

PLANNING FOR SUSTAINABILITY IN NORDIC TOURISM DESTINATIONS: Case Ylläs, Lapland, Finland

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Abstract

Many tourism destinations are struggling with simultaneous needs to protect natural environment and to meet the needs of tourism. Depriving natural assets, growing numbers of visitors, and fast construction and development all strain the carrying capacities of these communities. Planners are working in the crossfire of different demands, interests of several operators, and needs to preserve nature and its limited resources. Yet, planning for sustainability in tourism destinations remains rather vague.

MATKA Sustainable Tourism Destinations - Land Use, Architecture, and Energy (2009-2011) was a multidisciplinary research project investigating sustainable solutions for Nordic tourism destinations in terms of land use planning, energy systems and architecture. **MATKA project aimed to....** MATKA was a joint project between the Aalto University Departments of Architecture and Energy Technology, and Finnish Forest Research Institute (Metla).

The case study site of this project located in the Finnish Lapland, Ylläs – one of the fastest growing ski resorts in Finland. The case study site was a roughly 1200 ha new development next to the existing ski center on the northwest slopes of Ylläs fell. At the time of the research, a master plan for the site had been prepared and approved by the municipality, and it waited to become legitimate. The municipality, together with other developers of the site, held a planning competition in 2010. The goal of the competition was not only to get a variety of optional plans for the site but also to find new solutions for a sustainable tourism resort. In 2011, planning the site continued with the winning team.

This paper will describe the results of the MATKA project together with the design process of the competition proposal and the further developed plan for the site. Furthermore, this paper will describe the observations drawn from reflecting the research and practice. Authors of the paper represent both ends: the research as well as the practice. Key questions of the paper are:

- How the research and practice met in this particular case study, and

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- How did the different demands for sustainability integrate in planning the new resort community in Ylläs?

The analysis of Ylläs case study showed that meeting the demands of sustainability easily become secondary to the variety of short-term stakeholder interests, and that moving towards detailed planning the aims for sustainability do not concretize. The analysis suggests that strong cooperation between planners and researches from early phases of planning until the more detailed planning would be one way to ensure that aims for sustainability are considered through out the process. Also, this way the conversation between different stakeholders and decision-makers could be facilitated by the researchers, and therefore the possible disputes in the community lessened.

1. Background

Global concern on the sustainability of our development began already in 1960's with better understanding of the environmental changes and the effects of these changes on our living environment. Despite of being recognized and discussed already for decades sustainable development remains a vague concept and difficult to apply in practice. The aims for sustainability and the tools to achieve these aims are a challenge for everyday life as well as for policies, decision-making and land use planning.

There are many guidelines and criteria for sustainable planning (LEED etc.), and these guidelines are appreciated as tools for planners and designers. However, applying those to the often very specialized conditions and demands of tourism destinations may be difficult or even impossible. Many destinations are located in extraordinary natural environment, which is sensitive to erosion, and slow to restore. In addition, Nordic resort communities are often rural and remote destinations.

Natural environments as well as communities are in a constant change. There are many reasons for change, and not all is due to our actions or under our control. In resort communities the change is driven e.g. by customer demand, growing numbers of visitors, increasing traffic and fast construction which all have direct and indirect effects on the environment. With nature and landscape as their main assets, they struggling with simultaneous needs to protect natural environment, to meet the growing needs of tourism and to assure the social and economic well-being of the community (Shawn & Williams, 2004). With development and new construction tourism destinations reach for increased economic benefits and better competitiveness. But the growing numbers of visitors and fast construction strain the natural as well as the social carrying capacities of the communities. Changing environments require systemic approach to planning, and new thinking is needed in order to review the values behind development.

1.1 Case study: A new resort community in Ylläs, Lapland

The case study site of MATKA project located in Ylläs³, in the western parts of Finnish Lapland (Fig.1). The site lies next to Äkäslompolo village and Ylläs-Ski ski center on the northwestern slopes of Ylläs fell. Ylläs fell (718 m.s.l.) is part of the third largest national park in Finland, Pallas-Ylläs National Park. It is the most southern fell of the park. The fells in Lapland create a unique mountainous landscape in Scandinavia, and also Ylläs is appreciated for its far-reaching scenery and extraordinary Nordic nature. Like in many Nordic destinations, tourism in Ylläs is based on the exclusive natural environment.



Figure 1. Location of Ylläs (source: Google maps)

The case study site was altogether a roughly 1200 ha indicated for new development (Fig. 2). At the time of MATKA research, a master plan (Ylläs II Master plan) for the site had been prepared and approved by the municipality, and it waited to become legitimate. The master plan together with other legal documents and strategic plans

³ Ylläs is one of the most visited ski resorts in Finland. Of the individual ski resorts in Lapland, Ylläs has had the second most registered overnight stays during 2004-2010. In 2011 Ylläs held over 12% market share of the nights spent in Lapland. (Statistics Finland & Regional Council of Lapland, 2011; 2012)

indicated the aims for development and growth for the site. The master plan consisted of a dense new village center connected to the existing ski center and an altogether 334 ha holiday housing and accommodation area. For hotel, tourism businesses and services the master plan allows up to 284 000 sq m of new construction (10 200 bed units), and for holiday housing approximately 50 000 sq m (2 500 bed units). Other guidelines for planning were set by the existing topographical, ecological and micro-climatic conditions of the site (Fig. 3).

