

Strategic Sustainable Development Vision of Kurzeme Region

Jekabs Trusins, *Riga Technical University*

Abstract. The goal of the paper is providing better understanding of the agronomic, ecological, economic and social dimensions of Kurzeme Region through a systemic model. The mental structure model of the region enhances the opportunity of better understanding the structure and the process of the regional development possibilities. Vision of the sustainable development, as a whole, can be regarded as one of the scenarios to be examined by using the techniques of the dynamic modeling systems.

Keywords: sustainability, strategy, scenarios, dynamic modeling and regional development

INTRODUCTION

A region is a complex system, whose behavior cannot be understood only intuitively. A region is a part of a larger system (country), and a region is composed of several subsystems (districts, cities, counties). To solve the task of regional development, one needs to consider the use of such approaches as systems analysis and simulation modeling. The Regional Development Strategy is the result of influence of different strategies, objectives and constraints of the higher level (of the country, EU), and this impact defines a model for the regional development.

THE Kurzeme Regional Development Strategy consists of three basic documents:

- 1/ Strategy of development [1];
- 2/ Comprehensive development plan [2];
- 3/ Spatial development plan [3].

The survey shows that the current Kurzeme Region Development Strategy is usually created on the level of mental model targets, which are unclear and poorly aligned with the objectives of the national and European sustainable development.

Overall, the regional planning documents are not readable as the common regional vision in the long term. In fact, the every from the documents in the various and diverse forms reflect the region's vision. As a result it is not clear what the region wants.

One of the major specific features of the Kurzeme Region is the significant difference in the level of development of its separate territories. For example, over the past ten years Ventspils has significantly surpassed in the rate of its development not only other towns and rural areas in the region, but even, in specific indicators, the city of Riga.

The fact of uneven development provides wrong average development indicators for the actual situation in the whole region. At the same time, Ventspils District (rs Ventspils city) is one of the less developed territories in Kurzeme, where GDP per capita constitutes about EUR 1000, that is seven times less than in the district center.

Based on the given information, the development of the major two regional centers in Kurzeme (Liepaja, Ventspils) is not sufficient to reach the development rate in the whole region at the same level as in the Riga Region and to increase the average development indicators as in EU member states.

Other regional centers - Kuldīga, Talsi and Saldus – are trying to survive rather than develop [4]. The development of the regional economy is based on sectors with a limited added value. The spatial planning documents, based on ESDP and CEMAT propositions, [9] define the promotion of the polycentric urban system and rural-urban relationship with the very passive acceptance processes of the existing trends.

In effect, the strategy is the following: 1/ development of the low-density greenfield 2/ creation of the cluster around 'heritage cores' in the small towns 3/ a definitive switch to the car as the European mode of transport'.

CURRENT SITUATION AND PROBLEMS

The Kurzeme Region's area is 136.008 km² with the population of 310,673. Kurzeme is one of the five regions of Latvia. The most important mineral resources are gravel and sand, limestone, clay and peat. The main land uses in the Kurzeme Region are related to forestry and agriculture.

62.4% of the region's population live in urban areas, 37.6% are rural residents. The average population density in the region is 23 inhabitants per square kilometer, which is lower than the national average (35.7). Population of the region is decreasing with every year, during the last five years it has decreased a little faster than in Latvia as a whole. In recent years migration of the population has increased. If this trend continues, the population of the region will decline [3].

The Kurzeme Region has a little modified 350 km long seacoast - beach, bluffs, dunes, with major natural and cultural diversity. Mostly natural factors change the Baltic Sea coast. The Baltic Sea provides opportunities for fishing and fish processing. It provides major transport facilities, the sea and its coast is a very valuable recreational resource for the residents and visitors. Two major ports - Liepaja and Ventspils are based on the Baltic coast of the Kurzeme Region, as well as a number of small ports in the Baltic Sea and the Gulf of Riga.

