

# **Work Creates Community:**

## **The Role of Tourism in Sustainable Development of a European Arctic Community**

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*Tourist destinations in the Arctic regions are dependent on very fragile ecosystems and distinctive cultures. Therefore it is crucial that sustainability principles are included in tourism development. This participatory action research, conducted with a transdisciplinary approach to tourism studies and sustainability science, illustrates how tourist hosts in a rural community in northern Sweden perceive their possibilities of producing shared sustainable benefits for their community. Micro-situational variables were identified with in-depth interviews and broader contextual variables were identified with qualitative participatory system analysis. The themes that emerged from these methods were analyzed with the framework of conditional cooperation for sustainable use of common pool resources. The study concluded that the level of cooperation is beneficial and thus tourism can function as the empowerment needed to activate drivers for sustainable development at a community level. The participants are learning and are reciprocal in developing a practice that is both environmentally and socially sustainable for the community. They are adapting to limiting infrastructural and social conditions and are confident that others in the community commit equally to meeting these challenges. Together they create community capital in projects and initiatives that create net benefits in the community. The main driver of this reinforcing relationship is the common interest of being able to continue living in their community and continue working with tourism. Standardization and centralization in national and municipal policies are the main limiting factors for sustainable development of this peripheral community, and for sustainable development of tourism as an employing industry in this area.*

### **Introduction**

As natural peripheral areas are becoming increasingly more popular as tourist destinations, Arctic regions are expected to experience increased environmental, economic and social impact of tourism in the coming years (Ólafsdóttir & Runnström 2013; Hall, Müller & Saarinen 2009). Meanwhile Arctic communities are often marginalized in policies and decision-making (Vik, Benjaminsen & Daugstad 2010, Hall, Müller & Saarinen 2009). Because of this, sustainable use of natural resources becomes a necessity to be able to make a living and maintain a good quality of life in European Arctic (EA) communities. This article aims to paint a picture of Gunnarsbyn, a rural community in northern Sweden where tourism is one of the few industries to be reliant on.

This article is a contribution to the emerging studies in tourism research that recognize sustainability science as inherent (Briassoulis 2002; Farrell & Twining-Ward 2004; Miller & Twining-Ward 2005). These studies embrace the concept of sustainable tourism, which seeks to meet the economic, social and environmental needs of both tourists and host communities in a manner that does not compromise future needs (Swarbrooke 1999; Gunn 2002), but call for a more indepth analysis of livelihoods and more hands-on solutions. These studies also emphasize the relevance of common pool resources to tourism, namely those resources “for which exploitation by one user reduces the amount available for others, but for which exclusion of additional users is difficult or impossible” (Ostrom 1990). Tourism activities are often practiced on land that tourist hosts do not hold property rights to and are therefore subject to a dilemma situation where cooperation is needed. Sustainability is therefore viewed as a dynamic process that requires adaptive capacity in resilient social-ecological systems (Berkes, Colding & Folke 2003; Kates et al. 2001). Additionally, this article aims to fill a research gap in sustainability science identified both by Vollan & Ostrom (2010) and Kates et al. (2001), namely to identify context specific conditions that enhance shared long-term benefits.

The research question is: how do tourist hosts in Gunnarsbyn perceive their possibilities of producing shared sustainable benefits for their community? In order to answer this question, we need to learn about specific aspects of tourist hosts’ work and in-depth descriptions of their interactions within and outside the community. The sub-research questions are thus: 1) Why are tourist hosts practicing tourism in the manner that they do today?; 2) How do the tourist hosts perceive common sustainability challenges?; 3) What systems of collaborative action are important for meeting common sustainability challenges in the community?; and 4) What are the net benefits of tourism practice for the community? The four sub-sections of the results address each of the sub-research questions. The last sub-section furthermore summarizes the results of applying participatory qualitative system analysis and through these provides an analysis of the shared sustainable benefits of the work done by the tourist hosts. Before presenting the results the following two sections give more insight into the problematics of tourism development in the European Arctic and the methodology of this study.

## Research Setting

Tourism development is significantly different between cultures, climates and ecosystems and conditions are specific for each community. Nevertheless the Arctic areas of Europe (figure 1) share certain conditions. Common challenges are low population density, out-migration, fragile ecosystems and few industries to be economically reliant on (Mikkola 2014). On the other hand, in most EA communities the law of free movement through all territories (*s. Allemansrätten*) gives individuals and organizations the right to travel through and stay overnight in the nature, including protected areas (SEPA 2009). This makes it possible for tourist hosts to create their attraction without ownership of land.