Many strategic plans and development projects considering the future of the Ylläs site have been made during the last years and decades. Part of the long-term development was a planning competition that was held in 2010. The goal of the competition was not only to get a variety of optional plans for the site but also to find new solutions for a sustainable tourism resort. In 2011, planning the site continued with the winning team. Based on the winning entry, a *resort master plan* for the site was finalized in December 2011. A resort master plan is a combination of guidelines of the legitimate master plan, aims of the service providers and other actors. In the near future, the development of the site will continue with detailed planning.

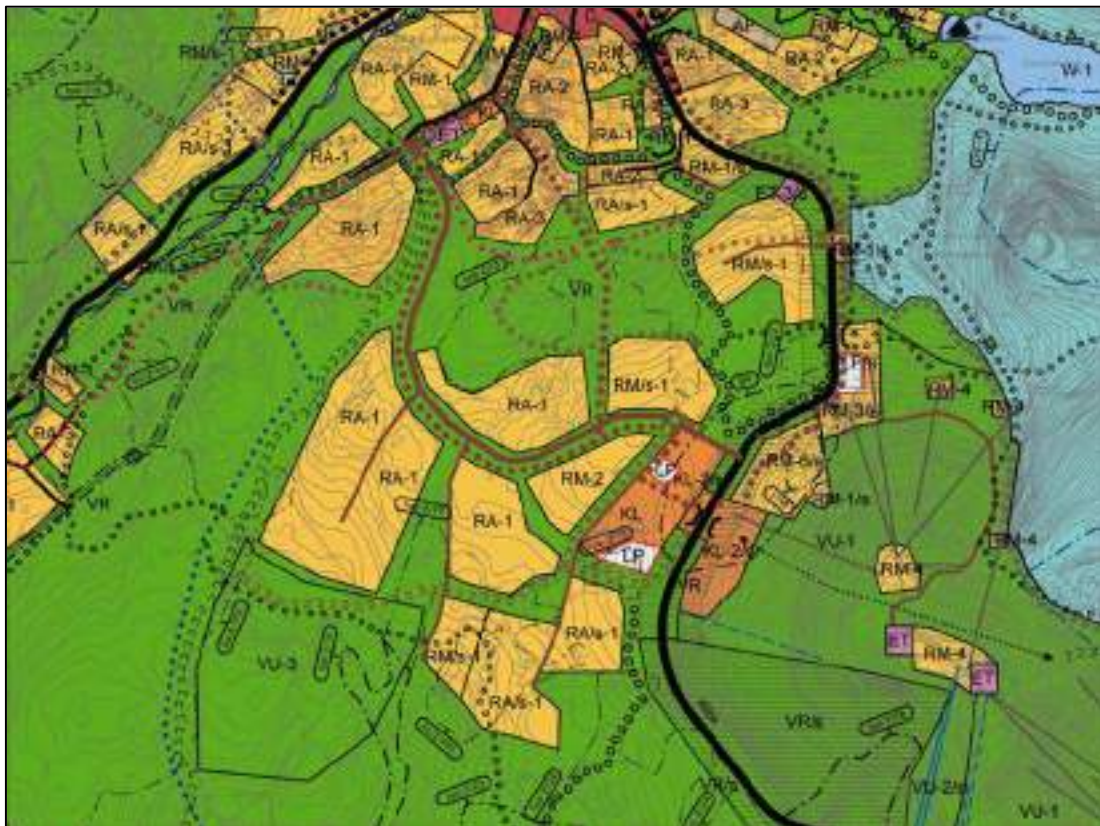


Figure 2. The part of the Ylläs II Master plan that concerns the new resort development site as it was at the time of the MATKA project. (Source: Kolari municipality)



Figure 3. Ylläs case study site's topography and ecological conditions together with the existing infrastructure.

2. Methodology

MATKA project was based on pragmatic action research methods. During the project, MATKA researchers worked together with the project partners⁴ that represented the entire value chain of stakeholders of the case study site. The ongoing planning process of the case study site framed the research through out the process. Different planning documents, policy papers and other relevant agreements, plans and reports were studied and analyzed in terms of sustainability. In addition, local actors and residents were interviewed, and a visitor survey conducted, in order to find out a shared vision for the development of the specific site. (Merikoski, 2010; Staffans & Merikoski, 2011)

⁴ The project partners were Kolari municipality (the planning authority), Laatumaa (land owner), Lapland Hotels (tourism industry, one of the key developers of the site), Lemminkäinen Talo Oy (holiday house constructor and developer), and Fortum Power & Heat (energy company).

MATKA project was also linked with a planning competition held for the site. The aim was to enhance understanding in integrating sustainability in planning, and to find solutions for evaluating and comparing alternative plans. The researchers created principals for planning the site in a sustainable way for the competition program, and evaluated the proposals in terms of the given guidelines. For the evaluation it was considered how the given principals were articulated in the proposals, how the different dimensions of sustainable community were emphasized, and how had the guidelines been translated into planning solutions. Features, such as land use and infrastructure, of the proposed plans were investigated by layering the features of different proposals on top of each other. This way the differences between proposals were easier to understand and the effect of visual representations alleviated. (Fig. 4)

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Figure 4. Features, such as land use and infrastructure, of the proposed plans were investigated by layering the features of different proposals on top of each other.

For this paper the results of MATKA project were examined together with the design process the case study site. Authors of the paper represent both ends: the research as well as the practice. The authors aimed to identify some of those factors in a planning process that support long-term sustainable development.