In 2002 the Kurzeme Region's GDP (in current prices) was LVL 637.3 million, or LVL 2015 per capita. Compared with the previous year, real GDP in the region has fallen. Transport, storage, communications (21.5%), industry (17.0%) and trade (16.6%) are the major sectors with the largest share of added value in the region. The unemployment rate in the region was 7.7% in 2005. The highest unemployment rate was in Kuldīga

and Liepāja Counties. The monthly income of residents is lower than the national average. According to the CSB data, in 2003 the national average monthly income of resident's was LVL 86.88, but in the region of Kurzeme – LVL 68.66. The most important mineral resources are gravel, sand, limestone, clay and peat. Land in the Kurzeme Region is used predominantly for forestry and agriculture. 62.4% of the region's population live in urban areas and 37% of the region's population are rural residents. The average population density in the region is 23 inhabitants per square kilometer, which is lower than the national average (35.7). The average living space per person is 26 m² that is the largest among the regions, but significantly below the European average of 40-50 m².

The international role of the region is based on using of an adequate infrastructure for all modes of transport (sea, road, rail and air transport).

The system of transport and transit in Kurzeme is based on the Latvian east - west railroad and pipeline corridors, one of their endpoints being a port of Kurzeme. Integration of shipping lines in the transport chain allows using the comparative advantages of maritime transport and promotes development of the multi-modal transport.

Quite a good accessibility to the center of the county is provided by: 1/ the smooth spatial urban distribution; 2/ the radial road structure in relation to urban centres. As a result, most of the region's territory is in a half-hour drive from the centre.

The Kurzeme Region has a good potential and the required infrastructure for development of yacht sailing and excellent conditions for including into Baltic Sea maritime network.

The regional settlement network consists of about 15,000 settlements. The average size of the settlements is about 20 citizens.

The amount of villages is about 500, including seasonally occupied villages. The main feature of the villages in Kurzeme is their compact housing location, which distinguishes them from the farm.

The structure of the settlements is based on a very long historical period of the city network development consisting of 15 cities, which together represent more than 60% of the population.

In the future, rural development will be closely linked with the development of rural centers that can grow from rural villages. Nowadays rural areas remain sparsely populated.

The regional agricultural and forest areas form the significant natural and cultural treasure, and their involvement in the spatial development scenarios is a new challenge for rural development and planning development as a whole.

Based on analysis of the regional spatial structures and factors which affect the development, the following problem areas (Fig. 1) have been determined: 1/ the whole Baltic Sea coast and the border area; 2/ the areas with a low level of economic activity; 3/ valleys of big rivers – Venta, Abava - as objects of the natural and landscape heritage conservation; 4/ the region's cities with the increased risk (ecological and industrial) suburban areas; 5/ multifunctional special

protection areas (Slīteres National Park, nature parks, coastal areas - Pape, Bernati, Talsi Hillock, Zvārde forests)

FUNCTIONAL STRUCTURE

The mental structure model of the Kurzeme region (Fig. 2), based on the development strategy [1] proposals and the tree of goals explains main functions of the regional system and the interrelation between these functions. Additionally, this model consists of some quality indices, for example, environmental quality and welfare. This model enhances the opportunity for better understanding of the structure and the process of regional development possibilities.

