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Selecting indicators for sustainable development of small towns: The case of Valmiera municipality

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Abstract

Although much has been written about sustainable development of cities, the debate over the role of small towns as engines in rural development is just beginning to emerge. In the light of the post-recession austerity climate and new a planning period of EU Cohesion Policy it is important to examine the strategic dimensions of sustainable town development. The paper proposes and applies methodology for selecting sustainable development indicators. The study presents a case study of the town Valmiera in North Eastern Latvia. During a stakeholder facilitated indicator selection process 108 indicators from economic, environmental and social dimensions were assessed and filtered leading to a key indicator set of 15. The indicators are grouped according to development themes and reviewed in the light of conceptual and implementation qualities. Review of the sustainable development indicators and the methodology of indicator selection proposed in this publication constitute inputs for creating future based models of sustainable small town development.

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1. The role of small and medium sized towns in regional development

Although the current political agenda is primarily focused on the role of cities in promoting regional development, small towns have been at the centre of European urban history since the times of ancient Roman cities. In the pre-industrial era small towns performed essential functions of sales, retailing, trade and craft as well as religious and administrative functions. Fortified towns provided protection from attacks in the Middle Ages when a network of market places developed. In the 17th and 18th century cities of nobles and administrative cities developed, but in the 19th and 20th century the life in towns and cities was lead mainly by industrial development. SMESTOs usually fulfil the following functions:

- Supply function – provision of region’s population with necessary goods and services.
- Housing function – provision of sufficient habitat and building grounds.
- Labour market function – provision of structures to ensure local economic activities.
- Cultural function – provision of leisure and tourism, which can be reinforced by city marketing and branding.\(^1\),\(^2\).

Originally most small towns were agriculturally marked, but later they gained new functions with development of transport as well as the administrative and tourism sector. After the 2nd World war towns were seen as functional centres for industrial and business development often resulting in decay of spatial and social structures at the expense of heavy industry.

At the end of 1980 world economy underwent significant changes, which resulted in industrial decline of many small towns. The effects of so-called “shrinking cities” were closures of industrial plants and related economic sectors. Due to the limited workforce absorption capacity, unemployment and outmigration became reality for many small town residents. The economic recessions of 1990s and 2008 lead to polarization of differences between the SMESTOs and metropolises. This in many instances took over several functions previously owned by small towns.

It is no surprise that the contemporary regional development agenda remains heavily focused on large cities. This is also backed by evidence. The study of World Bank\(^3\) strongly supported growing competitive advantages offered by larger cities. In Europe analysis of data for the period of 1995-2004 at NUTS-3 level by L.Dijkstra and H.Poelman\(^4\), revealed that “cities with over 50,000 people were more likely to offer diverse employment opportunities, higher education, specialized health care, a sizeable local market, shops and services such as banking. All of these aspects influence the region’s capacity to attract and retain people and also its labour productivity”.\(^4\) With cheaper transportation large agglomerations provide more economic benefits for businesses and residents while SMESTOs especially those with dominant industrial background often remained trapped in a vicious circle of declining jobs and industry.\(^1\) In the hierarchy of territories, urban systems are therefore more stable whereas peripheral areas usually slipped into decline.

While asymmetry between the SMESTOs and metropolises is increasing, there have been attempts to keep small towns on a map. In contrast to traditional model, which was based on economic growth and expanding city size, the Post-fordist model of the 80-90s emphasized flexible town specialization and integration in urban systems.\(^5\) The Post-fordist model of development recommends that small towns rely on the combination of internal (endogenous) and external (exogenous) resources and strategies of development. Modern communication infrastructure and governance are vital elements for compensating the shortage of traditional – materially oriented development assets. In policy-making terms this has been acknowledged by OECD’s\(^6\) report on New Rural Development Paradigm. The report urged to refocus the policy-making mind-set from sectorial (usually agriculture-centric) approach based on subsidy allocation, towards a place-based, integrated approach that focuses on investment. In this approach towns and rural areas have to find their competitive advantages. Independent review of EU regional policy performed by F.Barca made a case for place-based integrated development.\(^1\) As a result, the European Common Strategic Framework 2014-2020 proposes funds for sub-regional Community Led Local Development.\(^7\) This action is going to be vital for small town development in the years to come.
Although Post Fordism and the New Rural Development Paradigm envision avenues for rural and town development, these avenues are not easily turned into opportunities. Although a widely regarded option to attract creative people from larger cities seems lucrative at first, in reality it is difficult to implement in practice. Small towns usually lack amenities, such as concert halls, theatres, art galleries, a music scene that are necessary to attract the so called creative class. Metropolises also offer a more tolerant environment for creativeness and unconventional lifestyles, which are sometimes difficult to pursue in small towns where sentiments of conservatism and nationalism run high. Some suggested finding economic niches and fostering specialization in terms of production and exchange of specific resources with its environment. Specialized towns, such as culture towns, tourism towns, green towns, wine towns, food towns can offer attractive services to visitors and jobs for locals.