2.1 Design sciences

Since this paper describes research and conversation over a planning process, it is necessary to have a look at *the design sciences* as a concept. Van Aken (2004) distinguishes three categories of scientific disciplines: *the formal sciences*, *the explanatory sciences*, and, *the design sciences*. By design sciences, van Aken refers to academic disciplines such as engineering and medical sciences. The design sciences aim to develop knowledge for the design and to solve or improve problems in e.g. construction or planning (van Aken, 2004). As van Aken indicates (2004, pp. 225), the final objective in design sciences "...is to develop valid and reliable knowledge to be used in designing solutions to problems." where as formal sciences such as philosophy or math aim to build systems propositions that are internally logical and consistence. Explanatory sciences, on the other hand, aim to describe or explain observable phenomena. (Van Aken, 2010, pp. 224).

Straatemeier et al. (2010, pp. 578) note that research in planning is not only concerned with understanding the current practices and processes but also with creating change. They argue that in order to generate innovations in planning, a particular research approach is needed. The traditionally used research methodologies (e.g. comparative case study analysis) are static and do not allow interactive development processes that are necessary in order to generate change.

Straatemeier et al. (2010) introduce a methodology called “experiential case-study analysis”. The methodology suggests that innovations for planning practices can only be developed through iterative testing, reflection and adaptation. (Straatemeier et al., 2010)

3. Key findings of MATKA project

MATKA project was a multidisciplinary research project investigating sustainable solutions for tourism destinations in terms of *land use planning*, *energy systems* and *architecture*. In terms of integrating sustainability in planning tourism destinations, the key findings were:

- A shared vision is needed in order to identify common values that all stakeholders and community members are committed to promote
- There is a need for more flexibility in detailed planning, and more commitment to value-based, strategic planning
- Competitions offer a viable tool to investigate sustainable planning solutions but it has to be ensured that they respond to the current needs and the ongoing planning process

3.1 A future vision of a sustainable community

Vision integration is being adopted for strategic development and planning in many cities and municipalities through various methods and with divergent results. It has been understood that evaluation of future direction in planning is often based on an analysis of the process that has led to the current situations, and planning responds to guidelines set by the past. However, future community planned this way may not be the one we envision for ourselves. (Staffans et al., 2008; Merikoski, 2010) A shared vision is seen as a tool to "create the future we [the community] choose" (RMOW, 2007).

Figure 5 illustrates how the vision of a sustainable community was understood as a combination of national and global aims for sustainability and local condition and values in MATKA project. What the local community and stakeholders need and value in their business and living environment set a local frame for *the features for sustainable communities*. Together with the global demands for sustainability they form a framework for *a future vision* for the community. A shared vision responding to the key features of sustainability is a tool to identify objectives, and to develop criteria for planning and design principals. The built environment and its use and maintenance need to be monitored in order to verify the results and effects. Vision becomes reflective to new knowledge and results of implementation due to the ongoing evaluation. (Staffans & Merikoski, 2011; Merikoski, 2010)

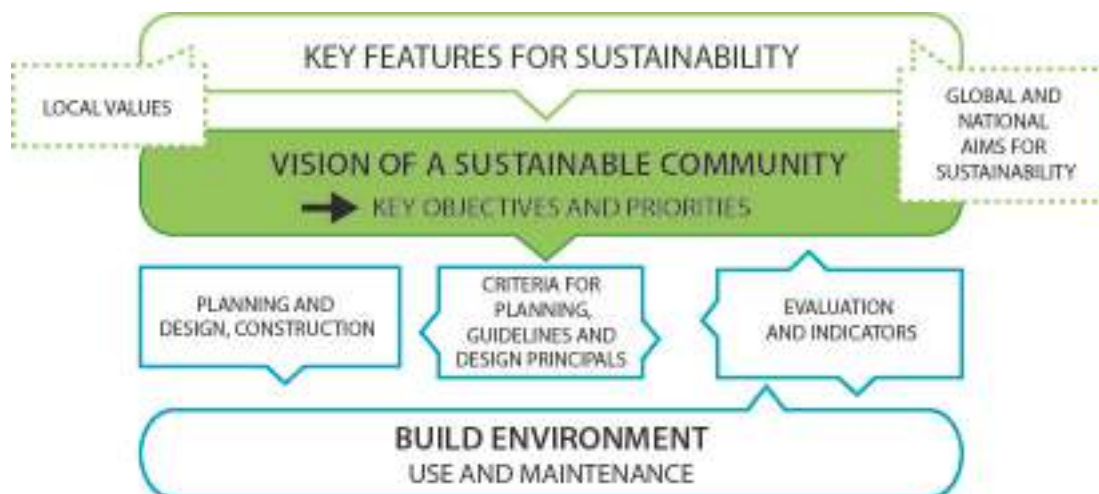


Figure 5. Key features for a sustainable community are a combination of local values and global aims for a sustainable community. The features are necessary for envisioning a sustainable future for the community. Guidelines for planning can then be created based on the shared vision. (Source: Staffans & Merikoski, 2011)

Tourism destinations are communities with a variety of stakeholders. In addition to residents, tourism industry and municipality, the stakeholders include visitors, seasonal workers, second home owners and the services and business outside of tourism sector. Therefore, planning and developing these destinations means balancing between many different, and even conflicting interests. (Beritelli, 2011; Merikoski, 2010)

The discussions with Ylläs stakeholders indicated that in the end, interests of different stakeholders were not as conflicting as they were perceived. Old disputes in the community reflect on current atmosphere for cooperation and discussion. Sometimes the key aims are not heard or they are misunderstood by others because of prejudice or merely because common discussion turns into an argument on secondary topics. When future visions and development interests were discussed in small stakeholder groups common understanding as well as different points of views were easy to identify and the discussion was open minded. On the other hand, these discussions showed that in the end, the key interests were shared (Table 1).