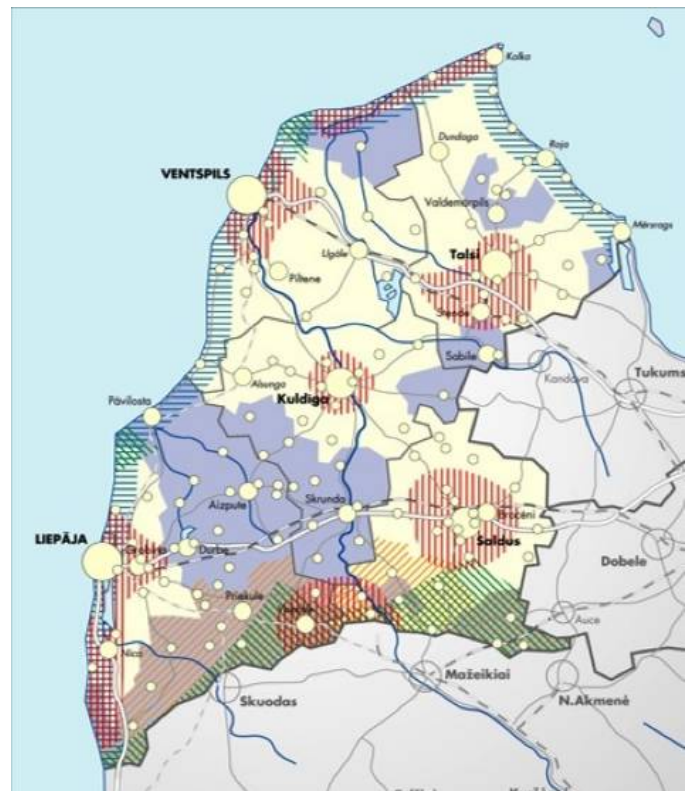


Fig. 1. Development affecting the problem sites [3].

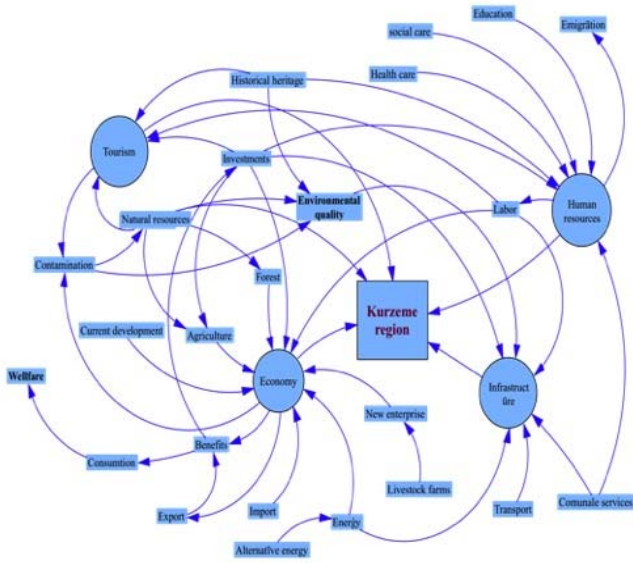


Fig. 2. Mental structure model of the Kurzeme Region. Source: made by Author.

The causal loop diagram (Fig. 3) represents the interactions in the context of regional development and its influence on the regional prosperity and quality of life. The structural analysis of the system is of great significance, since mental models of various kinds can be captured using the proposed methodology.



Fig. 3. Causal loop diagram of regional development [8].

QUALITY OF LIFE

For the social development, a key objective in any place and at any time is the quality of life. Today this postulate is confirmed and adopted by the United Nations, EU and other world regions. The Latvian National Development Plan [5] defines the quality of life as a long-range goal for the future (vision).

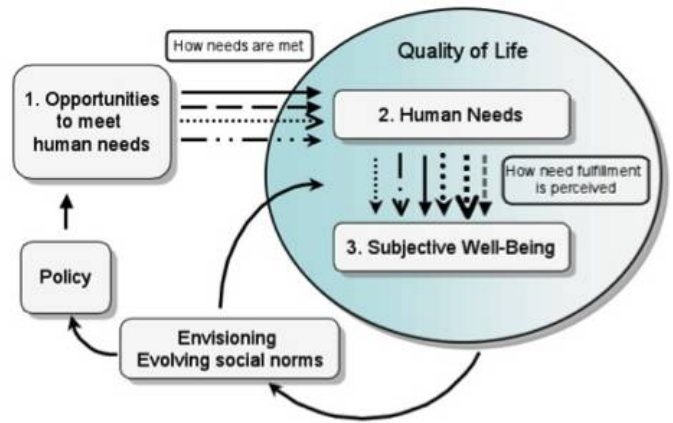


Fig. 4. The quality of life mental operational model [6].

