

Scenario analysis in strategic regional land use planning

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ABSTRACT

A regional land use plan is a long-term strategic planning tool. It is used as a tool for planning strategic development of the region's structure and land use. There is a lot of analytical statistical and spatial data about the past land use trends, but not many systematic tools to analyse future development. The aim of this thesis was to seek ways to improve the knowledge base of the strategic level of regional land use planning.

This thesis consists of a case study, in which it was tested, whether the future foresight methods can be used for drafting the strategic land use plan. In the case study the scenario analysis was examined as a tool and a preliminary study for the regional land use plan of South Savo region and its strategic level. The aim of the case study was to try out, how suitable the scenario analysis is as a basis for strategic land use planning on a regional level.

According to the case study, it seems that future foresight methods, in this case the scenario analysis, brings extra value to strategic land use planning on a regional level. Scenario analysis can support land use planning with its future and solution oriented perspective. It also seems that bringing together people with multidisciplinary backgrounds may bring extra value to both scenario analysis and regional land use planning.

Key words: future foresight, scenario analysis, regional land use plan, strategic planning

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TIIVISTELMÄ

Maakuntakaava on pitkän aikavälin strateginen maankäytön suunnitelma. Siinä tarkastellaan maakunnan aluerakenteen kehittämisen strategisia linjauksia. Suomessa on runsaasti analyttistä tilasto ja paikkatietoa tapahtuneesta kehityksestä, muttei systemaattisia tapoja analysoida alueidenkäytön tulevaisuuden kehityskulkua. Opinnäytetyön tarkoituksena oli etsiä keinoa parantaa maakuntakaavan strategisten kehittämisperiaatemarkintöjen tietopohjaa.

Opinnäytetyössä toteutettiin tapaustutkimus, jossa tarkastellaan, voisiko tulevaisuustutkimuksen menetelmiä hyödyntää strategisen maakuntakaavoituksen laadinnassa. Tutkimuksessa tarkasteltiin skenaarioanalyysin käyttöä apuvälineenä ja yhtenä selvityspohjana Etelä-Savon maakuntakaavan strategisten kehittämisperiaatemarkintöjen suunnittelussa. Opinnäytetyön tavoitteena oli tarkastella, kuinka tulevaisuustutkimuksen menetelmät soveltuvat kaavoituksen selvitykseksi.

Opinnäytetyössä toteutetun tapaustutkimuksen pohjalta vaikuttaa siltä, että tulevaisuustutkimuksen työkalut, tässä tapauksessa skenaariotarkastelu, tuo lisäarvoa maakuntakaavoituksen strategiseen suunnitteluun. Skenaarioanalyysi voi tuoda maakuntakaavoituksen tueksi uutta tulevaisuusorientoitunutta ja ratkaisukeskeistä näkökulmaa. Niin skenaariotarkastelun kuin sen kaavoitukseen soveltamisen onnistumisessa näyttäisi olevan olennaista eri näkökulmia edustavien tahojen osallistaminen yhdessä valmistelutyöhön.

Asiasanat: Tulevaisuustutkimus, skenaarioanalyysi, maakuntakaava, strateginen suunnittelu

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1 INTRODUCTION

1.1 Research topic

The topic of this thesis is 'Scenario analysis on strategic regional land use planning'. The aim of this study is to improve ongoing planning processes at the Regional council of South Savo. The aim is to make use of scenario analysis to improve focusing the strategic objectives of land use on regional land use plans. The future foresight methods have not been used systematically at the Regional council of South Savo.

The main research problem of this thesis is how future research methods can be utilised in regional land use planning. The development task is to research how the outcomes of the future foresight process can be transformed into strategic aims of regional land use plan. The research is based on ongoing scenario analysis and regional land use plan processes at the Regional Council of South Savo.

1.2 Research method

The research method in this thesis is to document a case study and analyse its results. In case studies the main question is to research, what can be learned from the case (Laine et al. 2008, 10). The aim is also to try to solve something, which is previously unknown and new information on it is needed (Laine et al. 2008, 10).

Case studies are used to increase understanding of the case and its circumstances, and results of case studies are intended to be generalized (Laine et al. 2008, 10). In other words, case studies can be used to test things or phenomena, and analyse, how the case could be used or utilized in general. One way to ensure, that a case study is suitable for generalization, is to choose and use the case either on the basis of a theoretical idea or previous information (Laine et al. 2008, 30).

Future foresight methods are widely used especially in the private sector. So far the future foresight methods have not been broadly used in the public sector, especially not in land use planning. The usability of future foresight methods as a basis for regional land use planning is tested. In this case study a future foresight method is used as a preliminary study for the regional land use plan. More specifically, scenario analysis and the usability of its results are tested as a basis for the strategic land use recommendations for the regional land use plan of South Savo.

First the scenario analysis process and its outcomes are documented and analysed. The scenario process and its outcomes are shown in chapter 4. The same procedure is repeated with the land use plan process, which is shown in chapter 5. And finally the conclusions about the case study are in chapter 6.

1.3 Background information about South Savo Region

South Savo is a region of ca. 151 000 inhabitants located in eastern Finland. 25% of its area of 19 130 square kilometres is water area. 27% of its inhabitants are over 65 year old. The proportion of inhabitants over 65 years in the whole country is 20 % (The Regional Council of South Savo 2016).

The capitol of the region is the city of Mikkeli. The second largest city is Savonlinna. Mikkeli has ca. 55 000 inhabitants and Savonlinna ca. 35 000 inhabitants. The town of Pieksämäki has ca. 19 000 inhabitants and other eleven municipalities have between 1 400 and 6 500 inhabitants each (The Regional Council of South Savo 2016).

The business structure in South Savo was in 2014 as follows, primary production 8 % (of employment), processing 21%, trading 11%, private services 26% and public sector 34% (The Regional Council of South Savo 2016). The main differences comparing to the business structure in Finland are in primary production, private services and public sector. The primary production and public sector are larger in South Savo region than

in the country and the private services are smaller employers than elsewhere in Finland.



FIGURE 1. South Savo region is located in the south-eastern part of Finland.

The Ministry of the Environment, the Ministry of Employment and the Economy, the Ministry of Transport and Communications and the Ministry of Agriculture and Forestry have profiled the development of the regional structure and traffic system of Finland together in 2015. According to the study, South Savo has two expertise and services centers, Mikkeli and Savonlinna, surrounded by rural areas with many industries and bio economy. It also belongs to an area to which tourism is especially important (*Ministry of the Environment et al. 2015, 29*).

From the point of view of the ecosystem and nature, South Savo is considered a region which has a good basis for wood and plant production as well as attraction in second home tourism and nature tourism (*Ministry of the Environment et al. 2015, 35*). The most important traffic connections

were examined in the same study and also classified in the Trans-European transport network seen in figure 3.

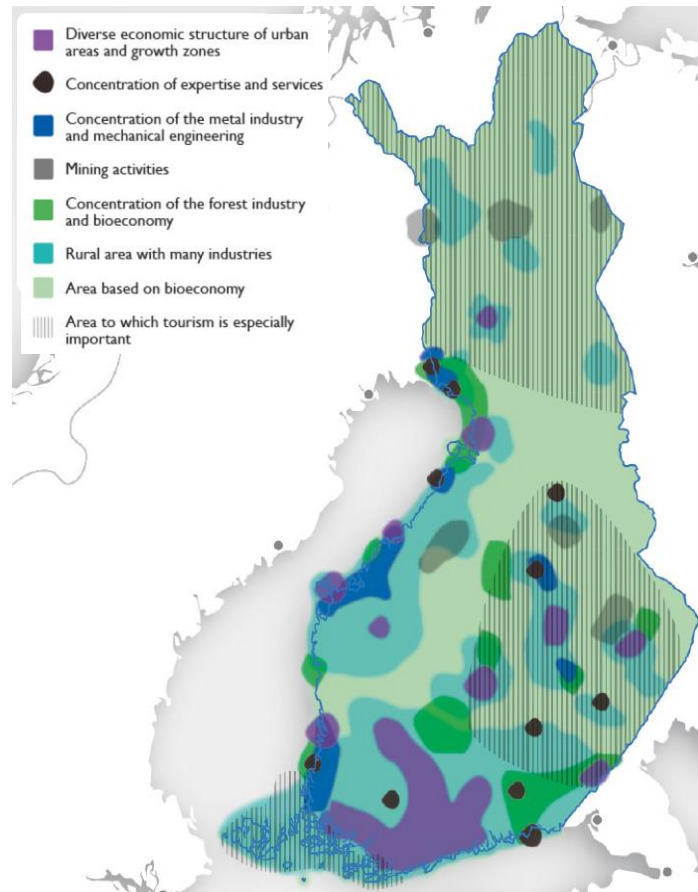


FIGURE 2. The regional structure of industries in Finland in the future according to Development overview of the regional structure and traffic system 2050 report (Ministry of the Environment et al. 2015, 29).

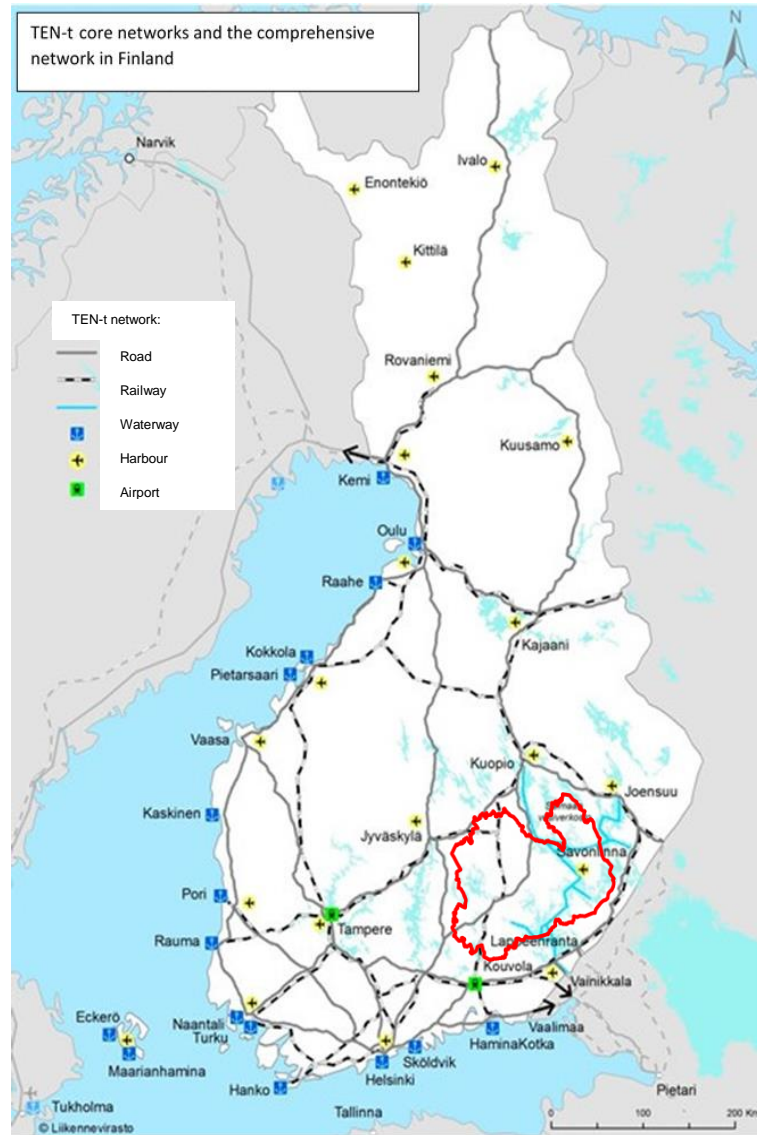


FIGURE 3. Trans-European transport network TEN-T in Finland (Finnish Transport agency, 2016). South Savo is shown in the map with red line.

