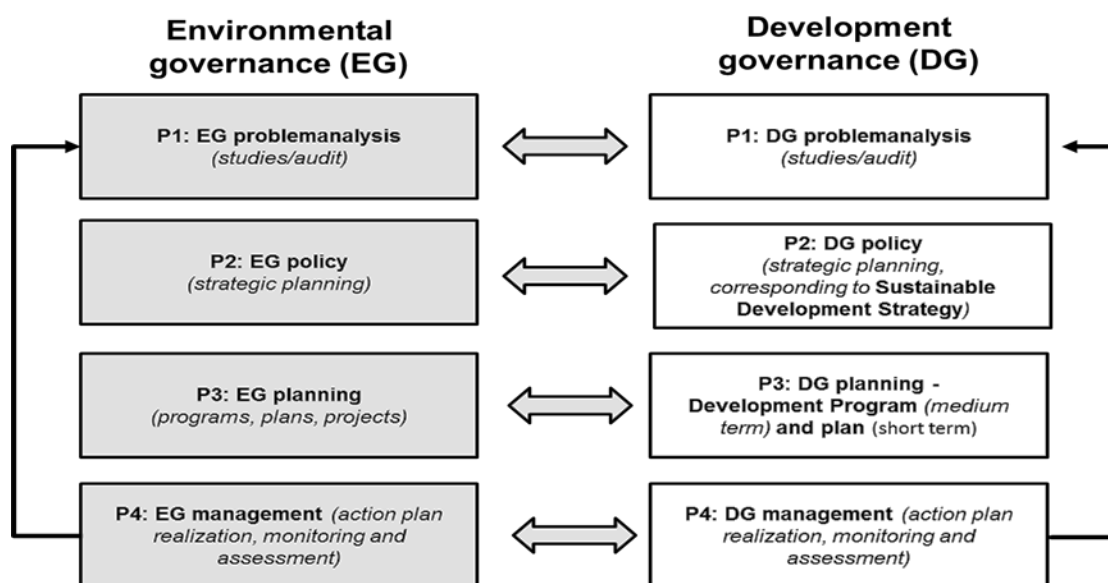


Figure 1. The necessity of procedural interaction (step-to-step integration) between the environmental governance process cycle and the municipality's overall development governance process cycle in the context of the reduced 4P process model (Ernststeins, 2016).

Policy Formulation, Environmental Management and Communication programs derive from the information and guidelines provided by EGR. These programs respectively define the overall strategic vision, surface objectives, goals, priorities, and medium-term action directions for Environmental Management and Communication (as components of governance) and structurally do not differ from general development planning documents. A SWOT analysis of the environmental communication sector had been conducted in Valmiera, forming the basis for the forthcoming environmental communication program. Similarly, to the territorial development program, documents are concluded by action and investment plans, and these documents are discussed in a broad public participation process.

Sustainable Development and its Management monitoring in municipalities are comprehensive instruments for planning supervision and evaluation. Various monitoring and evaluation systems for different planning documents do not allow for a clear overview and comparisons, and are also very inconvenient and ineffective from a management perspective. The municipal monitoring system is being developed at the proposal level as a component of EGR; it is the focus of environmental and sustainability information circulation and a strategic public information and involvement tool. All included parameter systems are complementary, and each performs its function within the framework of sustainability monitoring: Sustainable Development Management indicators allow monitoring progress towards long-term goals, including forecasts and an early warning system for issues in achieving these goals; Performance indicators in the development program allow monitoring the development direction and progress towards medium-term goals; Execution indicators in the action plan allow monitoring the execution of this plan's points (Kauliņš, Ernsteins, Kudrenickis, 2018).

It is essential that the systems of indicators and performance metrics overlap significantly; specifically, performance metrics can form the basis of indicator systems, supplementing the list with missing parameters and ensuring methodological provision for all of them. A significant element here is the broader public engagement in civic monitoring, involving data collection, processing, and subsequent discussion (Aceves-Bueno, 2015: 493-506 pp.). This approach allows for the observation of a range of parameters in all three subsystems, some of which would be practically impossible to obtain information on otherwise. From the public's perspective, such a method increases trust in both the specific measurements and the overall governance and planning initiatives (Pruse, Datava, 2017). The municipal monitoring concept is thoroughly justified and elaborated upon.

Conclusions and recommendations

- 1) The Valmiera City Council had expressed a clear political will for the further development of environmental governance instruments by adopting the City's Environmental Declaration as a long-term guideline, a behavioral model for the city's further social, economic, and governance development, while balancing the importance of natural dimensions in sustainable development processes.
- 2) The use of environmental governance instruments in Valmiera's long-term and medium-term planning documents was justified by the general characterization of the territory and the adequately developed environmental awareness of responsible sectors. Planning documents contained a number of significant principles for the further use of environmental governance instruments; these principles were detailed in short-term planning documents down to the level of specialized action groups, clearly assessing potential benefits. However, several positions in the action plan did not specify specific objects (mostly related to infrastructure) to which these actions would apply; perhaps this was due to insufficient clarity on funding possibilities. Precise tasks for the further development of environmental governance and the respective instruments were defined in the planning and communication fields.
- 3) The further development of the use of planning instruments in environmental governance in Valmiera is closely related to institutional/administrative and communication instruments. Institutional development was a key factor in the development of other instruments, as it was necessary to establish a position for a coordinated stage in environmental governance planning and actions, as well as in environmental disciplinary information circulation.
- 4) To ensure the sustainable development of Valmiera City from an environmental governance perspective, it was necessary to include the Environmental Situation Description in the municipality's Sustainable Development Strategy and Development Programme, develop disciplinary sectoral policy

planning documents such as an environmental policy program or environmental communication program, but also integrate environmental governance directives into other sectoral planning documents.

5) Monitoring and evaluation of sustainable development in Valmiera City, while simultaneously creating a dataset for the needs of the next planning cycle, could take place through comprehensive municipal monitoring, developing it based on the results of the development program, where the system includes a block of sustainable development and its governance indicators, a block of planning document performance indicators, and a block of planning

6) document implementation indicators. The foundational document of the monitoring system is a manual containing detailed methodological guidelines for system usage.

7) The successful approval of the environmental governance cycle instruments in Valmiera could serve as a basis for improvements in regulatory acts regulating these issues at the national level.

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