At the same time overspecialization can increase the vulnerability in an economic downturn or even cause harm in cases when neighbouring cities take up the same specialization. For specialization to work towns need to reach a political consensus about complementarities of the cities and their hinterlands. There are several dimensions in which rural-urban relationships can be organized, such as transportation, tourism and recreation, community development, agriculture, culture and others. A recent report from Small Towns Initiative of the Built Environment Forum in Scotland emphasized the role of joined up action by the public sector, which needs to be supported by local residents and businesses. The report also emphasizes the relevance of preserving and developing a historic environment, public services, property ownership, local innovation, and education opportunities.

Here some basic conclusions for indicator selection can be deduced. Firstly, sustainable development indicators should not only assess the performance of a town’s functions. They also need to demonstrate a town’s awareness of its development assets in a turbulent economic environment. Secondly, indicators should be politically and practically relevant. This means that indicators should be linked to policies that are aimed at building local assets and improving a town’s potential. Finally, Indicators should provide relevant spatial information on linkages with other urban and rural systems to promote healthy urban-rural interaction within a network of other towns, cities and rural areas.

2. Sustainable development of towns and cities

Small towns are generally seen as more sustainable places to live in because of the absence of congesting forces, such as traffic, pollution and crime. Reduced transportation costs in terms of fuel and time along with higher division of labour are regarded as main advantages of SMESTOs. Not until the 1970s with emerging movement for sustainable cities did development planners realize the importance of historical preservation and environmental quality. Over the years the concept of sustainable development (SD) has led to various definitions, understandings and instrumentations. Basic definition of SD implies interrelation of three dimensions – Environment, Economy and Society, meaning that each of these dimensions is as important as the next one. SD became political objective of United Nations with several important summits and Rio Conference in 1992. Some of key SD policy frameworks include comprehensive action plan Agenda 21 (1992 reaffirmed in 2002), Aalborg Commitments (1994), Framework “Driving forces Pressures, State of the Environment, Impacts, Response” (DPSIR) adopted by European Environment Agency (2005), and UN’s Global Initiative “Millennium Development Goals (2001). Policy frameworks for sustainable cities are also offered by international non-government bodies such as “Cities for Climate Protection Campaign – an international association of local governments and organizations who have made a commitment to sustainable development in 1990; international organization “The Natural Step” (TNS). Several international reports, such as Ecological Footprint Network, Global City Indicators Program (GCIP), UN’s Human Development Index, and The Intergovernmental Panel on Climate Change contain a wealth of global indicators and data. It is safe to say that today SD is one of the most commonly concepts in politics. In 1999 EU’s Amsterdam Treaty also established SD as one of the main milestones for EU.

While SD paints a vision of “how things should be” policy implementation sometimes falls short of SD goals. The calls for SD approach have sometimes been regarded as pressure from the international community (mostly
wealthier countries) to advance their economic interests in less industrialized countries. Critics argue that there is no clear proof that SD actually ensures sufficient economic growth, considering the conflicting nature of environmental and social aspects. Other critics point out that there is inherent no government has enough mediating power to keep all three dimensions in balance. There have also been criticisms regarding the abstractness of SD concept, the uncertainty of government to cooperate with non-governmental actors and limited capability of stakeholders to implement SD agendas in regions.

Nevertheless SD remains a powerful concept and it has been used extensively in town development since 1994 when several European capital cities signed so called Aalborg Commitments. These commitments became the foundation of SD planning in cities. Municipalities that signed Aalborg Commitments vowed to establish principles of effective governance, protection and preservation of natural resources, wellbeing and health of citizens.