2 FUTURE FORESIGHT METHODS

2.1 The theoretical background of future foresight

According to Wendell Bell (2009, 73), the goal of future studies is to study possibilities, probabilities and desirabilities of the future: to ascertain, to analyse and to suggest alternative futures. The three key questions of future studies are: what is possible, what is probable and what is desirable. It is essential to study the reason of change, and whether the possible, probable or desired changes can be influenced by human acts (Bell 2009, 73).

There are several general notions used in the future research. The main notions are described in this section according to Kamppinen et al. (2003).

The first term, possible world, means the potential state of affairs or course of events, which can be achieved in principle by an actor's measure or despite them (Kamppinen et al. 2003, 26). The possible world can be understood as a combination of an alternative state of affairs in the observation period and the paths of future i.e. the routes between the states of affairs. The paths of future are chronologically ordered chains of argumentations, which consists of measures and boundary conditions (Kamppinen et al. 2003, 27).

The network of possible worlds is a network that is connected and directed. In the network of possible worlds the certain state of affairs can be reached along multiple different paths of future. The connection means, that inside the possible world every state of affairs is connected to at least one other state of affairs via the paths of future (Kamppinen et al. 2003, 29). This means that different paths forward from a state of affairs signify individual choices, occasions or operations which lead to dissimilar states of affairs. The future studies are characterized by tracing the networks of possible worlds.

2.2 Future foresight methods

Lots of different kinds of future foresight methods are described in both the literature and the internet. Sohail Inayatullah (2013, 36-66) gives a theoretical background for future foresight methods. Many of them can be described with the Six Pillars approach. According to Inayatullah (2013, 45), the pillars are: mapping, anticipation, timing, deepening, creating alternatives and transforming.

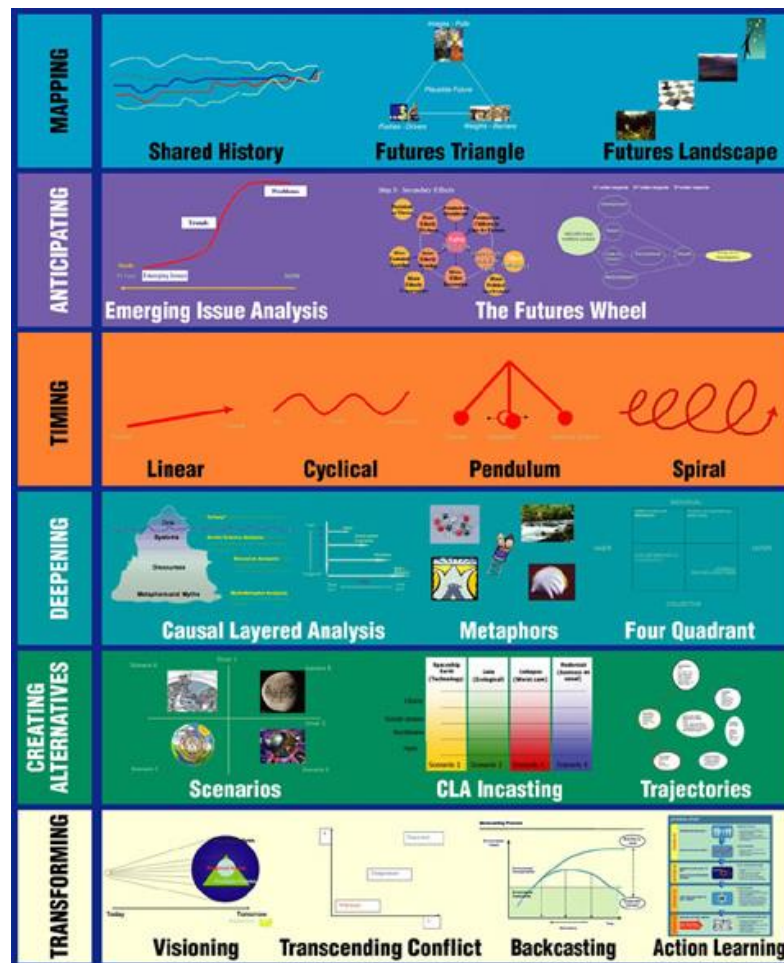


FIGURE 4. Inayatullah's Six Pillars model summarised (Inayatullah & Milojevic 2016).

Inayatullah (2013, 46) explains, that mapping can be described as surveying past, present and future, where we are coming from, where we are at the moment and where we are heading. Anticipation means from the future foresight point of view an investigation of emerging factors from

the weak signals (Inayatullah 2013, 47). In timing the future foresight method is focused on dividing the future path into chronological decisions and chains of events (Inayatullah 2013, 48). Deepening the future means using of a method to widen the understanding of the future (Inayatullah 2013, 52). This is often done by creating alternative future stories (Inayatullah 2013, 54). The sixth pillar is transformation, in which the focus of the future study is headed to the desired future (Inayatullah 2013, 58).

One way of combining these pillars is the scenario processing, which is widely used on future studies. Scenarios are theoretical courses of events, which are compiled in order to pay attention to causal processes and vital phases of them from the decision-making point of view (Kamppinen et al. 2003, 31).

The original meaning of the word scenario describes well the purpose of its use also in the future studies: scenario means originally the director's version of film manuscript (Kuusi et al. 2003, 120). The scenario has a starting and ending situation and the description of future path between them. This description consists of phases which may lead to alternative futures. In other words, the scenario is a consistent story in which the sufficient conditions for the realization of the event are described. (Kuusi et al. 2003, 121)

The scenario answers two questions: how can a hypothetical situation be strictly realized stage by stage, and what kind of alternatives each actor has to prevent, focus or promote the process (Kuusi et al. 2003, 120). The scenario process usually acts as an introduction to strategic decision-making.

2.3 From future studies to strategic decision making

The scenario is a particularly significant network of a possible world which is likely to be implemented (Kuusi et al. 2003, 121). The scenarios can be either particularly desirable or remarkably catastrophic, in other words crucial to be paid respect to.

The scenario has a starting and ending situation, and a description of the future path. It is the consistent narrative which contains sufficient conditions for the course of events in order to achieve the desired goal (Kuusi et al. 2003, 121). An elaborate scenario consists of well-founded causal descriptions of how to move from one state of affairs to another step by step towards the desired goal.

According to Kuusi et al. (2003, 121), there are several benefits of using scenario analysis to support decision making. Scenarios widen the perspective of the decision making, facilitate the perception of causalities and enlighten the consequences of the present decision making in the network of possible world.

Scenario based thinking also underlines the active role of the making future which shapes the traditional thinking that planning and acting are separate functions (Meristö 2003, 235). Analytical data is needed as a basis for decision-making. In the scenario process the actor monitors oneself as a part of the operating environment: what is one's position, what kind of changes might happen in the operating environment, where can one go, how should one act and where does one decide to head (Meristö 2003, 240). At its best the scenario analysis can help the actor to head one's activities towards the desired possible world, or at least to avoid ending in a possible undesirable world.

3 LAND USE PLANNING

3.1 Land use planning in Finland

Land use planning in Finland is controlled in the Land Use and Building Act. The parliament of Finland approved it in 1999 and it entered into force in the year 2000.

According to the Ministry of the Environment (2015) the main purpose of the Land Use and Building Act is to higher the quality living environments in a sustainable way. This is aimed to be done with a wide range and true participation and by an open decision making.

The land use planning system in Finland is based on a hierarchical regime. On the top of the hierarchy are the National land use objectives (Ministry of the Environment 1999). They are guidelines for land use planning in Finland. The National land use objectives are verbal orders and remarks, which must be taken into account in the land use planning.



FIGURE 5. The hierarchical regime of land use planning system in Finland.

The plan includes map marking explanations and also regulations and recommendations. These and a map form a legal land use plan. A report of the land use plan is also written in which the background, objectives and impacts of the plan are explained. (Ministry of the Environment. 1999)

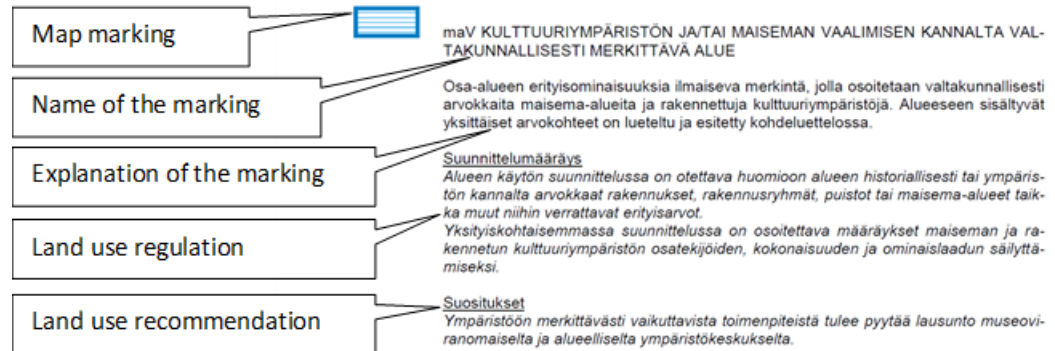


FIGURE 7. An example of the map marking explanation, regulation and recommendation from the Regional land use plan of South Savo 2010.