It should be noted that on all levels of strategic documents in Latvia, the quality of life is not consistently supported by the priorities of individual targets and indicators. The indicator system for evaluating the quality of life on different levels (global, regional, national), the interaction and the subjective satisfaction must consider the following options: 1st - Meet people's needs now and in the future by building human, social and natural capital; 2 - People's needs are: survival, reproduction, security, emotions, understanding, participation, recreation, creativity, identity and freedom; 3rd - Subjective well-being (happiness, prosperity and usefulness) for individuals and/or groups. Quality of life (QoL) is represented (Fig. 4.) as a human need for subjective wellbeing..

PRIORITIES OF DEVELOPMENT

The development strategy of the Kurzeme Region (2004) [1] proposes the following priorities:

1. To stimulate and diversify the regional economy and to develop production;
2. To improve the multi-modal transport and infrastructure capacities in the regions;
3. To invest in human resources and develop culture of innovations;
4. To build high quality living environment, preserving natural environment and promoting the development of peripheral areas of the region.

The priorities are based on the socio-economic and SWOT analysis and are pooled into a common vision.

One of the main problems of the Kurzeme Region is the reduction of population during the recent decades. The main cause of this problem is unemployment in cities, towns and rural areas.

The proposed approach can be a good tool for finding solutions of such complex problems (Fig. 5).

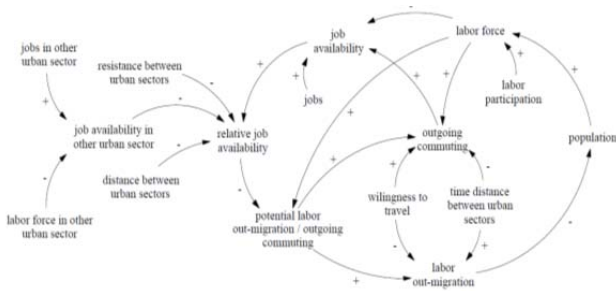


Fig. 5. Urban labour out-migration[11].

SUSTAINABILITY

Based on the traditional linear thinking, many scientists tend to assume that sustainability is a ‘state’ of a social system. Sustainability is neither a state of the system to be increased or decreased, nor a static goal or target to be achieved. Sustainability is an ideal development of a system.

Thus, sustainable development should be considered as evolutionary efforts, which have to be oriented towards processes and structural changes, which are related to innovations in a social evolutionary perspective, rather than equilibrium or defined states of the environment [10].

Sustainable development must not be seen as an unending process defined by fixed goals, nor does the specific means of achieving them, but by an approach to create changes as a primary consequence of sustainable development.

The single or multi-purpose approach to projects needs to be changed to a holistic and integrated approach regarding the inter-disciplinary and regional problems.

To do a good planning, it is essential to find a way to formulate reality as a system, rather than as a set of independent problems. A system is a result of integrity and interaction of its components (Fig. 6). To improve quality of a system, we cannot improve each part separately, but we must to look at interaction of its components as a whole. [7]

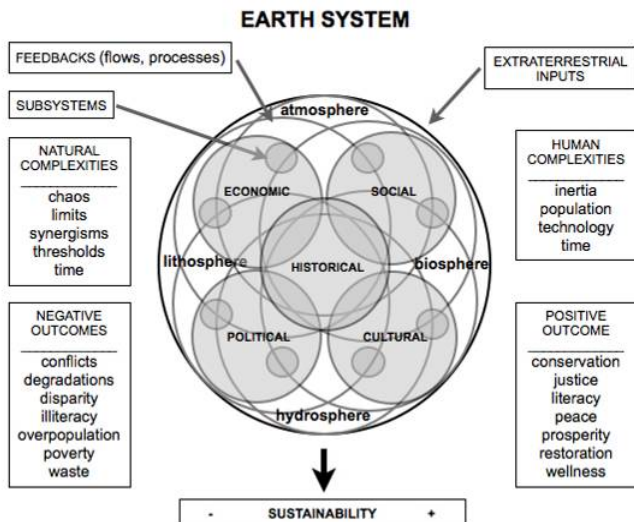


Fig. 6. Global sustainability [12].