Table 1. Shared values identified from stakeholder discussions in Ylläs. (Staffans & Merikoski, 2011)

LOCAL ENVIRONMENT: NATURE, LANDSCAPE, COMMUNITY Respecting and protecting the natural systems	
BUILT ENVIRONMENT	COMMUNITY AND WELL-BEING
A well-planned community (quality of	Needs of residents, community life and

planning, design and construction)	well-being
Sustainable mobility, trails (promoting car-free travel)	Partnerships and participation
Architecture	Identity, culture and cultural heritage
Sustainable energy solutions	Methods of guidance, know-how (towards sustainability)
Managed and controlled growth and development (carrying capacities of the community and nature; year-round tourism)	Tourism as part of larger economic system
Successful operational environment for tourism	Healthy and diversified tourism economy
SUSTAINABLE COMMUNITY, QUALITY	

A shared vision can be seen as a common agreement on the basis of future development. It is also a link between the often quite abstract aims of sustainability and the local context. However, these value-based key interests as guidelines for planning and development require commitment from all stakeholders. In addition, it is necessary that the stakeholders are able to trust on each other's commitment. The trust can be created only by long-term cooperation, and the experience from MATKA project suggested it might be enhanced by research partnerships.

3.2 Commitment to strategic planning

The National Building Code of Finland underlines the different aspects of sustainability, and all planning and building construction should promote ecologically, economically, socially and culturally sustainable development (MRL 2000, 1 §). Nevertheless, in land use planning as well as in building construction the legally binding, quantifiable regulations are only barely met, and it is left to the commitment and will of stakeholders whether they will aim more ambitiously towards sustainability.

Ylläs case provided examples on how aims for sustainability do not concretize towards detailed planning. The site for the new development sits next to the Pallas-Ylläs National Park, and the unique natural features typical to the area exist on the site as well. National parks in Finland are well protected by the law and the natural values of the site have been recognized in the Ylläs II Master plan as well: several levels of protection give guidelines for future planning. However, only a few of them are obligatory, and e.g. wetlands are only partly appreciated. Meanwhile, wetland and water body conservation is a required feature in many internationally renowned indicator systems, such as LEED 2009 for Neighborhood Development (USGBC, 2012). (Merikoski, 2010)

For successful resort development, the shared value-based aims for sustainability have to be identified and supported by all actors and stakeholders. Also, due to the lack of means to bring sustainability into practice in detailed planning, there is a need for more flexibility in order to implement new technologies and to promote innovations (Fig. 6). (Staffans & Merikoski, 2011)

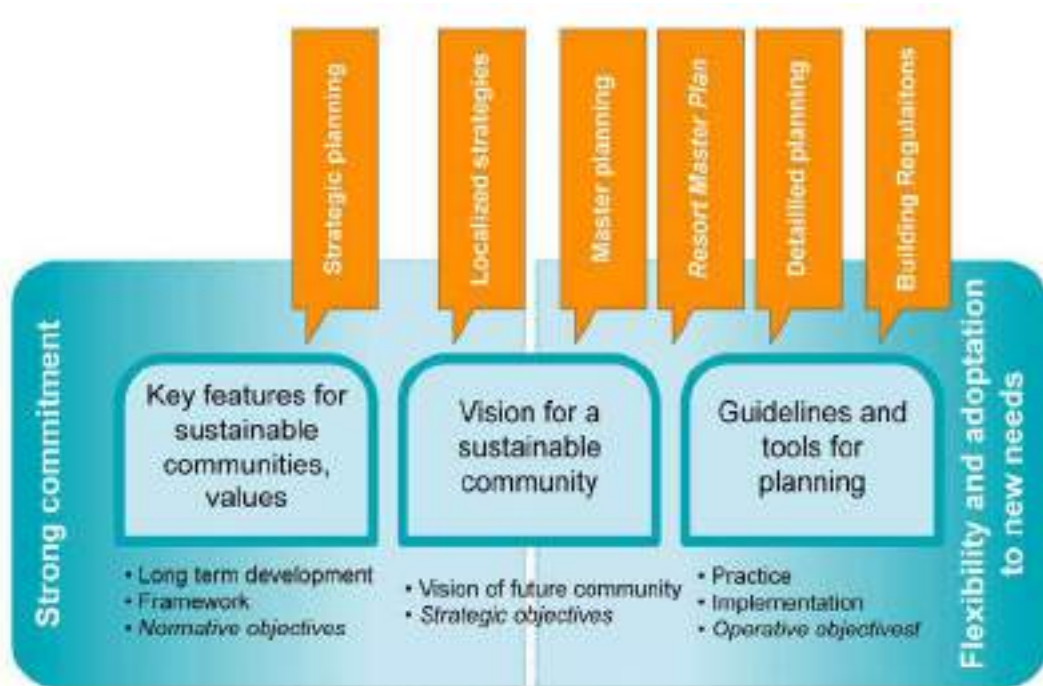


Figure 6. Current land use planning in Finland puts emphasis on detailed planning by legally binding regulations and rather slow transformation processes whenever revision is needed. More commitment is needed to strategic planning, and at the same time, more flexibility in detailed planning. (Staffans & Merikoski, 2011)

3.3 Competitions as tools for sustainable development

Design and planning competitions seem to offer a viable tool for investigating sustainable solutions for one particular site. (Staffans & Merikoski, 2011; Merikoski et al. 2012) With a competition, different options can be studied and stakeholders will understand already before the commission what to expect. Nonetheless, competitions have to be programmed in a way that the results respond to the current planning process and to a particular need. It has to be understood what can be solved with the competition, and clarified what is sought after. (Merikoski et al. 2012) It seems that in Ylläs, the planning competition would have been more successful if it had been held earlier in the process. Now, although considered flexible the legitimate master plan for the site set major limitations for new ideas for sustainability.