Sustainable city (SC) is seen as a united, sustainable system, but towns and cities are in fact dynamic, complex, open and diverse systems. To achieve tangible results, town planners are encouraged to avoid taking the high road in becoming sustainable. Instead they are urged to adapt to the circumstances of each particular town, considering economical, ecological and social reality. At a local level sustainable development might be difficult to achieve because of complexities shaped by the nature of a place and varying demands of citizens. Therefore local leaders often need to balance theoretical demands with specific practical demands of citizens. Sustainability practices are also subject to availability of resources, different environments, and abilities of citizens to engage.

Several frameworks exist to measure and guide sustainable development. Most recent examples include European Common Indicators for Urban environment (2002), Complete Community Indicators for U.S Towns and Cities (2012), Reference Framework for European Sustainable Cities (2008), Sustainability A-Test (2006) and Sustainable Cities International (2012). It is beyond the scope of this publication to review them all, but few generalizations are in place.

Methodologies measuring SD address town development from three fundamental dimensions – environmental, economic and social. Each dimension is broken down into specific themes. Each theme is then populated by relevant indicators. SD themes vary yet all address aspects of town and city life such as transportation, availability of public open areas, children’s journey’s to and from school, local products promoting sustainable lifestyle (e.g. European Common Indicators for Urban Environment). Some methodologies present sustainability from life-event perspectives, for example - living, working, moving, thriving etc.

Data for indicators is not always available. Most methodologies foresee data gaps. For greater flexibility indicators can be grouped in core and discretionary (additional) indicators. Core indicators are more relevant in policy terms, and they are regularly monitored whereas discretionary indicators have lower priority or they are used to measure specific aspects of SD. The use of discretionary indicators is optional. In some instances discretionary indicators may suffer from unavailable or poor quality data. In addition, some methodologies offer online interactive toolkits that enable participating municipalities to develop full SD profile and monitor the progress of their SD strategies. An example of this is “Reference Framework for European Sustainable Cities” which identifies 25 objectives.

It is argued that the best way to develop SD indicators is to rely on positive past experiences and apply lessons in development planning. Such an approach is taken by the Canadian International Development Agency’s (CIDA) indicator set. This set was synthesized from several of the latest frameworks of sustainability indicators. Selected indicators were then applied to measure sustainability of several cities to test their relevance. CIDA’s methodology is used as the latest frame of reference in this study.
3. Sustainable development in Latvian context and the case of Valmiera

Being strongly dominated by the capital city and surrounding metropolitan area, Latvia is a country with pronounced regional disparities. Capital city Riga and its metropolitan area includes more than half of the country’s population (53% of the country’s population in 2012). A high concentration of people, capital and knowledge in the centre makes the development of smaller towns and cities especially challenging. The country is experiencing a rapid population decline. From 2007-2012 the country’s population declined by 3% whereas in Riga metropolitan area population declined by only -0,7%. In Vidzeme region where Valmiera is located population decline was significantly higher -5,0%.

In addition to economic and demographic factor scenarios, Latvian towns are shaped by changes in administration of local authorities. Currently 119 municipalities perform functions of territorial planning at a local level. Administrative territorial reforms of 2009 reduced the number of municipalities from 522 to 119. The reforms were aimed at increasing the capacity of local municipalities. To align the settlement and the infrastructure at current demographic levels, the number of municipalities is likely to also be reduced in future. The recently adopted Regional Development Policy (2013-2019) lists several actions aimed towards increasing the capacity role of local governments although it remains to be seen how these actions are effectively implemented. Five Latvian panning regions (Riga, Vidzeme, Kurzeme, Zemgale, Latgale) currently have little administrative power. They perform coordination of activities of local governments and facilitate elaboration of joint projects.

An important step towards a more systemic approach to spatial development planning was the adoption of Sustainable Development Strategy Latvia 2030 (Latvia 2030). It was the first long term planning document that contained a clear baseline and target indicators for tracking the progress of development policies. Since 2002 Regional policies focus more on functional rather than administrative character of spaces. Latvia 2030 divides the territory in 9 centres of national and regional significance, rural areas, Baltic Sea coastal area, Eastern border area and Riga metropolitan area. Latvian towns are divided according to their size and functions.