Strategies are means that define direction of policies and actions in a system. Different worldviews will result in different values to establish strategies. The variety of values

will eventually lead to different monitoring mechanisms, indicators and evaluations. The indicators of monitoring are filters that select what kind of data we are interested in receiving from our environment and what we would like to eliminate.

SYSTEMS MODELING

A dynamic system model does not predict the future! Its task is to give a valid description of a possible system’s behavior under a given range of conditions (scenarios).

A vision of sustainable development as whole can be regarded as one of the scenarios to be examined by systems dynamic modeling techniques. The primary consequence of sustainable development is that the single or multi-purpose approach to projects needs to be changed to a holistic and integrated approach regarding the inter-disciplinary and regional problems.

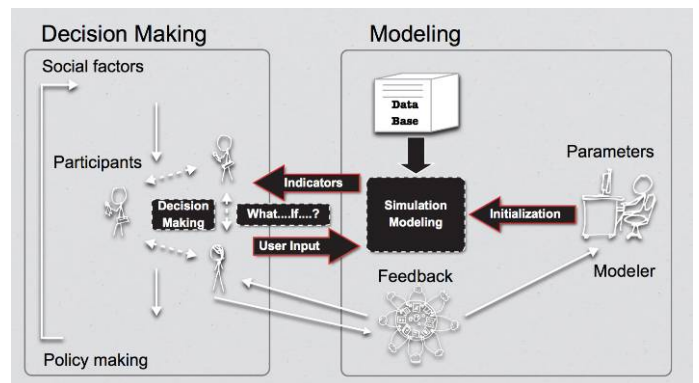


Fig.7. Decision-making process. Source: made by Author.

The results of modeling could be in the form of the relevant information for decision making in the development strategy (Fig. 7).

Possible development scenarios can be developed with the following priorities:

- Livestock large farms organization with the concentration of population.
- Alternative energy (wind, bio) production for export.
- Forestry industry development with high added value.

There can be other possible priorities for approbation with the systems dynamic modeling method.

CONCLUSIONS

The current development strategy of the Kurzeme Region is planned without clear targets and is poorly aligned with the national and European sustainable development objectives. The mental structure model of the Kurzeme Region explains main functions of the regional system and interrelation between these functions. For human social development, a key objective in any place and at any time is the quality of life. One of the main problems of the Kurzeme Region is the reduction of population as a result of unemployment in cities, towns and rural areas. To do a good planning, it is essential to find a way for formulating the reality as a system, rather than as a set of independent problems. Sustainable development

must not be seen as an unending process defined by fixed goals, nor as the specific means of achieving them, but by an approach to create changes in the primary consequence of the sustainable development.

A dynamic model gives a valid description of possible behavior for the system in a given range of conditions (scenarios). Vision of the sustainable development as a whole can be regarded as one of the scenarios to be examined using the techniques of the system dynamics. The organization of large farms, alternative energy production, forestry industry and industry with high added value are possible priorities (scenarios) for sustainable strategic visions of the Kurzeme Region development.

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Jekabs Olgerts Trusins

Education: Dr.habil.arch (1992), Latvian Council of Science; Dr.sc.ing. (1971), Polytechnic Institute, Vladivostok
Current position: Professor, RTU, faculty of Architecture and Urban Planning; Director, Leading researcher, spatial and regional development research Centre.
Memberships in professional societies: Systems Dynamic Society; COST TU-06-02 Management Committee; Latvian Architects Society; Latvian Academy of Architecture.
Publication: 5 books, 100 papers. Last papers:
1/ A conceptual Framework for Dynamic Modeling of Sustainable Development for Local Government in Latvia (2010)
2/ Toward Lifelong Planning Education in Latvia (2007)
3/ The Ecological Reconstruction of the City (2006)

Jēkabs Trušīņš. Kurzemes reģiona ilgtspējīgas attīstības stratēģiskā vīzija.