(Staffans & Merikoski, 2011) Figure 7 shows how Ylläs competition was positioned in the long-term planning process for the site.

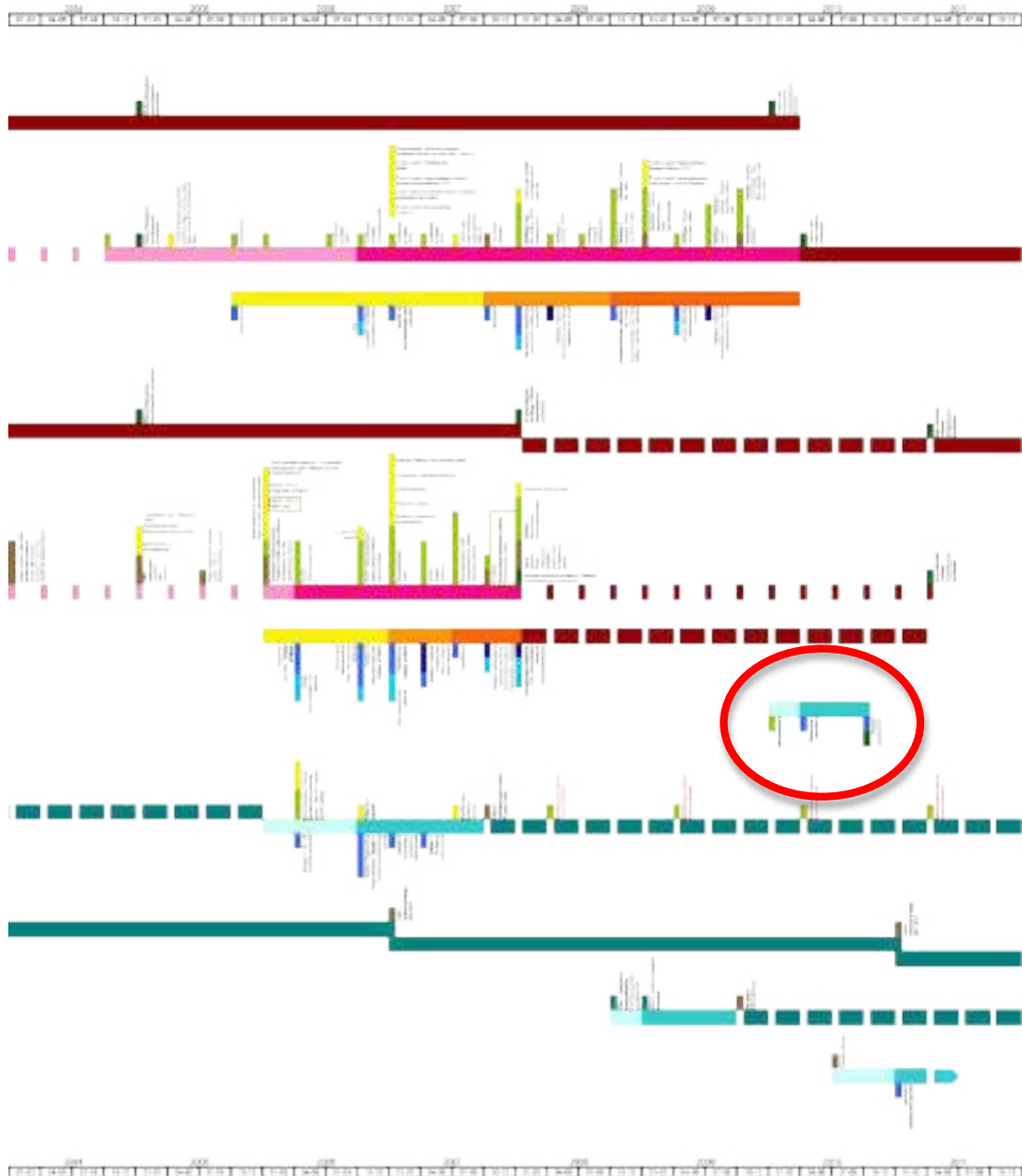


Figure 7. The evaluation of the Ylläs competition suggested that it might have been more successful in terms of finding innovations for sustainable resort communities had it been held earlier in the planning process. (Staffans & Merikoski, 2011)

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4. Ylläs competition: guidelines for sustainability

Ylläs planning competition was launched in April 2010. The objective of the competition was to investigate optional planning solutions for the new resort community. Five multidisciplinary design teams were invited to propose a plan for the site, and to find new solutions for a sustainable tourism resort.

MATKA project took part in programming the competition by introducing a vision and key principals for sustainability as guidelines for planning the site. These guidelines were based on six features for a sustainable resort communities identified in MATKA project (Fig. 8). The vision was developed together with the various stakeholders of the case study site. In all, five group discussions were organized with different stakeholders: municipality representatives, business and tourism industry representatives, residents, land use and infrastructure actors, and second homeowners. During the process, local values, sustainability objectives and the future vision of the site were discussed.