The town of Valmiera is considered a development centre of national significance although it has smaller economy than major national development centres, such as Daugavpils, Ventspils, Liepaja and Jurmala (see Table 1).

Table 1. Towns of National Significance in Latvia.

<table>
<thead>
<tr>
<th>Town</th>
<th>Town area, km²</th>
<th>Larger area (functional area + town area), km²</th>
<th>Population (2012), thousands</th>
<th>Unemployment (2012), %</th>
<th>Population change (2007-12), %</th>
<th>Share of personal income tax in municipal budget (2011), Lats per capita</th>
<th>Development Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riga</td>
<td>304</td>
<td>10287</td>
<td>699,2</td>
<td>6,6</td>
<td>-3,4</td>
<td>377,3</td>
<td>0,281</td>
</tr>
<tr>
<td>Ventspils</td>
<td>57,8</td>
<td>2515</td>
<td>55,2</td>
<td>7,5</td>
<td>-4,1</td>
<td>359,1</td>
<td>0,359</td>
</tr>
<tr>
<td>Valmiera</td>
<td>18</td>
<td>2946</td>
<td>26,7</td>
<td>6,8</td>
<td>-3,0</td>
<td>340,3</td>
<td>0,126</td>
</tr>
<tr>
<td>Jelgava</td>
<td>61</td>
<td>1663</td>
<td>63,5</td>
<td>8,0</td>
<td>-3,8</td>
<td>318,7</td>
<td>0,030</td>
</tr>
<tr>
<td>Daugavpils</td>
<td>72</td>
<td>2523</td>
<td>101,1</td>
<td>8,2</td>
<td>-5,6</td>
<td>220,0</td>
<td>-0,680</td>
</tr>
<tr>
<td>Jēkabpils</td>
<td>26</td>
<td>2995</td>
<td>25,9</td>
<td>10,6</td>
<td>-3,5</td>
<td>243,8</td>
<td>-0,829</td>
</tr>
<tr>
<td>Liepāja</td>
<td>61</td>
<td>3652</td>
<td>82,4</td>
<td>9,3</td>
<td>-3,6</td>
<td>250,8</td>
<td>-1,222</td>
</tr>
<tr>
<td>Rēzekne</td>
<td>17,5</td>
<td>3440</td>
<td>33,9</td>
<td>15,1</td>
<td>-6,2</td>
<td>247,0</td>
<td>-1,931</td>
</tr>
</tbody>
</table>

Based on: State Regional Development Agency (2012). Regional Development in Latvia.

1 City of Riga and metropolitan area, 8 large towns which have larger and denser populations; industrial base, tourism, recreation and some can even compete on international scale. 21 towns of regional significance who’s economic influence stretch beyond administrative borders of single municipality. These municipalities used to be former centers of administrative districts (rajons) and their population size greatly varies from 8000 to smaller. Several administrative centers of local municipalities that are considered development centers of local significance.
Valmiera is located in North Eastern Latvia in the historical Vidzeme Region. In 2012 the town’s population was 26.7 thousand in territory of 18 km². It is surrounded by three municipalities - Burtnieku novads, Kocenu novads and Beverinas novads, although it’s economic impact area stretches further encompassing also municipalities of Mazsalaca, Naukseni, Rujiena, and Strenci in the North (see Fig. 1).

Together with the hinterlands functional area Valmiera stretches over 2928 km² and has a population of 61.7 thousand people. It is the primary centre of employment in the Vidzeme region. Compared to other towns in region, it has more jobs, higher share of income tax per capita, higher average salaries, and lower levels of unemployment. The town has successfully retained an industrial base, developed basic services and infrastructure. It has also established a centre of higher education to hinder brain drain to Riga. According to Valmiera’s Social and Economic Development Programme (2008-14) the town defines itself as the centre of industry, administrative services, science, research, education, culture and sports. The Investment and Action Plan (2012-14) ensures that investments are diverted into these areas.