3.2 Planning at regional level

The planning perspective at regional level is long-term and trans-municipal. The aim of the regional land use planning is to give guidelines for the regional development, regional and community structure and to direct decision-making on issues that are of a regional nature (Ministry of the Environment 2016). Although regional land use plans are legally binding, they are usually presented so that the municipalities have possibilities to some extent to implement it resiliently in more detailed planning.

There are requirements given to guide the regional land use planning in the Land Use and Building Act. According to the law, particular attention needs to be paid to (Ministry of the Environment 2016):

- appropriate regional and community structure of the region,
- ecological sustainability of land use,
- environmentally and economically sustainable arrangement of transport and technical services,

- sustainable use of water and extractable land resources,
- operating conditions for the region's businesses,
- protection of landscape, natural values, and cultural heritage,
- sufficient availability of areas suitable for recreation.

The plan should also be based on adequate background surveys and documents. In addition, the national land use guidelines and the regions own special features are aimed to be combined in regional land use planning (Ministry of the Environment 2016).

According to the Land Use and Building Act, the Land use plans are ordered to be compiled in an open interaction with citizens, associations and authorities. The information about the ongoing planning process is given in the websites, local newspapers and nowadays also in social media. During the planning process the parties concerned are provided with opportunities to give feedback about the drafts of the plan.

The regional land use plan is approved by the elected members of regional council, which is the highest decision-making body of the organization. The parties concerned have an opportunity to appeal the decision, if one feels that one's rights have been violated. Both citizens and certain communities of the area, and authorities have the right to appeal. The appeals are handled first in Administrative Court and after that in the Supreme Administrative Court, if decision from the Administrative Court is also being appealed (Ministry of the Environment 2016).

At the Regional council of South Savo the regional land use planning is carried out in the regional land use unit. The unit consists of the head of the unit, three planners and GIS-assistant. The planning is carried out through teamwork. The three planners have their own specialization fields; (1) community structure including housing and business structure, (2) transport and infrastructure, and (3) sustainable use and conservation of natural and cultural environment.

3.3 The strategic regional planning

In chapter 3.2 is described the role of the regional land use plan purely from the land-use planning point of view. The regional land use plan is from the strategic perspective a part of the regional planning system. It consists of three interrelated planning documents: The regional plan, the regional strategic programme and the regional land use plan (Ministry of employment and the economy 2016). All these three documents are drawn up by the regional council.

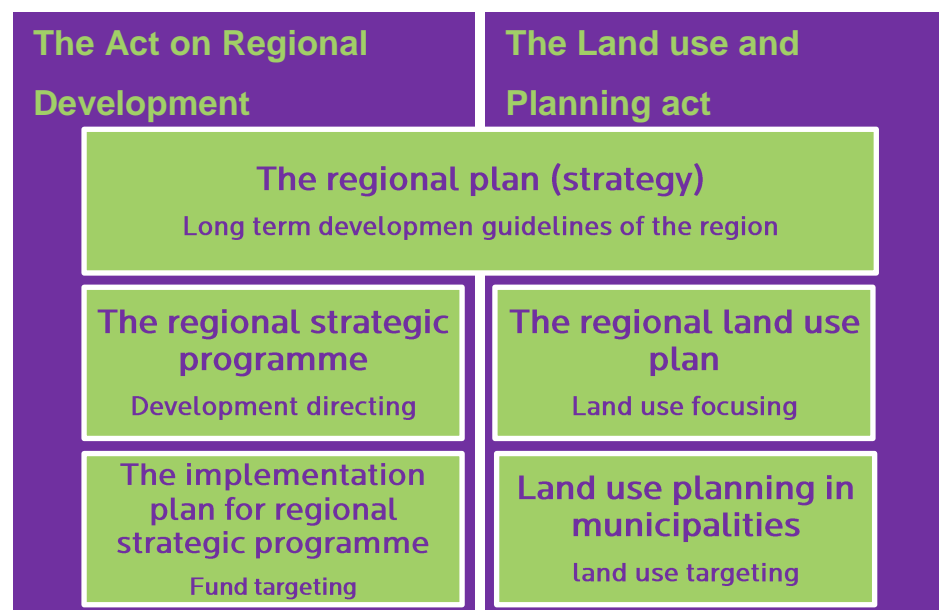


FIGURE 8. Strategic regional planning and its background in legislation.

The aim of the regional plan, which has been lately often called also the regional strategy, is to show the strategic long-term development goals in the region. The regional strategic programme and regional land use plan are aimed for refining and implementing the regional plan.

The main purpose of the regional strategic programme is to refine the strategic goals from the regional plan to phased actions by e.g. redirecting funding for the actions. The regional land use plan is used to create suitable conditions for the desired strategic objectives from the land use point of view. Both of them are used for achieving the desired development in the region (Ministry of employment and the economy 2016).

The fact that the regional planning system is divided into two laws and purposes, functional funding and land use, has affected organizing of the working at regional councils. Nearly all of the regional councils have separate units for the regional development and regional land use planning. This is the case also in the Regional Council of South Savo.

3.4 The strategic level in regional land use plans

The strategic level of the regional land use plan is usually used to show areas or forms of land use, which are crucial from the region's development point of view and are requiring detailed planning. It can also be used to improve the detailed planning on combining different forms of land use. The strategic level in regional land use planning is especially used to guide the more detailed land use planning in the direction which is chosen in the regional plan (Ministry of the Environment. 2002:100).

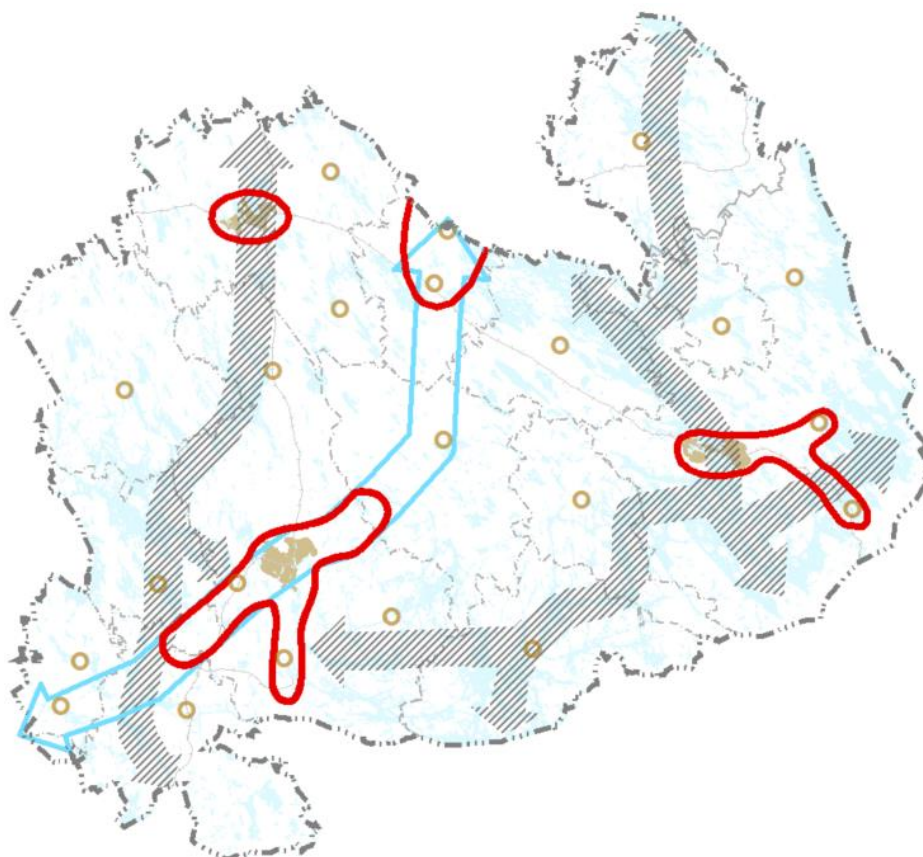


FIGURE 9. Strategic level of the regional land use plan of South Savo approved in 2010.

The strategic level of the regional land use plan is usually shown with the development symbols and planning regulations or recommendations related to them. The strategic development symbols in the map are often more abstract than traditional planning symbols. In some cases the strategic development level consists only of verbal provisions or recommendations (Ministry of the Environment. 2002:100).

The strategic level of the regional land use planning is positioned on top of other planning symbols in the plan. This means that, if for example a nature reserve area or a transport network is located in the area, where the strategic development area is, they must be taken in account in the detailed planning of the area (Ministry of the Environment. 2002:101).

4 THE SCENARIO PROSESS AT THE REGIONAL COUNCIL OF SOUTH SAVO

4.1 Background

The aim of the scenario process in the Regional council of South Savo was to produce a description of the external operating environment of the future and an evaluation on what kind of possibilities and threats it might generate from the perspective of businesses, people, education, welfare services and attractiveness in the region. The observation period was until 2030.

The aim of the process was to create useful material as a basis for decision-making for various actors in South Savo area, not only for the Regional council. So the scenario analysis was carried out from the perspective of the development of the region.

The process was carried out during September-December 2015. Eight workers from the Regional council and three from the Centre for economic development, transport and the environment of South Savo formed the project team for the process. The workers from the Regional Council were from both the regional development and the regional land use planning unit. In addition, two workers from a consulting company were supporting the project team during the process. The consulting company is specialized in scenarios and strategies. Dozens of actors from different sectors participated the process in the workshops and by answering online surveys.

The aim of the scenario process was to improve the vision of regional actors on the future development of the operating environment and its implementations on:

- What kind of drivers of change to the operating environment can play a decisive role and have unexpected effects South Savo in the future?

- How will the actors in the region be able to respond to the changing operating environment and its' needs and opportunities?

4.2 Scenario method and process

The aim of the scenario analysis was to create four possible future stories of the external operating environment and analyse their impacts on South Savo.

The scenario analysis process consisted of the following phases:

- Phase 1; The drivers of change
- Phase 2; The main drives of change and logics of scenarios
- Phase 3; Possible worlds and future paths
- Phase 4; Impacts of scenarios
- Phase 5; Scenarios and contingency plan

The process consisted of workshops, online surveys and work of the project group.