	LAND USE PLANNING	Built environment and planning, methods and practices
	MOBILITY AND TRANSPORT	Accessibility, modes of transport, trail network
	ECOLOGICAL SUSTAINABILITY	Natural environment and landscape, energy and waste management
	ECONOMIC SUSTAINABILITY	Operational environment and service structure, growth and measures
	SOCIAL SUSTAINABILITY	Housing, well-being, partnerships, local culture
	LIVING ENVIRONMENT AND ARCHITECTURE	Quality and high standards, guidelines and building code

Figure 8. Six key features for a sustainable Nordic tourism destination identified in MATKA project. (Staffans & Merikoski, 2011)

Decisions made during early phases of **land use planning** have long-range impacts in terms of sustainability. Regional structure and built environment effect on future opportunities to adopt sustainable solutions. Planning also affects on how natural resources are employed and what kinds of uses and activities are encouraged – or

feasible. Planning practices are linked with social sustainability through participation and open communication.

Needs of **mobility and transport** in tourism destinations are two-folded: accessibility of the destination and mobility within the community. All stakeholders in Ylläs mentioned traffic planning, sustainable modes of transport and accessibility as key elements for a sustainable future. The trail networks (cross-country skiing, hiking, motor sleds, dog sleighs, etc.) were considered as one of the core attractions of Ylläs. Within the resort, accessibility includes physical and visual access to nature, as well as pedestrian environment (allowing access to tourism services and encouraging car free tourism). Sustainable mobility in a resort community has to respond to the needs of the residents and workers as well - in addition to visitors. The built environment sets the frame for different modes of transport: what kind of mobility is possible, and how sustainable and soft modes of transport can be adopted. Fast and sustainable transport (such as rail connection) to a destination will be an asset in the future because of the significant environmental effects of air and car traffic. (Staffans & Merikoski, 2011; Merikoski, 2010)

Protecting biodiversity and sustaining ecosystems are global concerns but for nature-based Nordic resort communities, **ecological sustainability** also means ensuring their own success as tourism destinations. Strong winds, heavy rains and weather conditions that change quickly require climate responsive planning and architectural solutions. (e.g. Luthé, 2009) Pollution, waste and other substances spread and stored in water, ground and air have a direct effect on the attractiveness of the destination (RMOW, 2007). In addition, climate change needs to be considered in Nordic tourism destinations. It may mean changes for winter activities and the possibilities to perform different winter sports. If winters become more moderate in the future, year-round visitors and activities will become more important for ski resort communities. (Luthé, 2009) Already ski resort communities in Finnish Lapland struggle with significant imbalance between seasons that are not **economically** or **socially sustainable**. At the same time the operational environment has to support tourism business and encourage the sustainable practices, as well as economically profitable activities. The growth of the resort has to in balance with the carrying capacity of the natural environment and the community. Finally, in tourism destinations, the well-being of the local community is important also for tourism. The residents as well as the visitors will appreciate high quality **living environment** that reflects the local culture. As an example, the key objectives for *sustainable land use planning, mobility and traffic*, and *ecological sustainability* summarized for the competition are listed in Table 2.

Table 2. The key objectives for *sustainable land use planning, mobility and traffic*, and *ecological sustainability* summarized in MATKA project.

Sustainable land use planning	<ul style="list-style-type: none"> • A shared vision for sustainable future • Balanced development: new
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	development, existing conditions and carrying capacities
	<ul style="list-style-type: none"> • Nordic nature and conditions as the basis for planning
	<ul style="list-style-type: none"> • LCA / Regional life cycle assessment
	<ul style="list-style-type: none"> • Multidisciplinary expertise integrated in all planning
	<ul style="list-style-type: none"> • Communicative planning and participative methods as a common practice
Mobility and traffic	<ul style="list-style-type: none"> • Sustainable access to resort
	<ul style="list-style-type: none"> • Balanced transport and route planning: carrying capacity, future demand, flexibility
	<ul style="list-style-type: none"> • Ensuring routes and trails for all users
	<ul style="list-style-type: none"> • Physical and visual accessibility of nature
	<ul style="list-style-type: none"> • Encouraging sustainable mobility and car free tourism
	<ul style="list-style-type: none"> • Accessibility and pedestrian environment
Ecological sustainability	<ul style="list-style-type: none"> • Protecting natural environment and biodiversity
	<ul style="list-style-type: none"> • Planning from local conditions: ecology, climate, topography and landscape
	<ul style="list-style-type: none"> • Energy and material efficiency in planning and construction
	<ul style="list-style-type: none"> • Local and sustainable waste management
	<ul style="list-style-type: none"> • Landscape-based planning

Although different dimensions help to understand the complex aims and demands of sustainable communities, they are interconnected. Moving towards a sustainable community in long-term may mean tradeoffs in short-term development. It means that taking a step forward in one area may mean lack of development on another area - or even negative impact in terms of sustainability. These tradeoffs must be recognized, and they can be seen as stepping-stones toward long-term sustainability. (RMOW, 2007) Vision-based planning is a feasible approach in order to illustrate and understand these interconnections and trade-offs.



Figure 9. Competition proposal “Luppo” suggested a strong ecological approach.

This proposal left most of the site untouched and suggested radically less construction than Ylläs II master plan allowed. It was found unrealistic in terms of the site developers’ aims especially since it left the highest parts of the site – with the most sensitive nature – unconstructed. In the master plan, half of the resort center and a 10 000 sq m hotel are to be built to these parts of the site.

The competition proposals were submitted in early fall 2010. MATKA researchers analyzed the proposals in terms of the given guidelines. Overall the proposals suggested only variations of plans that were fitted well into the Ylläs II Master plan. Innovative approaches to sustainability were not found and only one of the five proposals, “Luppo”, suggested a plan with a strong statement for sustainability. It proposed radically less construction than the master plan allowed leaving as much land unconstructed as possible (Fig. 9). Even so, it was considered unrealistic in terms of developers’ aims for the site. “Noitarumpu” offered an interesting approach to organizing traffic and the core of the resort (Fig. 10). However, the proposal was not economically feasible.