![Fig. 1. Towns and their areas of direct influence in North Eastern Latvia. Source: State Regional Development Agency (2012). Regional Development in Latvia.](image)

The work on town’s future planning has begun on Long Term Development Strategy for 2015-2030 and Development Programme for 2015-2020. These policy documents will include indicators that will be used to monitor the town’s development. Assessment of previous progress was carried out by Piziks in 2011-12. This stakeholder oriented study assessed Valmiera’s development progress using SD framework according to Aalborg criteria for sustainable cities.

The study concluded that social dimension of SD of the town is considered most relevant and also most problematic. Key themes include long-term unemployment, youth unemployment, low civic participation, systematic provision and planning of education, the system of social care and its effectiveness. The study also showed that the town’s economic life is aligned with principles of SD in areas of production, consumption, entrepreneurship, and the placement of enterprises.
Shortage of free industrial areas and housing are regarded as key issues. Additional challenges include new job creation, building consensus for the town’s budget, creation of economic innovations, maintaining effective town’s infrastructure and public image.

Finally, the study concluded that environmental dimension of SD is regarded as least problematic for the town, although greater citizen awareness about environmental issues and solutions is needed. The availability of clean water, sustainable land use, availability of open places for recreation, and cutting down on domestically caused pollution were major concerns. In a way the municipality needs to continue to pay more attention to environmental planning.

4. Indicator selection methodology

Indicators are simple measures related to something more complex of primary interest. OECD defines indicator as “a statistic or parameter that, tracked over time, provides information on trends in the condition of a phenomenon and has significance extending beyond that associated with the properties of the statistics itself”.

To ensure that selected indicators are applicable, they must fit with themes of sustainable town development considering that some of them are already mentioned in policy documents. The selection of indicators followed the methodology developed in KITCASP project “Key Indicators of Territorial Cohesion and Spatial Planning” commissioned by European Spatial Planning and Observation Network (ESPON). In KITCASP indicators were selected using participatory approach with attempt to select only 30 key indicators from 4 themes that can be used in policy making in 5 case study territories, while leaving a set of discretionary indicators to account for specific needs of case study region.

Not all statistical information can be used in policy making for practical purposes. Not all indicators can be measured due to financial constraints. Therefore the number of indicators should be limited and narrowed down to those indicators with clear and rational purpose which are practical, relevant and applicable in addressing and identifying policy objectives and development priorities in specific territory.

The indicators in this study were chosen on the basis that they were, as far as possible, quantifiable and spatially specific. It was also important to check if indicators were capable of capturing change over time, and thus provide information sensitive to change in a timely manner. Based on these concerns, indicators were filtered based on stakeholder assessment of each of the following questions:

- Does the indicator address the policy objectives and development priorities (i.e. overall priority themes) of the case studies?
- Does the indicator enable assessment of the performance and dynamics of balanced territorial development (i.e. can it be mapped to illustrate spatial patterns)?
- Is the indicator regularly measured (i.e. are there reliable and regularly updated datasets available or monitoring arrangements in place)?
- Does the indicator effectively provide information sensitive to change to timely aid decision-making processes?
- Is the indicator well understood by planners and decision-makers (i.e. can it communicate the results in a concise and accessible manner)?

If most criteria were met, the indicator was selected, if not – the indicator was discarded. If the indicator partially met criteria it was put on a list of additional indicators. The indicator selection process was facilitated by personalized questionnaires and one-to-one semi-structured interviews, which were conducted with 17 senior municipality department employees whose basic functions were related to indicator themes. In addition stakeholders from non-governmental sector and city’s church were involved in evaluating specific indicators.
Respondents were also free to suggest additional indicators. In addition to the bottom-up approach in indicator selection, the top-down approach was also used. Several additional indicators of sustainable town development proposed by CIDA were also included among indicators to be filtered later by the stakeholders and authors. Authors undertook the role of correlating indicators suggested by multiple stakeholders. The indicator selection process is shown in Fig. 2.

![Indicator selection process](image)

**Fig. 2. Indicator selection process.**

### 5. Results and discussion

Overall 108 indicators were included in the study. 81 (75%) of them were already used in previous policy documents, 12 new were included on the key indicator list, but 15 indicators were considered additional. Results show that 52 of 81 current indicators were considered relevant, but 24 indicators - optional. Stakeholders were unclear about 3, but 2 were considered unnecessary although they were understood by policy makers. The result of selected indicators is shown in Table 2.