Phase 1; The drivers of change

In the Phase 1 the focus was on the drivers of change. In an online survey the actors of the region were asked the following questions:

- Name (max. 10) the most important factors of the external operating environment which have impact or may have impact on South Savo, but of which the actors of South Savo have not got possibilities to influence.
- Estimate both the effectiveness and uncertainty of each factors on a scale of 1 to 10.

The results of the online survey were examined in the project group and the verbal answers needed some harmonization and grouping. There were also different views on the uncertainties and/or effectiveness of some of the factors in the answers and project group needed to evaluate the

placement of the values. The harmonized results of the online survey is shown in the figure below.

The factors (drivers of change) that got number 5 or less as their uncertainties were considered as trends or otherwise “certain” drivers of change. The nearer the uncertainty and effectiveness values were to the number 10, the more alternative effects the driver was believed to have to South Savo region.

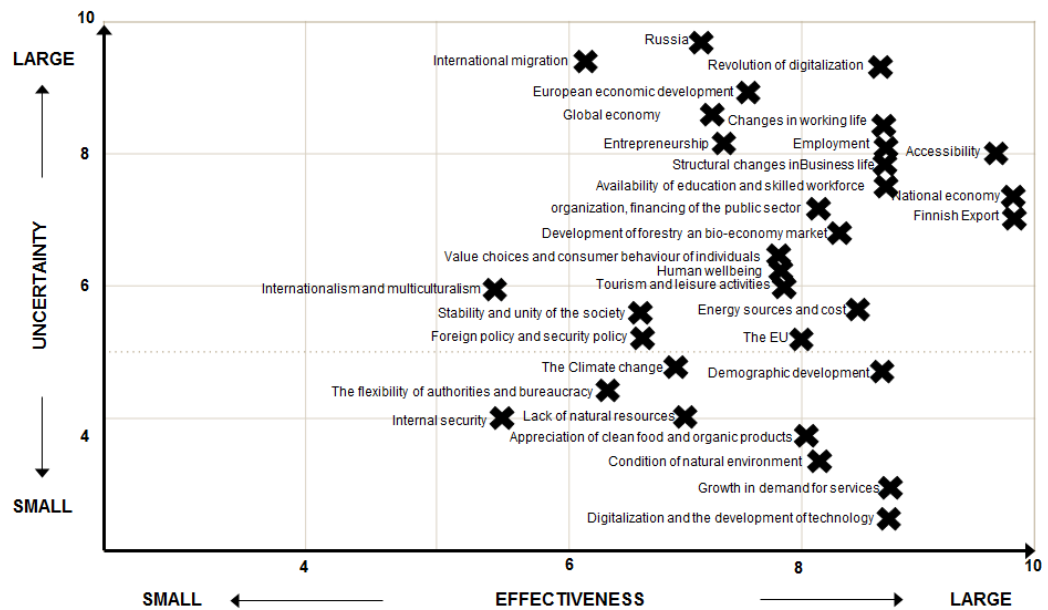


FIGURE 10. The drivers of change according to the answers of the online survey.

Phase 2; The main drives of change and the logics of scenarios

The second phase of the scenario process included a work shop and project group working. The aim of the second phase was to analyse and test the drivers of change, which were found in the phase 1. The same heterogeneous group of actors, which answered to the questionnaire in the phase 1, were invited to the workshop. The actors were divided into small groups which were led by the members of the project group.

The first part of the work shop was to analyse the drivers of change. That was made by discussing in the small groups about each driver and then try to reflect on what could be the extreme outcomes of each driver in 2030.

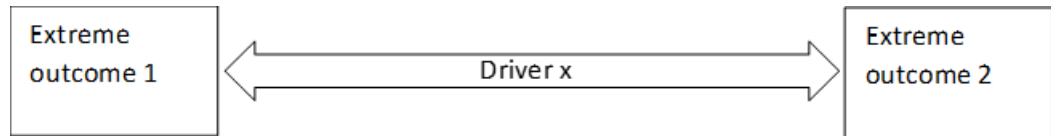


FIGURE 11. The assignment for the first part of the workshop.

The other task in the workshop was to test the drivers of change and their extreme outcomes. The idea was to find in small group discussions two drivers of change which could function as the two main drivers for the whole scenario analysis.

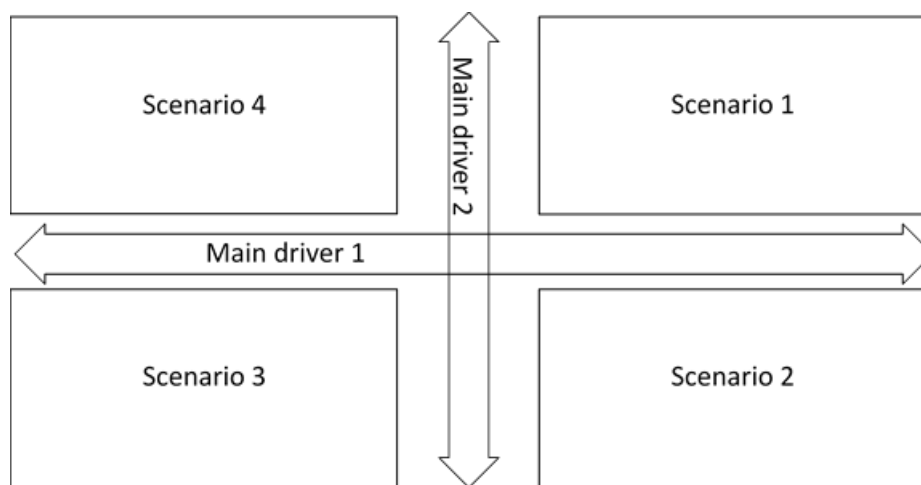


FIGURE 12. The structure of the scenario analysis.

The drivers of change, which were chosen as the main drivers of the scenario analysis were (1) availability of resources and (2) International networks and decision-making.

The extreme outcomes for the main driver 1 were 'limited resources in the world' and 'great scarcity of resources in the world'. The idea was that, the natural resources of the world might be reduced in both outcomes, but in the first outcome the situation might be better than in the latter outcome. For example new innovations might help the situation in the first outcome whereas in the latter outcome the amount of the natural resources might decrease rapidly and there might for example be a growing shortage of clean water in the world.

The extreme outcomes for the main driver 2 were 'introversion' and 'extroversion'. In the first outcome the geopolitical instability and military unrest might increase, there might be new regional cooperation structures instead of global trade structures, countries might get into competing blocs, nationalism might rise and information society might face limits and restrictions. In the latter outcome the whole co-operation structures might strengthen and also completely new networks might be created, cross-border issues might get managed by applying extensive cooperation, information might move openly and networks and value chains might grow, become stronger and more complex.

Phase 3; Possible worlds and future paths

The target in phase three was to create the possible worlds i.e. to create end situations to the four scenarios. Another target was to construct future paths for the possible worlds i.e. to divide time between the current situation and the final situation into logical chains of events. Finally the third target was to try to form names and short synopsis for the four scenarios.

The phase 3 started again in the workshop and continued with the work of the project group. In the workshop the actors were divided into four groups. Each group started to work now with different scenarios. E.g. in the scenario group 3 the participants started to create an end situation in which the main drivers are limited resources and introvert networks and decision-making.

All the four scenario groups considered on what might be the end situation of the drivers of change, which were identified in the phase 1.

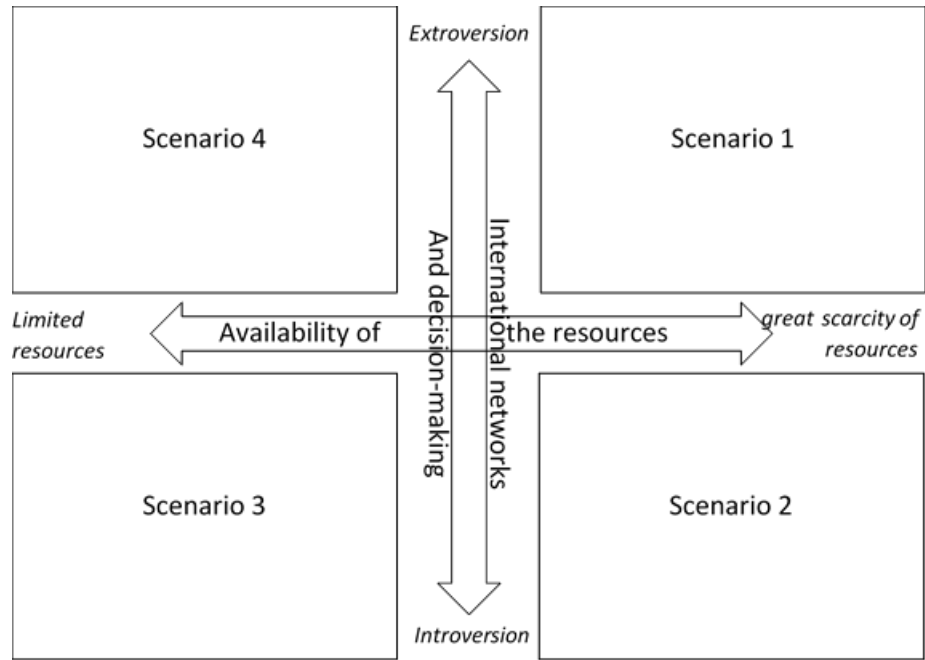


FIGURE 13. The starting point for the workshop in phase 3.

The second task in each scenario group in the workshop was to create a future path for the scenarios. The idea was to divide the future into logical chain of events so that the end situation would match the scenario draft from the first part of the workshop. The future path from the scenario group 3 is shown in the figure below.

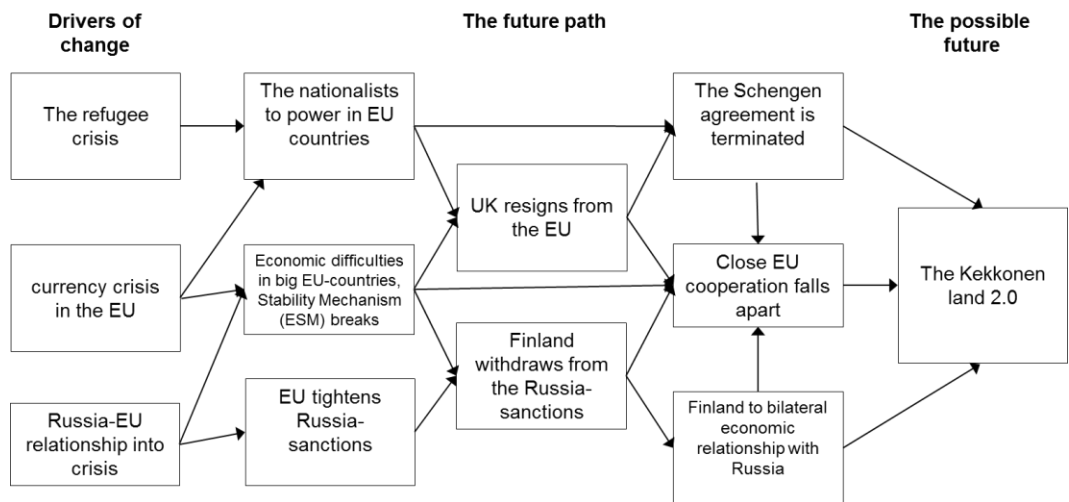


FIGURE 14. The future path from the workshop to scenario 3.