Figure 10. In the competition proposal “Noitarumpu” the center of the resort was resolved in a very characteristic way. It was found interesting and reflecting the local culture in an innovative way but considered economically unrealistic to realize.

The competition was resolved in December 2010. The analysis and findings by MATKA researchers were available also for the competition jury to support their decision-making. “Kuura” by Eriksson Architects was announced as the winner (Fig. 11). It was considered the best compromise of all the guidelines and aims. The plan was carefully studied and it responded well to the architectural guidelines for sustainability, such as the composition of buildings in the landscape and topography. However, it was considered too spread out in terms of land use, and the jury suggested that in the future, it would need to be developed more compact. Further planning of the site was commissioned to the winning team, and the resort master plan finalized late in 2011 was based on the winning proposal.

5. Planning process

5.1 The competition proposal

The guidelines for Ylläs competition included the existing Ylläs II Master plan and the principals for planning a sustainable tourism destination given by MATKA researchers. The master plan was considered flexible but at the same time problematic in terms of the aims for sustainability. For instance, the different densities of construction set by the existing plan were seen problematic: in certain areas the density seemed too low for an effective infrastructure or public transportation system. On the other hand, the dense new resort center was to be built on the most challenging topography and the most vulnerable natural environment.

In planning competitions, the teams balance between the restrictions set by realism and the totally new approaches to planning the site. Proposing a plan that offers a new approach includes a risk of not becoming rewarded. Often competing teams aim for a compromise where the proposal is a combination of realism that the organizers are assumed to be looking for, and new thinking to some extent (Merikoski et al., 2012). What the approach will be in a particular competition is a decision that has to be made in a very early phase of the design process.

In spite of the aims for sustainability that might have provoked for new thinking, as well as the challenges in the existing master plan, in this case, the planning team still chose to follow the major guidelines of Ylläs II Master plan as it was given as the base for the planning.



Figure 12. Winning entry “Kuura” by Eriksson Architects Ltd.

One of the challenges of the competition was how to ensure easy access to sustainable modes of transport and to different trailheads as the new construction and development would take more and more land area. Guidelines such as limiting new construction within walking distance from main roads were suggested in the Ylläs competition program. It was demonstrated by the MATKA researchers that while it would still allow same amount of development (sq m and bed units) with the same average density as the current master plan, public transport would be accessible, and nature and trailheads would be always at walking distance. (Staffans & Merikoski, 2011; Merikoski, 2010)

Nevertheless, the planning team deemed that new ideas for sustainable transportation and traffic came out easily for the competition proposal. In the proposal, access to pedestrian, skiing, hiking and biking routes was kept easy with the aim to reduce the need for a car. Two lifts were also placed on the resort area to enable the ascent to the slopes directly from holiday accommodation. Reindeer and husky taxis were proposed as alternatives for traditional taxis. It was also easy to use creativity in the energy issues in the competition phase as the planning team included an energy expert: for instance the energy collected by cooling the slopes was proposed to be utilized in heating the holiday houses.

The most challenging task in the competition – and also later in the planning process – was to place the required amount of square meters of new construction on the steep slopes of the site. These northwest slopes will be challenging to construct but they are also valuable in terms of nature and landscape. However, the amount of new construction was justified by the close proximity of tourism services and lifts that made the new center easily accessible.

In the proposed plan, the given densities were mainly achieved. The best possible solutions to place the maximum capacity of construction on the site were studied, and the main idea was to leave as many of the unique geological formations untouched as possible. The existing master plan included instructions to leave “the most valuable parts” of these geological formations untouched, yet it didn't state which parts of the slope these actually were. There seemed also to be a conflicts between the allowed square meters, given floor heights and the overall area of the site. It was almost impossible to leave parts of the site unbuilt with the required amount of square meters.

Although considered flexible, Ylläs II Master plan set major limitations for new sustainable ideas. The planners found it difficult to follow the given guidelines for sustainability while the existing master plan was in so many ways contradictory to them. The widely spread structure of new construction and the dense new center situated over the most vulnerable and geologically valuable environment, were considered as the most challenging components of the existing master plan. The biggest change to the existing master plan in the proposal was the relocation of the

new main road connecting the village and the new resort together. The road was moved further north in order to leave the most central area of the site for pedestrian and recreational use only. This green corridor, “The Winter Park”, also included a ski-in-out route and a lift that permitted straight access from the cabins to the slopes. This solution made the pedestrian traffic superior compared to vehicle traffic, and was considered one of the most important ecological components of the proposal.

When the proposal “Kuura” was announced as the winner of the competition, the same challenges, the lack of preserved natural areas and the fragmentation of the land use, were criticized in the jury’s feedback. The timing of a planning competition in terms of the long-term planning process seems to be crucial when new and innovative planning solutions are sought after. The realism and the knowledge of the ongoing planning process may limit the competitors’ will to take risks and propose something against what has already been decided.

5.2 Further planning: a resort master plan

Further planning of the site was commissioned to the winning team, and the resort master plan finalized in late 2011 was based on the winning proposal. A particular *resort master plan* is used in planning resort communities, and it means a comprehensive development plan of a center for travel, leisure, trade, business or another action. It typically consists of a study and a plan of the needed investments, economy, financing opportunities, marketing and sales of an area, as well as the locations of the main facilities. However, the Ylläs resort master plan was not realized to that extent. It concentrated on the volumes of the new infrastructure and the viability of planning solutions for the areas that were to be realized first.