<table>
<thead>
<tr>
<th>Economic Indicators</th>
<th>Social Indicators</th>
<th>Environmental Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution of businesses and employed by industries</td>
<td>Town population</td>
<td>Reviewed the area of green spaces (km²)</td>
</tr>
<tr>
<td>Percentage of added value from turnovers of entrepreneurs</td>
<td>Average age of population</td>
<td>The number of green space reconstruction projects</td>
</tr>
<tr>
<td>Foreign Direct Investments (capital/earnings)</td>
<td>Mortality rate</td>
<td>Proportion of protected areas</td>
</tr>
<tr>
<td>The number of tourists</td>
<td>Life expectancy</td>
<td>Developed environmental action program</td>
</tr>
<tr>
<td>The number of guest nights</td>
<td>Residents by their education level especially residents with higher education</td>
<td>The funding for re-cultivation of soil, utilization of harmful waste and environmental</td>
</tr>
<tr>
<td><strong>Economic Indicators</strong></td>
<td><strong>Social Indicators</strong></td>
<td><strong>Environmental Indicators</strong></td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Accommodation load</td>
<td>The number of students in schools</td>
<td>Regenerated areas (diverse environment) (km²)</td>
</tr>
<tr>
<td>Dynamics of foundation and dissolution of local businesses</td>
<td>The number of children not attending schools</td>
<td>The number of protected animal and plant species</td>
</tr>
<tr>
<td>The number of cultural events</td>
<td>The number of children with special needs attending schools</td>
<td>Percentage of preserved areas/ reservoirs/ waterways/ parks in relation to total land area</td>
</tr>
<tr>
<td>The number of visitors in cultural events</td>
<td>Percentage of children attending pre-school education</td>
<td>The number of pets</td>
</tr>
<tr>
<td>Quality of street and sidewalks cover</td>
<td>Funding for education</td>
<td>The number of vaccinated pets</td>
</tr>
<tr>
<td>Percentage of roadways in good conditions</td>
<td>Education and age of teachers</td>
<td>The funding for re-cultivation of soil, utilization of harmful waste and environmental projects</td>
</tr>
<tr>
<td>Transportation mode split (percentage of each mode of transportation, i.e. private, public, bicycles, pedestrians)</td>
<td>The number of programs for interest education</td>
<td>Sulphur dioxide emissions</td>
</tr>
<tr>
<td>Average commute time and cost</td>
<td>The number of foreign students in university</td>
<td>Nitrogen dioxide emissions</td>
</tr>
<tr>
<td>Percentage of total energy consumed in the city that comes from renewable sources</td>
<td>The number (and amount) of people receiving financial support</td>
<td>Levels of Particulate Matter (PM10, PM2.5 mg/m³)</td>
</tr>
<tr>
<td>Access to local/neighbourhood services within a short distance</td>
<td>The amount of housing allowance</td>
<td>The number of high risk environmental objects</td>
</tr>
<tr>
<td>Percentage of houses with communications (including electricity, water, sewage, gas, heating, internet, phone lines)</td>
<td>At-risk-of-poverty index</td>
<td>Quality of drinking water (quotas)</td>
</tr>
<tr>
<td>The number of public Wi-Fi places</td>
<td>Measures of income distribution and inequality</td>
<td>Accessibility of drinking water</td>
</tr>
<tr>
<td>E-governance; accessibility of e-services and usage in communication with municipality</td>
<td>The number of assistance centers</td>
<td>Quality of waste water</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment structure</td>
<td>Percentage of population with access to water born or alternative (and effective) sanitary sewage infrastructure</td>
<td></td>
</tr>
</tbody>
</table>

Note: The indicators, which were highly preferred but were not used/not available at the time of publication, are shown in grey.
5.1. Economic indicators

Overall 17 key indicators related to economic dimension of town development were selected. Among those were 9 that were not yet used, but were suggested. Overall there is an emphasis on creation of high value added enterprises and attractive business environment. The importance of measuring foreign direct investment (FDI) was acknowledged, as it was one of key elements for new job creation.