The project group deepened the material from the workshop and created the big picture of each of the four scenarios. Names were also invented for them.

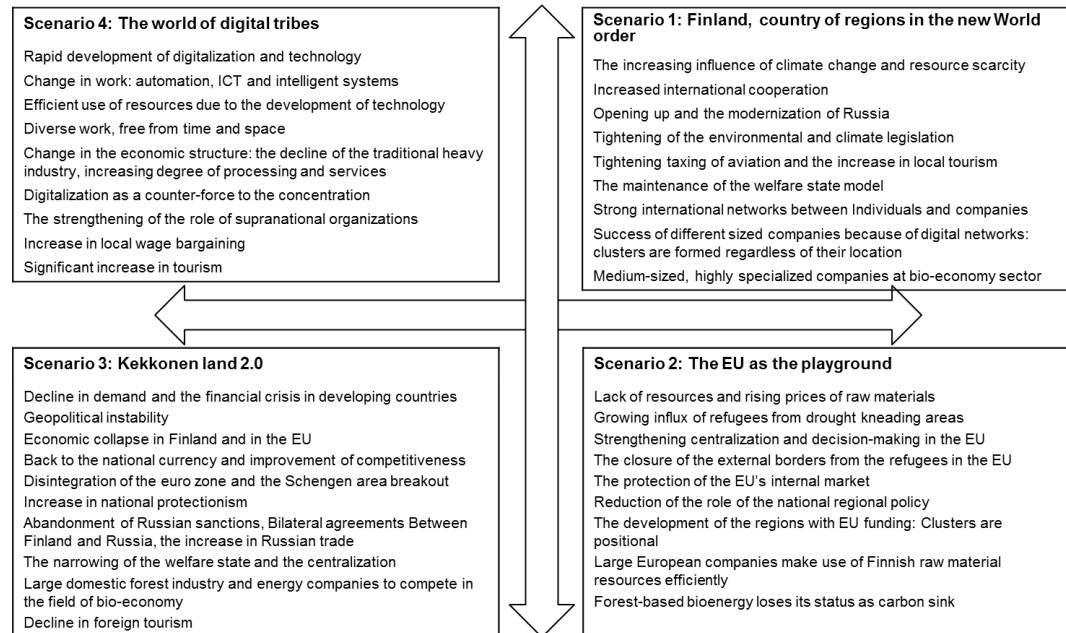


FIGURE 15. The result of phase 3.

Phase 4; Impacts of scenarios

The target in the fourth phase was to deepen the scenario stories and then analyse what kind of risks and possibilities South Savo region might face on each scenarios. The scenarios were now considered at the first time in the process from the local point of view. Once again there were a workshop held and its work continued with the work of the project group.

The result of this phase were the deepened scenario stories and analysis of the risks and possibilities to South Savo in each scenario. The project group also checked in this phase that the scenarios were logical as themselves and that they varied between each other consistently.

Phase 5; Scenarios and contingency plan

In the final phase the project group finalized the scenarios and constructed the contingency plan on the basis of the scenarios. The largest task in this phase was to create the contingency plan. The analysis of the risks and

possibilities from phase four were the basis of this consideration. As a result of this, a list of tasks was created with which to be prepared for each scenario. There were also formed a list of necessary actions which needs to be taken care of regardless of which scenario seem to be realized.

4.3 The scenarios of South Savo

The scenarios of South Savo 2030 are descriptions of possible futures of the region. The aim of the process was not to predict the most likely future, but to develop the strategic thinking in decision-making. The purpose was to guide the actors to think in more comprehensive and coherent way about alternative trends and thereby improve the conditions to understand the current phenomena, enhance decision-making and responsiveness, as well as to increase the readiness for change.

The aim was not to choose one scenario among others or to put scenarios into order according to probability or preference, but to look at the scenarios as a package. The future is a combination of different scenarios.

On the basis of these scenarios are found necessary measures in South Savo, which should be made regardless of the scenario, or a combination of the future. Scenarios in addition to governmental measures which are essential in case of realization of each scenario has created a contingency plan. Scenario-specific contingency plans give an indication of what South Savo will make or stress, if the world is changing like a certain scenario.

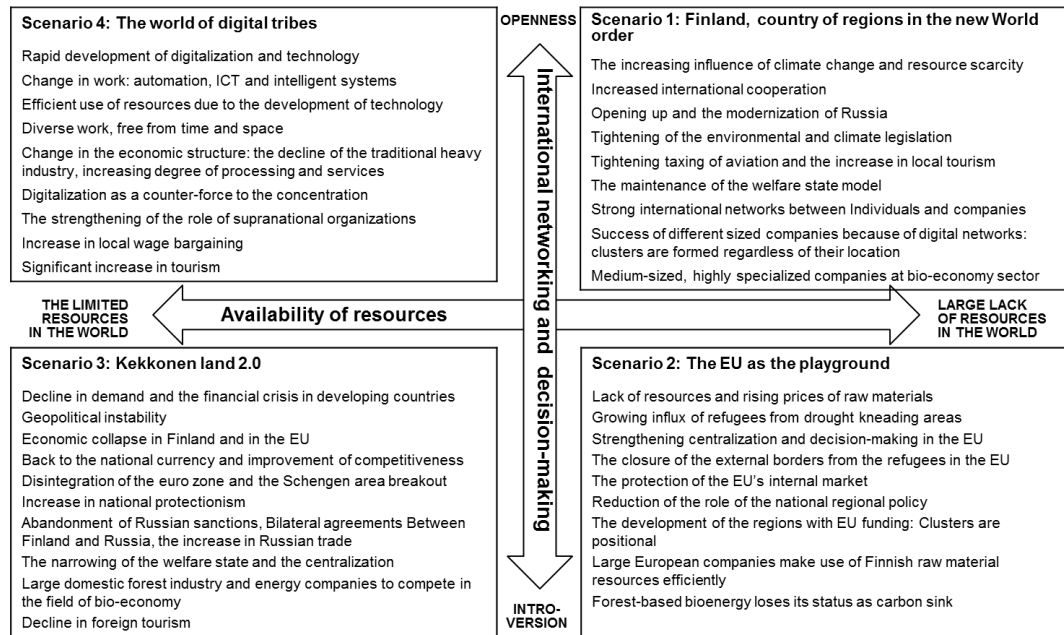


FIGURE 16. The big picture of South Savo scenario 2030.

The scenarios were summarized as follows:

Scenario 1: Finland, country of regions in the new World order

Open international networking and climate policy. Finnish welfare society and regional policy to be maintained at any price.

- *Climate change progresses faster than expected. The states have to start cooperation, for example, in the treatment of the refugee crisis, eradicating poverty and solving problems in conflict zones.*
- *The resource scarcity resulting from the rising use of resources and acceleration of climate change leads to a tightening of environmental and climate legislation. Regulation is based on international cooperation and also extends to the national level.*
- *As part of climate change prevention the air transport taxation is tightened. Due to both the rise of the ticket prices and more environmental friendly consumer choices in tourism to nearby location grows.*
- *Russia opens up to the world after economically difficult years and participates in the international debate, co-operation and free market.*

- *Companies and individuals network globally due to strengthening of international agreements and technological development. The networking opens new business opportunities for the companies despite of their size of location.*
- *Medium-sized and specialized companies work in the field of bio-economy. Agility and flexibility are their competitive advantages.*
- *The structures of the Nordic welfare society are kept operational despite of aging of population. It is financed by raising taxes and making the services more efficient.*
- *Finland is kept widely inhabited and national regional policy gets more effective. Among other things, rail connections are widened and higher education is provided around Finland. Regional autonomous regions are increasing their role in decision-making.*

Scenario 2: The EU as the playground

Large companies and regional competence clusters survive in toughening competition, where blocs arise. The EU defines Finland's regional and energy policy.

- *Prices rise due to resource scarcity of raw materials. Lack of water causes the growing refugee issues in growing parts of the Earth. Refugee problem causes threat of conflicts. However, the EU is capable of forming a strong coherent policy and closes its external borders.*
- *The EU integration process strengthens and member states own role on decision-making reduces. The aim of this is to speed up decision-making and to improve the competitiveness of the EU area. The EU plays more prominent role in also on global issues alongside China and the USA.*
- *Large European companies benefit from the situation and make use of Finnish raw material resources efficiently. Forest-based bioenergy loses its status as an emission friendly energy source.*
- *EU control reduces the role of the national regional policy. Areas are developed via EU-funding on the basis of their specific features. For*

example, agricultural subsidies are directed mainly to Eastern Europe and the Northern Dimension subsidies to Lapland.

- *Site-specific clusters and centers of expertise are created with EU level investment and regional development funding.*
- *The confrontation between Russia and EU grows because of economic sanctions and the closure of borders. The number of Russian tourists decrease.*
- *In Finland, mainly in the major tourist centers attract European and Asian tourists. Small and non-specialized operators have difficulties to attract tourists.*

Scenario 3: Kekkonen land 2.0

Nation states turn inward in an unstable situation. In Finland, the Nordic welfare society and regional development is compromised.