The feedback from the jury of the competition as well as some useful ideas from the other rewarded competition proposals were utilized in the resort master plan as much as possible. Yet, some ideas proposed in the competition, especially considering the sustainable lifestyle of the new resort, seemed to be unrealistic at this stage. Many of the earlier strategic plans of Ylläs, and the different interests of operators were also studied more carefully at this point. In addition, the results of the MATKA research project were available. However, further cooperation with the researchers was not possible because of the schedule and the limited resources.

The goal of the resort master plan was to concretize the long-term goals of sustainability and create a base for the detailed planning in the future. Even though, many of the questions remained unresolved and were left for detailed planning. The future will show how the long-term aims for sustainability will become visible in the new resort.

For planners, working in the crossfire of the different demands of sustainability and the aims of several operators is challenging. Many times the final plan ends up a compromise, and not the first priority of anyone. The demands of sustainability are easily left secondary to the other interests. The further the planning process is from

legitimate and detailed planning, the easier the goals of sustainability can be seen. The commitment to sustainability is tested when the actual resources for implementation become at stake. There are no means to bind these aims legally when moving towards detailed planning and construction. If there are no measurable qualities, it's also hard to evaluate how well the goals of sustainability are reached in the plan (e.g. Junkkonen, 2011).



Figure 13. Resort master plan by Eriksson Architects Ltd. finalized in December 2011.

6. Analysis: how the research met practice in terms of sustainability?

During the research (2009-2011) and after it, the discussions for creating a new *sustainable* resort community in Ylläs faded gradually. After the competition and the researchers involvement the focus in planning shifted towards short-term stakeholder interests. Also, the discussion continued involving only the active partners of the new

development instead of all community members. At the same time, tight schedule for planning did not leave enough room for planners and architects to further investigate how to combine the aims for sustainability and the demands of stakeholders in the new resort master plan. Architectural and planning offices, even if specialized in sustainability, can develop their knowledge only to a certain extent. Therefore cooperation with researchers in planning would offer a way to gain access to latest research in integrating aims for sustainability in planning.

The analysis of Ylläs case study suggests that meeting the demands of sustainability can easily become secondary to the other stakeholder interests. In the competition, innovative approaches for sustainable communities had been left second to the demands of the existing master plan. The further the planning process is from legitimate and detailed planning the more aims for sustainability are present. At the same time there are no means to have these aims legally binding and they do not effectively transfer into practice when moving towards detailed planning and construction. The closer the process gets towards realization the more regulations begin to emphasize measurable and quantifiable qualities. For sustainability, it means that only regulations such as for energy systems or energy efficiency can effectively be included.

7. Conclusions

Planning sustainable tourism destinations requires a combination of different fields of expertise, such as land use and traffic planning; energy systems engineering; architectural design, landscape planning and ecology expertise; climate planning; tourism sector; and understanding in cultural and social environments. Planning means compromises and trade-offs, and it is case-related what kind of emphasis is put to the aims for sustainability. Nevertheless, planning sustainable Nordic tourism destinations begins with protecting natural environment and biodiversity.

MATKA project argued that new guidelines for planning are needed, as well as knowledge of sustainability and how to bring it into practice. Especially municipalities in remote areas with small resources may have a limited access to the information and skills needed to develop local sustainability. At the same time these communities may depend on tourism that appreciates the nature, as it is the case in Ylläs. Resort communities also have a plethora of stakeholders, and therefore a mutual understanding of the terms of development may be difficult to find. All have their short-term interests, and the compromises may mean mediocre design. Aims for sustainability are easily left secondary when stakeholders insist on their own interests without committing to common values. At the same time, many decisions made during early phases of land use planning have long-range impacts in terms of sustainable development. Regional structure and built environment create the frame for future opportunities to adopt sustainable solutions.

Working in the crossfire of different stakeholder demands was more than enough for the design team. Tight schedules do not leave opportunities for the planners and

architects to effectively introduce latest knowledge and research of sustainability into their work. Strong cooperation between planners and researchers from early phases of planning until the more detailed planning would be one way to ensure that aims for sustainability are considered through out the process. Also, this way the conversation between different stakeholders and decision-makers could be facilitated by the researchers, and therefore the possible disputes in the community lessened. Interests of different stakeholders may not be as conflicting as they are perceived.

It can be argued, that at least in Finland developing new tools and methods for planning for sustainable communities depend much on research projects. Planners, municipalities and stakeholders lack the time, financing and other resources for effectively develop the practicalities needed. It is critical to look at the points in planning processes where research projects end: how the planning continues and how the findings in research are implemented. Unfortunately, quite often the development does not continue and the results are not undertaken. To solve this we'd need to ensure that project's ending does not mean the end for cooperation. Also in term of design sciences and the academic benefits of design research, long-term cooperation and iterative process development are needed.

There seems to be many opportunities in developing partnerships where design research could develop new ways of interaction and cooperation through iterative processes as well as investigate the integration of aims for sustainability in land use planning. Correspondingly, planners, architects as well as all stakeholders would have the latest research knowledge at their reach. Competitions offer one tool for these partnerships. However, interaction should be taken further and continued after the competition is resolved. Researches can provide material and guidance for the competition and throughout the process. In addition, involving research partners directly in planning processes, and exceeding the cooperation in one particular project, offers another approach to a more intensive conversation between planners and researchers.

MATKA project and Ylläs case study could be seen as part of an experiential case-study analysis (see Straatemeier et al. 2010), and the next step would be to adapt the methods to another case study. Only then the lessons learned and reflections done would help to further develop the practices for cooperation as well as the vision integration in order to consolidate and implement aims for sustainability in planning.

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