Several tourism indicators and culture related indicators were also included among key economic indicators. Economic dimension also included city infrastructure and transportation related indicators. Several indicators, such as transportation mode split, average commute time and costs are seen as important, but are currently not estimated. Neither is the measurement of access to local/neighbourhood services. In addition to traditional service accessibility, the number of Wi-Fi places and e-governance indicators are also suggested.

Among proposed indicators that were mentioned but were not picked for the key list are City Models in 3D, Accessibility Measurement of Infrastructure for different groups, and Resident Mobility in Public Transport, Mobility of Automobiles, and the Number of Automobiles per 1000 inhabitants. Somewhat surprising, that indicators related to housing, such as New Living spaces, the Number of Apartment Homes, the Number and Area of Newly Built Private Housing were not selected as key indicators. It is therefore important to keep them as additional indicators. Depreciation of housing stock and inflow of residents from surrounding rural areas will keep housing issue on the agenda and they use of these indicators might soon prove necessary.

5.2. Social indicators

Social dimension included 28 indicators. Most (22) were already used in planning, and additional 6 were suggested. Judging from 9 education indicators, the role of education is clearly seen as priority among stakeholders. One of the education indicators is a Number of Foreign Students in the University. This indicator is important for the regional Vidzeme University of Applied Sciences in the context of the region’s demographic decline. Several indicators are suggested to capture community activism, such as the role of NGOs and online activities. Citizen satisfaction with life in Valmiera is not measured but is preferred. Growing importance of life quality and wellbeing means that this dimension will have to be addressed.

Currently social dimension lacks indicators on health. Several health indicators were not selected as key indicators. These indicators included Addiction Prevention Measures, Proportion of Vaccinated Children, The Numbers of Abortions, The Number of Victims of an Occupational Diseases, Time of Ambulance Arrival, Accessibility of Family Doctors, Availability of Medicine, Indicators describing Stationary Care. Because of ageing population and growing costs of health care, attention should be directed towards collecting relevant information on local health statistics. Indicators measuring availability and the number of assistance centres were not selected as key indicators partly because of vagueness of a term “assistance centre.”

Several indicators of local security, such as Police Assistance Time, Number of Crimes per Type and Road Traffic Accidents were not included among key indicators. Although some indicators, such as The Accessibility of Infrastructure for People with Special Needs, Unemployment and Employment Level were not included, they can be collected from data sources.

5.3. Environmental indicators

Environmental dimension contains 26 indicators most of which are already used. Based on available indicators, Environmental dimension emphasizes availability of green space, reduction of emissions, and the availability of clean water. Valmiera town has one of the lowest heating tariffs in the country and the apartment home insulation program has been actively used by house cooperatives. At the same time heating costs constitute a significant
portion of individual income, making payments for heating into a social problem for many municipalities. Therefore indicators, such as Heat Costs, Percentage of Heat Losses, and the Quality and Safety of Heating, are included alongside other indicators.

Among preferred indicators that are included, but not yet used are - The Number of Civic Initiatives about Environment Protection and Number of Schools with Environmental Education Programs. Although education does not directly improve environmental quality, it can have long-term impact on environmental awareness and can transform social values in a longer run.

Another suggested indicator was the Ecological Footprint. It is not currently used and there is a need to develop methodology and gather data to calculate it. Waste management can also have profound impact on the environment, however indicators of waste management were not selected as key indicators. These were - Total Amount of Waste, and Proportion of Purified Waste Water, Proportion of Graded Waste, and The Amount of Recycled Materials.

6. Conclusion

Indicators reflect certain development priorities, but only some indicators are able to communicate complex relationships between phenomena in a simple way and in a manner, which is easily understood. Selecting indicators is not a straightforward task. Key indicators should be linked to policy objectives and be a result of stakeholder input, rational decision-making and compromise. Since indicator selection process was stakeholder based and questions can still be raised about the choice of indicators and stakeholder motivations.

There is no doubt that indicators should be linked to a town’s priorities, but they should also be linked to issues that the town will have to address in the future. Thus, although the study limits the list of indicators, it also finds that there is a need for new indicators in all sustainable development dimensions. Indicators about public transportation, access to neighbourhood services service such as health, public transportation, health, wellbeing, ecological footprint need to be developed in order to design evidence-based policy solutions in relevant areas while existing indicators should serve as benchmarks for monitoring of town’s progress on regular basis.

References