- *Indebtedness, financial problems and competitiveness of the EU Member States cannot be improved. The financial crisis in the developing countries is a serious setback to economic development. The European economy collapses.*
- *Global polarization increases and geopolitical instability occurs in the surrounding areas. The Schengen agreement is terminated.*
- *The EU weakens as a result of economic collapse. Relationships between member states weakens and the euro zone disintegrates. Many countries suffer from currency crisis and are trying to adapt its own internal economy to the new situation. Recession deepens in Finland.*
- *Weak economic growth reduces the demand for raw materials and natural resources.*
- *National protectionism increases dramatically. Nations seek ways to recover from the breakdown of the euro area and to protect their own economies, for example by using customs duties, tariffs and subsidies.*

- *Finland withdraws from the EU's sanctions against Russia and increase bilateral trade with Russia.*
- *Finland's slow economic development weakens the welfare society and centralization continues in public sector. The state cannot afford to allocate resources to regional policy, which leads to deterioration of services in the rural areas outside growth centers. Working opportunities occur mainly in the larger cities, where particularly young people move because of career opportunities.*
- *Large domestic forest industry and energy companies compete for resources in the bio-economy. Large companies benefit from the experience and economy of scale. Export is struggling, however, due to the disintegration of the euro area and growing national protectionism.*
- *Due to the weak economic situation, national protectionism and the end of the Schengen area, tourism reduces from other sources than Russia.*

Scenario 4: The world of digital tribes

Due to the digital leap business, society and individuals' mindsets and behavior is changing. Competence, continuous innovation and product development creates significant savings and additional resources.

- *Technological developments and the Digital Revolution has been faster than was thought. Automation, robotics and intelligent devices and systems are part of everyday life.*
- *Technological development enables more efficient use of natural resources.*
- *The number of tourists increases rapidly, particularly from Asian countries. Technology plays a big role in tourism, booking systems, transportation and assessment of tourist destinations.*
- *The role of transnational organizations strengthens and the role of States narrows. Transnational networks generate new forms of communities, but some of them uses their position in criminal activities.*

- *Regulation lowers and practices are modified to reflect the new world order.*
- *The economic structure changes dramatically. Completely new business models comes into the market and industry boundaries become blurred. The service business increases its relative share of market.*
- *People work and train themselves, regardless of time and place. The work gets more global and networked. Work and leisure time mixes and human beings are constantly linked to each of them.*
- *The networked work can be done everywhere, also outside urban centers, which forms a counter-force to the centralization.*
- *People appreciate well-being and their health. Although work and leisure time are mixed, comprehensive well-being increases. The technology used, for example for self-measurement and remote health monitoring. The health sector takes advantage of digital opportunities.*

The contingency plan was also made to proactively anticipate actions towards the desired possible world, or at least to avoid ending in an undesirable possible world. As a result of this, a list of tasks was created with which to be prepared for each scenario. The contingency plan is shown in the figure next page. There were also formed a list of necessary actions which needs to be taken care of regardless of which scenario seem to be realized. They were formed as follows:

The necessary measures which do not depend on individual scenarios

- We strengthen the identity and uniform reputation work of the area.
- We focus on the development of urban areas but also to the vitality of municipal centers.
- Bench learning: we get networked, look for apply best practices from other regions and also internationally.
- We make use of new ways of working, experiment culture, digitalisation and social innovation in business and in the development and production of public services.

- We create a working platform for the establishment and growth of companies in South Savo. We focus on entrepreneurial education.
- We take into account the economic structure and the change of careers in education. We support multi-scale and flexible solutions in the labour and housing regionally and in various networks.
- We develop educational structures so that we pay attention to the needs of both the business community and the students.
- We improve the accessibility of South Savo. We will ensure that the infrastructure enables the utilization of raw materials and natural values, and that the region has competitive data connections.
- We will increase in a controlled immigration from Finland and abroad, and employ them quickly.

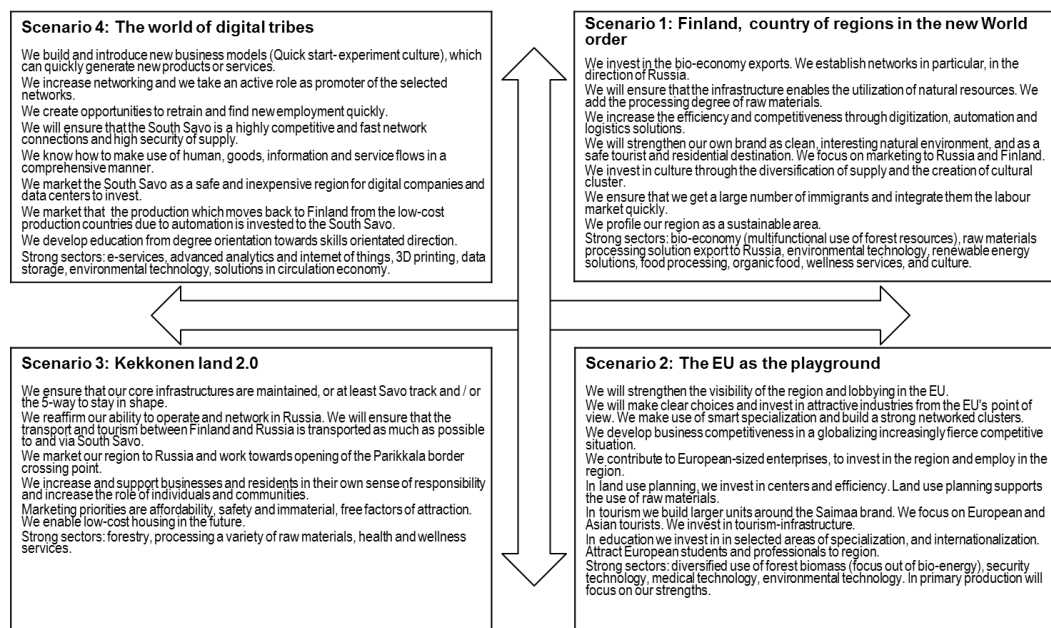


FIGURE 17. The contingency plan.

5 THE SCENARIO AS A PART OF THE REGIONAL LAND USE PLANNING

5.1 Background

The regional land use plan of South Savo was approved by the ministry of environment in 2010. Some of its background studies were made around 2005. The elected members of the regional council decided to start the update process of the regional land use plan in 2014. The process was started with group discussions on how to update the plan from 2010.

The result of discussions was, that, among some other details of the plan, the strategic level of the regional land use plan, development symbols and planning recommendations related to them, were in need to be updated.

5.2 Planning method and process

The aim of the process was to use the results of the scenario process, described in chapter 4, as base material for the updating of the strategic development symbols of the regional land use plan of South Savo. The process was carried out in the first half of the year 2016, straight after the scenario process was finished.

At first the scenario material was analysed from the point of view of land use by the workers at the regional planning unit of the regional council. The scenario and its contingency plan was summarized as follows from the point of view of land use:

- how does the attractiveness of the region develop,
- how does the urban areas develop,
- how business friendly is the operation environment,
- how does environmental condition develop,
- how does the internal and external accessibility of the region develop, and
- does the region have competitive communication connections.

These were also the starting points of view in the workshops. In addition there were spatial analysis produced e.g. about demographic changes and the structure of tourism. There were several workshops held to process these land use perspectives forward. The workshops were part of the regional strategy process that was going on at the same time. So the land use planning was discussed in the workshops together with other development points of view. This mixed processing was a continuation of the scenario process. That way the results of the workshops were richer on how the land use should be developed at the region so that it could support the overall development of the region most effectively.

As a result of this participatory cooperation the regional planning unit drafted the first version of the strategic development symbols of the regional land use plan. They consist of strategic map and planning recommendations related to them.

During the summer 2016 the parties concerned were provided with opportunities to give feedback about the drafts of the plan. The feedback considering the strategic map and planning recommendation related to them was positive and only minor changes were suggested to be done to them.

In the following chapter is presented the result of this process. At the moment the regional land use plan is been finished for the approval of the Regional Council.

5.3 The strategic level of the regional land use plan of South Savo

The strategic level of the regional plan consists of three contents:

- the attractiveness and development of urban areas and the internal accessibility of the region,
- the development of the external accessibility and transport services of the region, and
- the development of international tourism.

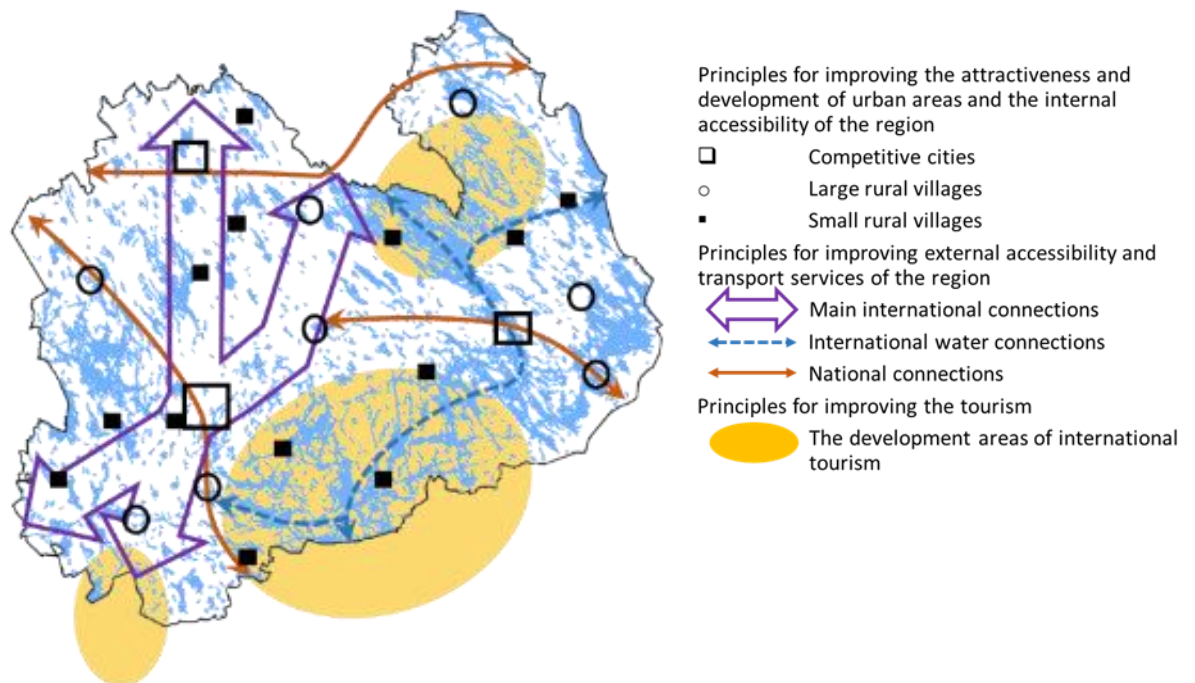


FIGURE 18. The strategic land use development symbols of the regional land use plan of South Savo.