Projekta mērķis ir izstrādāt ilgtspējīgas attīstības sistēmisko modeli, lai labāk saprastu Kurzemes reģiona agronomiskās, ekoloģiskās, ekonomiskās un sociālās dimensijas. Reģions ir sarežģīta sistēma un kuras uzvedību nav iespējams saprast ar intuīcijas palīdzību. Ir nepieciešamas sistēmanalīzes metodes un sistēmas datormodelēšana. Reģions ir kādas lielākas sistēmas (valsts) sastāvdaļa un savukārt reģiona sastāvā ir vairākas apakšsistēmas (apriņķi, pilsētas, novadi). Reģiona attīstības stratēģiju ietekmē augstākā līmeņa mērķi un ierobežojumi, kurus jāievēro reģiona attīstības modelī. Analīze liecina, ka Kurzemes reģiona attīstības stratēģija tiek plānota mentālo modeļu līmenī bez skaidri noteikta mērķa un ir vāji saskaņota ar valsts un Eiropas ilgtspējīgās attīstības mērķiem. Dzīves kvalitāte nav konsekventi atbalstīta stratēģiskās prioritātēs, mērķos un indikatoros. Viena no galvenām Kurzemes reģiona problēmām ir iedzīvotāju skaita samazināšanās bezdarba rezultātā pilsētās, ciematos un lauksaimniecības rajonos. Labai plānošanai ir būtiski atrast iespēju formulēt realitāti kā sistēmu bet nevis kā atsevišķu problēmu kopumu. Ilgtspējīgu attīstību jāuzskata nevis kā nepārtrauktu procesu, kas nav atkarīgs ne no fiksētiem mērķiem un speciāliem līdzekļiem šo mērķu sasniegšanai, bet kā pieeju radošām, inovatīvām izmaiņām ilgtspējīgas attīstības seku realizācijai. Reģiona mentālais modelis paplašina iespējas labākam priekšstatam par reģiona iespējām un attīstības procesiem. Kurzemes reģiona ilgtspējīgās attīstību iespējams izskatīt kā vienu no scenārijiem, kas jāpārbauda ar sistēmdināmiskās modelēšanas metodēm. Iespējamie scenāriji ar sekojošām attīstības prioritātēm: lopkopības lielsaimniecību (fermu) organizācija ar iedzīvotāju koncentrāciju; alternatīvās enerģijas (vēja, bio) ražošana eksportam; mežsaimniecības attīstība; industrijas attīstība ar augstu pievienoto vērtību.

Екабс Трушиньш. Стратегическое видение устойчивого развития Курземского региона.

Цель проекта – разработать системную модель устойчивого развития для лучшего понимания агрономических, экологических, экономических и социальных измерений Курземского региона. Регион является комплексной, сложной системой, поведение которой невозможно понять только с помощью интуиции. Необходимы методы системного анализа и системное компьютерное моделирование. Регион является частью какой-то большей системы (страны), а в составе региона находятся несколько подсистем (районы, города, уезды). На стратегию развития региона влияют цели и ограничения высшего уровня, которые следует учитывать в модели развития. Анализ показывает, что стратегия развития Курземского региона планируется на уровне ментальных моделей без ясно определенной цели и слабо согласована с целями устойчивого развития Латвии и Европы. Качество жизни не поддерживается последовательно в приоритетах, целях и индикаторах. Одной из главных проблем региона является сокращение количества населения в результате безработицы в городах, селах и в сельском хозяйстве. Для хорошего планирования необходимо найти возможность формулировать реальность как систему, а не как совокупность отдельных проблем. Устойчивое развитие следует рассматривать как непрерывный процесс, который не зависит от фиксированных целей и специальных средств для достижения этих целей и направлен на творческие, инновативные изменения для реализации последствий устойчивого развития. Ментальная структурная модель региона расширяет возможности для лучшего представления о структуре и перспективах процесса развития региона. Видение устойчивого развития Курземского региона можно рассматривать как один из сценариев, который следует проверить с помощью методов системно-динамического моделирования. Возможны сценарии со следующими приоритетами развития: создание больших скотоводческих хозяйств с концентрацией населения; производство альтернативной энергии (ветер, биоэнергия) для экспорта; развитие лесного хозяйства; развитие производства с высокой прибавочной стоимостью.