The first part of the recommendations consists of the actions that are needed to be done to develop urban areas of the region more interesting for inhabitants and businesses to invest in.

Traditionally the urban areas have been classified into different classes by comparing their size and weight in public sector decision-making. The structures of the public sector are changing in Finland: municipalities have been joining together and at the moment public social and health sector is under reformation. According to the discussions in the workshops, these changes are also changing the role of many smaller urban areas: several rural villages have lost their role as a center of the municipality. When the identity and role for the villages is no longer linked to the administrative status, it has to be formed from other sources.

The urban areas in South Savo can be seen in different roles depending on what issues are examined. The workshop discussions dealt with the roles of the urban areas are summarized in the table below. Also the

division of the urban areas to three groups, seen in the table, was the result of the workshop.

TABLE 1. Roles of the urban areas

	<i>cities</i>	<i>large rural villages</i>	<i>small rural villages</i>
<i>housing</i>	<i>diverse urban living environment</i>	<i>mixed housing and free-time residences</i>	<i>rural village housing</i>
<i>public and private services</i>	<i>regional wide range service centers</i>	<i>rural service centers</i>	<i>rural local services</i>
<i>industry</i>	<i>Diverse business structure</i>	<i>specialized business structure</i>	<i>small scale business structure</i>
<i>education</i>	<i>higher education and innovation clusters</i>	<i>basic education (comprehensive school) and general upper secondary education</i>	<i>first grades of basic education</i>
<i>tourism</i>	<i>urban tourist destinations</i>	<i>local tourist destinations</i>	<i>tourism can be part of the role</i>
<i>accessibility</i>	<i>nodes of external accessibility of the region with several modes of transport</i>	<i>nodes of internal accessibility of the region with bus transport</i>	<i>“terminus”, difficulties to maintain a profitable public transport, new solutions needed</i>

In the land use point of view this can be seen as a need for revitalization of centers, proactive planning, efficient public transport and pedestrian traffic, and competitive telecommunications connections. The land use and building act gives opportunities to use land use planning tools rather freely. According to the workshop discussions, it seems that planning tools are used rather similarly regardless of their size or their development

needs. That is the reason why the key point of the recommendation is to encourage planners and decision makers to pay special attention to usage of suitable planning methods, to keep them update, active land use policy of municipalities and their ability to promote investments as well as to the special needs of the area.

The urban areas were classified into three classes: cities, large rural villages and small rural villages. The main attention is paid to the role and profile of different size and type of urban areas in the developing of both industry, housing and leisure-time.

The classification of the urban areas includes their different kind of roles as nodes of accessibility in the region. In addition, the development of broadband connections in the development recommendations has been brought as one of the key development goal in urban areas. Although Finland is one of the most advanced country in the use of information technology, there still exists significant gaps in the coverage of fixed telecommunications connections. Investing in fixed broadband connections in the urban areas creates opportunities on expanding connections later more widely to the nearby countryside and gradually more broadly.

The key issue in the development recommendations was that the development of each urban area ought to be implemented using land-use planning tools suitable for their conditions and role. This way the land-use planning promotes as its best the land use policy, construction, reformation and other development actions at the city or village. The usage of the right kind of planning tools and resources supports the development of each urban area.

Development symbols and recommendations created for the urban areas are as follows:

Principles for improving the attractiveness and development of urban areas and the internal accessibility of the region

The development recommendation

In the development of urban areas, special attention should be paid to the role of the urban area, as well as to the potential for making the area more competitive and attractive as a part of regional service and community structure.

*In the development of **competitive cities** special attention should be paid to*

- *their role as a part of national service and community structure*
- *the diversity of their economic structure*
- *the development of the diverse possibilities of residential areas and green environments*
- *high-grade transport services and high-speed communication connections as well as*
- *operating as the node of the external accessibility of the region.*

*In the development of **large rural villages** special attention should be paid to*

- *their role as a supplement of regional service and community structure*
- *specialization of their economic structure*
- *overlapping of the housing and leisure-time housing*
- *operative transport services to the accessibility nodes of the region, as well as*
- *the development of wired communication connections.*

*In the development of **small rural villages** special attention should be paid to*

- *role as a local service center for the nearby rural area and leisure-time housing*
- *specialization that supports maintenance of services*
- *promoting the building of high speed communication connections as well as*
- *developing the new transportation services for sparsely populated areas.*

It is recommended to use land use planning methods which are appropriate for each city or village in order to promote land use policy, building and other development.

It is also recommended to pay special attention to the usage of suitable planning methods, to keep them update, active land use policy of municipalities and their ability to promote investments as well as to the special needs of the area.

In addition, functionality, comfortness and economy of the urban area should be developed by making use of and defragment the existing community structure in the more detailed land use planning. Detailed planning should aim to reducing need for transport, improving traffic safety and promoting the conditions of public transport and non-motorized traffic.

The second part of the strategic recommendations of the Regional land use plan of South Savo consists of key points of developing the external accessibility from the region to elsewhere in Finland and to abroad. Both road, rail, air and water transport were considered. The development

needs were considered both from passenger transport and cargo point of view.

According to the workshops, there were two major concerns on accessibility of the region: how can the public transport be organized effectively in the sparsely populated parts of the region and secondly whether the region can be reached easily enough from other parts of Finland and from abroad. The first issue is important from the perspective of smooth everyday life and the second is as significant in terms of the functioning business sector as well as attractiveness as an investment target.

The internal accessibility was included in the recommendations concerning the urban areas above, as well as the development of telecommunications. The external accessibility was given its own recommendations and symbols, although the recommendations are much related to the development of urban areas.

The main principle of these development symbols of external accessibility is that they should not be seen just as traffic corridors, but development corridors, where well-functioning accessibility generates conditions where new business opportunities may develop. On the other hand, land use planning and construction relating to the transport infrastructure should be implemented without disturbing the fluent flow and safety of traffic.

On the basis of the scenario process the main conclusion relating to external accessibility was to ensure well-functioning connections to Helsinki and to St. Petersburg. Both of these are the nearest large market areas for the production of the region. Both are also gateways to even larger markets. The main connections to Russia from Finland go via St. Petersburg. Helsinki on the other hand serves as the southern gateway to abroad because of its ports and the international airport. And from the tourism point of view these two cities serves as a gateway to the tourist attractions of South Savo region.

South Savo is not coherent from the external accessibility point of view. External accessibility of the central and western part of South Savo is linked to highway 5 and the main railway, called the railway of Savo (Savonrata in Finnish) and their sub connections. The external accessibility of the southern and eastern part of South Savo is more complex, especially in the Savonlinna area.

The accessibility of Savonlinna is not as competitive as the accessibility of Mikkeli in the western part of South Savo. Savonlinna is not located along the national main transport routes in the same way as Mikkeli and Pieksämäki are. Its location is in an area with a lot of water bodies and the national main transport routes have been built to avoid them. According to the workshops, local air services are needed also in the future in Savonlinna to improve its accessibility. Elsewhere in the region accessibility to the Helsinki airport is so fluent, that local airport services are not necessary.

The recommendations concerning the external accessibility were divided into three parts: main international connections, international water connections and national connections.

The main international connections of the region are the highway 5 and the main railway, called the railway of Savo (Savon rata in Finnish). These connections serve the accessibility in the whole Eastern Finland and they are part of the Trans-European comprehensive TEN-t Network. The comprehensive network means that connections belonging to this group are in the second highest class in the EU traffic network hierarchy. The red thread in the recommendation is to draw attention to an integrated land use and transport coordination, as well as the development of transport services.

The connections to the community structure together with different land use, such as industry, commercial services, logistics or housing is recommended to be planned as a part of comprehensive strategic planning. Naturally the transport infrastructure needs modernization, but

from the perspective of the region, it is more essential to develop the transport services on the corridor and exploit them in the land use.

The recommendations for the international water connections are comparable to the recommendations related to the main international connections which were explained above. The waterway access from Lake Saimaa to the Baltic Sea is also a part of the Trans-European TEN-t Core Network, the only part of the core network in Eastern Finland. The core network means that connections belonging to this group are in the highest class in the EU traffic network hierarchy and e.g. in the first priority to get EU-funding its development.

In the workshops it was seen that the waterway has not been sufficiently exploited in the industrial transport. It was also seen that the exploitation of water transport in industry could be promoted by taking its possibilities into account more integrated in land use planning. There is a need for developing port operations and connections with other forms of transport. This development requires integrated planning of land use and transport.

The actual waterway is implemented in some places labyrinthine lake area where also the endangered Saimaa ringed seal lives. There is need to improve the safety of the waterway and this fact is also taken into account in the recommendations.

The third part of the recommendations concerning external accessibility of South Savo contains sub connections to the international connections, seen in figure above, with different modes of transport. The idea of these recommendations is to ensure that the accessibility to and from international corridors is as smooth as possible from and to every part of the region.

As mentioned earlier, highway 5, the railway of Savo and the Saimaa waterway are the international corridors located in the region. Other international corridors, which are important for regions accessibility, are located nearby the region, especially in east and south (FIGURE 3).

The recommendations regarding the national connections are similar to recommendations given to international connections. Also in these recommendations the key issue is that develop the transport services and seamless continuity of different transport modes. This point of view is essential especially in the development of the challenging accessibility of Savonlinna.

Development symbols and recommendations created for accessibility are as follows:

Principles for improving external accessibility and transport services of the region



Development of main international connections

The symbol shows the main international connections of the region. Highway 5 and main railway are the core of the symbol. Connections are part of the Trans-European TEN-t Network.

The development recommendation

The international connections and their area of impact should be developed as a coherent functional area. In the development of the connection special attention ought to be paid to an integrated land use and transport coordination, as well as the development of transport services. Land use and transport should be planned as a whole.

The connections to the community structure together with different land use, such as industry, commercial services, logistics or housing should be planned as a part of comprehensive strategic planning.

The requirements for fluent and safe transportation should be ensured because the main routes in the area belong to the Trans-European TEN-t Network.

The requirements for space reservations of the transport infrastructure should be taken into account in the land use planning.



Development of international water connections

The symbol shows the main international waterway connections of the region and their links to other forms of traffic. Connections are part of the Trans-European TEN-t Network.

The development recommendation

The connection should be developed as a part of the Trans-European TEN-t Network. The waterway access from Lake Saimaa to the Baltic Sea should be secured in land use planning. The special characteristics of water environment, landscape and cultural heritage should be taken account in the development of the international waterway.

In the development of international waterway in Lake Saimaa special attention should be paid to its connections to other forms of transport. The requirements for space reservations of the waterway transport infrastructure should be taken into account in the land use planning.

The connections of the waterway to the community structure together with different land use, such as industry should be planned as a part of comprehensive strategic planning.

Development of national connections

The symbol shows the main national connections of the region and the interfaces to international connections.

The development recommendation

National connections should be developed as key interfaces of the region to international connections. The requirements for fluent and safe transportation should be ensured.

The requirements for space reservations of the transport infrastructure should be taken into account in the land use planning.

The developing of the national connections should be carried out together with elaboration of the community structure and developing of the business sector, as a part of comprehensive strategic planning.

Especially in the Savonlinna area special attention should be paid to ensure a competitive external accessibility at least one mode of transport. In addition a seamless continuity of different modes of transport should be ensured towards international transport connections.

The third part of the recommendations considers the ways and means of internationalization of tourism in the region. The tourism structure in South Savo consist of two cities and large number of small tourism businesses in rural area. The cities and their role in tourism is considered in the recommendations for urban areas above. The major values, to which tourism is based on, are natural and cultural values of the region.

The strategic aim in the tourism is to seek growth of its internationalization. According to workshops, there are four main means of land use to support the region to reach this goal: sustainable use of natural and cultural values of the region, networked co-operation of tourist sites which are connected to main attractions, and accessibility of the tourist sites and their engagement of regional structure.



FIGURE 19. Lake Saimaa has not only a unique natural environment but also a rich cultural history. Part of the Prehistoric rock painting of Astuvansalmi in Ristiina, South Savo (Photo: Janne Nulpponen).

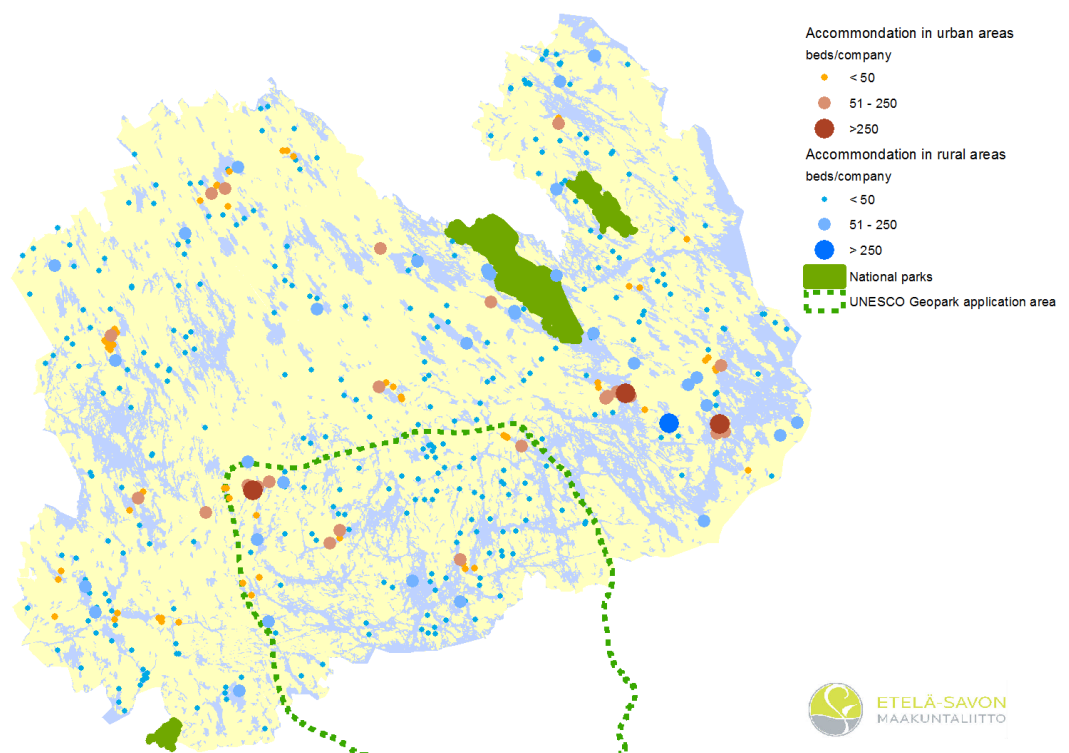


FIGURE 20. Tourist accommodation in relation to the natural attractions.

The key areas of tourism in the region were considered to be, in addition to the cities, three national parks and the unique natural and cultural heritage of Lake Saimaa. Most of the existing tourist business is already related to them. 63% of accommodation in South Savo is related to either the National parks or Lake Saimaa. One step towards internationalizing tourism in the region is application process to acquire the UNESCO Global Geopark status for Lake Saimaa together with the South Karjala region (FIGURE 20).

Markings on the regional land use plan map (FIGURE 18) are the oval shapes around three national parks and Lake Saimaa. The aim is not to point external borders of areas, but to demonstrate the need for strategic planning. The idea is to plan tourism as a solid part of the existing service and community structure in cooperation of the private and public sector. In the development recommendation there has been raised key points of view as a basis for planning.

Development symbols and recommendations created for tourism are as follows:



The key development areas of international tourism

The symbol shows the key development areas for developing tourism internationally in the region. The key areas are Lake Saimaa and the National parks of the area.

The development recommendation

The development symbol is used to show the areas that have need for special planning and developing in order to promote international tourism in the region. The development of tourism should be planned and implement in order to connect it as a solid part of the existing service and community structure.

The development should be carried out as a regional cooperation.

Special attention should be paid to:

- *cooperation of the private and public sector,*
- *unique role of lake nature and sustainable development of it,*
- *making use of and connecting tourism as a part of existing service and communal structure,*
- *transportation and existing water supply,*
- *special conditions of the area,*

- *protection and sustainable use of natural and cultural environments, as well as*
- *planning and maintenance of hiking routes and other recreational facilities.*

The development, land use planning and implementation of tourism should be carried out with environmental impact assessment, so that the special characteristics of water environment, landscape and cultural heritage remain.

6 CONCLUSIONS

The main research problem of this study was how future research methods can be utilised in regional land use planning. The development task was to research how the outcomes of the future foresight process can be transformed into strategic aims of regional land use plan. The research was based on ongoing scenario analysis and regional land use plan processes at the Regional Council of South Savo.

Chapter 2.3 presented the benefits of using scenario analysis to support decision making. According to literary sources scenarios can widen the perspective of the decision making, facilitate the perception of causalities and enlighten the consequences of the present decision making in the network of possible worlds.

According to this case study, the scenario analysis is a suitable way of studying different possible futures. It gives an understandable way to study the future. The case study shows that the scenario process in the regional council of South Savo widened the perspective of decision making. Especially the idea of cutting the future to chain of possible events ease the analysis. Causalities of the possible chain of events helped to better understand the larger scale changes in the external operation environment.

According to the case study, the greatest challenge in the Scenario analysis was to bring the possible changes in the external operation environment to a local level and combine their effects with the ongoing local trends. The further challenge came from the fact that the public sector's point of view is much wider than that of the private sector.

Scenarios are mainly used in private sector companies which usually operate usually in quite a narrow field of action. Private companies can make themselves quick changes to their actions and so try to affect their future results. A regional council and its area on the other hand consist of a wide range of operators and variables. This aspect affected the making

of the scenario analysis. It was challenging to focus the analysis on relevant issues. The weakness of the scenario analysis method seems to be that there might be uncertainties to filter relevant factors to the study.

As quoted in the chapter 2.3, at its best the scenario analysis can help the actor to head one's activities towards the desired possible world, or at least to avoid ending in an undesirable possible world. How this was managed in the case is yet to be seen, but the scenario analysis helped a lot in changing the perspective to a future orientated direction.

This scenario process brought together a large number of people from different background to debate and bring different points of view to the examination. Earlier it has mostly been sector-specific approach that has been used on the participation in the regional council processes. The multidisciplinary way of working brought a deeper approach to the process. The same multidisciplinary approach was used also in the workshops in which the regional land use plan was dealt with. This helped to understand the relationships between the objectives of the various sectors.

The scenario analysis and the change from the sector-specific approach to the multidisciplinary way of working also improved the performance at the Regional council. The combined preliminary study and combined workshops for both regional development and regional land use tasks refined the council's processes and their contents towards a more integrated whole.

The fact that the scenario analysis dealt with a large number of variables caused difficulties for its utilization by the basis for further work. The contingency plan helped the interpretation of the scenario analysis but it also turned out to be too complicated to use as itself e.g. as a basis for workshop. Its message needed to be simplified and reanalysed before workshop sessions. The more detailed scenario material gave, on the other hand, a lot of useful information for the preparatory work.

From the point of view of land use planning, no direct answers were found for development from the scenario analysis. It turned out that the scenario analysis gave very similar conclusions to the land use planning despite the scenario alternatives. Although no direct answers were achieved, the scenario analysis on possible changes in the external operating environment gave a whole new perspective to the examination.

The results of the scenario analysis gave a frame of reference for the future challenges and opportunities regarding the region. It gave background support for strategic thinking, but no direct answers. It mainly dealt with functional matters but it also gave valuable hints on how to develop land use in the region. It proved to be challenging to shape the land use strategies out of this functional information. This formed the strategic recommendations towards a mixture of traditional land use aims and functional aims.

Another challenge on using the scenario analysis as a basis for strategic land use planning seems to be that changes in the community structure are slow while the changes in the external environment can happen suddenly. Surprisingly, this turned out to have a positive effect on the workshop discussions: the focus on strategic land use planning turned from the need of the new community structure towards the resilience and more effective use of the existing infrastructure.

The main conclusion from this study is that future studies improve the focusing of the strategic objectives on regional land use planning. As a conclusion of this study, the scenario analysis can bring new perspective and solution orientation to strategic land use planning. Also the multi-disciplinary perspective deepens the examination. The workshop method takes time and resources, but it seems to deepen the understanding and diversify the outcome. The scenario analysis together with the participatory process seem to have helped to produce a more versatile outcome to the strategic level of the regional land use plan than before in The Regional Council of South Savo. The result is a solution-oriented combination of

development recommendations on both built environment and functions on it.

A useful subject to study in the future would be to examine the effectiveness of the strategic level of a regional land use plan towards more detailed planning and land use. It would also be appropriate to examine the usefulness of future foresight methods in master planning.

SOURCES

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