**Figure 1:** The Arctic areas in Europe as referred to in this study: large parts of Iceland, Greenland and Faroe Islands, and northern parts of North Ireland, Ireland, Scotland, Norway, Sweden and Finland. Source: The EU Northern Periphery Programme, retrieved from [www.northernperiphery.eu](http://www.northernperiphery.eu), 2014.

Gunnarsbyn, the setting of this study, is a small community in Norrbotten, northern Sweden (Figure 2). It is located close to the polar circle where it is usually covered with snow from November till March, continued by the spring-winter referred to as the best time of the year by locals. Summers are relatively short but warm. A small population spread over large territories is descriptive for the north of Sweden. The town of Gunnarsbyn has 157 inhabitants located in Boden municipality where 27,500 people are spread over 4,300 km<sup>2</sup>, a density of 7 people per km<sup>2</sup> (SMCLRA 2011). Out of Sweden's 53.7 million overnight stays in 2013, 2.15 million of these were in Norrbotten. Although this number does not seem like a lot, the overnight stays in Norrbotten have increased by 13% since 2008, which is significant compared to the national increase of 7% (Statistics Sweden 2014). It could be assumed that Norrbotten has premium conditions for development as a tourist destination all year round. But despite small scale tourism activities, tourist hosts in Gunnarsbyn need to adapt to the municipal, national and global conditions of the tourism industry.



**Figure 2:** Location of case study, Gunnarsbyn. Source: SMCLRA (2011).

Sweden is, according to the 2013 Travel and Tourism Competitiveness Report, the 9th most competitive country for tourism (out of 140). The T&TC index consists of 14 pillars, whereof Sweden's highest score is in 'environmental sustainability' (ranks number 1 out of 140), but the lowest scores are in 'government prioritization of the T&T industry' (64), and 'T&T government expenditure' (100) (World Economic Forum 2013). In 2012 the tourism industry accounted for 3% of Sweden's total GNP, which is a larger percentage than agriculture, forestry,

mining or fisheries account for (SAERG, 2012).

Despite its economic significance worldwide, the tourism industry is vulnerable in three main ways: 1) it includes small scaled businesses which are highly market sensitive; 2) it is categorized in the service sector where employees generally have the very lowest salaries; and 3) it is highly dependent on the carrying capacity of ecosystems. While tourism is generally treated as a solution to many economic, social and environmental challenges worldwide the sector's vulnerability lies in its lack of recognition as an employing industry and therefore lacks the agenda to impact development in an encompassing and sustainable manner (WTO 2011). This contradiction stalls the sector's development globally, which in turn has an impact on all tourism activity.

## Methodology

This participatory action research (PAR) encompasses a social constructionist view of socio-ecological systems theory. Through the lens of micro social constructionism (as proposed by Burr 2003), claims about the constructed reality of a certain practice can only be made by descriptions of "what people at a particular time and place take as real, how they construct their views and actions, when different constructions arise, whose constructions become taken as definitive, and how that process ensues" (Bryant & Charmaz 2010: 610). Inquiring about people's reality should have a direct purpose for those individuals themselves, empowering local expertise while providing tools that facilitate the discussion. After all, "individuals are the experts of their own lives" (Esterberg 2001: 136) and should thus be active participants in creating data about their community.

Describing the experience of each person around a constructed reality is too complicated to be represented without any kind of generalization in order to identify phenomena of interest. In order to explain the dynamics of the system of tourism practice in Gunnarsbyn, a participatory systems analysis was incorporated into a semi-structured interview design where the goal was to "explore a topic more openly and to allow interviewees to express their opinions and ideas in their own words" (Esterberg 2001: 87). The first part of the interview included open questions about work and perceptions of sustainable development. The second part of the interview aimed to tie the wider discussion down to concrete descriptions of the dynamics of their system with participatory modeling.

Participatory modeling has mostly been used in formal public participation processes, which usually are done in large groups and contain quantitative modeling methods (Mendoza & Prabhu 2006). Cognitive or qualitative modeling, on the other hand, is considered appropriate as a scoping method to identify key concepts and variables. In this study, qualitative system analysis was applied to gain information about the perceived relationship between variables by adding a positive or negative value to the relationship (Haraldsson 2004). The interviewees were asked to draw models, using the method Causal Loop Diagrams (CLDs), not including a time range or space for change; rather it was to show the contemporary state of the system at the time of the interview. Four main steps were used as guidelines to the method:

- 1) Explaining the basics of CLDs with help of an example diagram that does not relate to the aim of the interview.
- 2) Clarifying the goal of the diagram: *Does local tourism practice make the community sustainable?*

- 3) The interviewee starts defining variables with help of questions, e.g. ‘what is important to know about the context of this system?’
- 4) The interviewee defines the relationships between the variables with help of questions, e.g. ‘which strategies are the most relevant to be able to meet these challenges?’

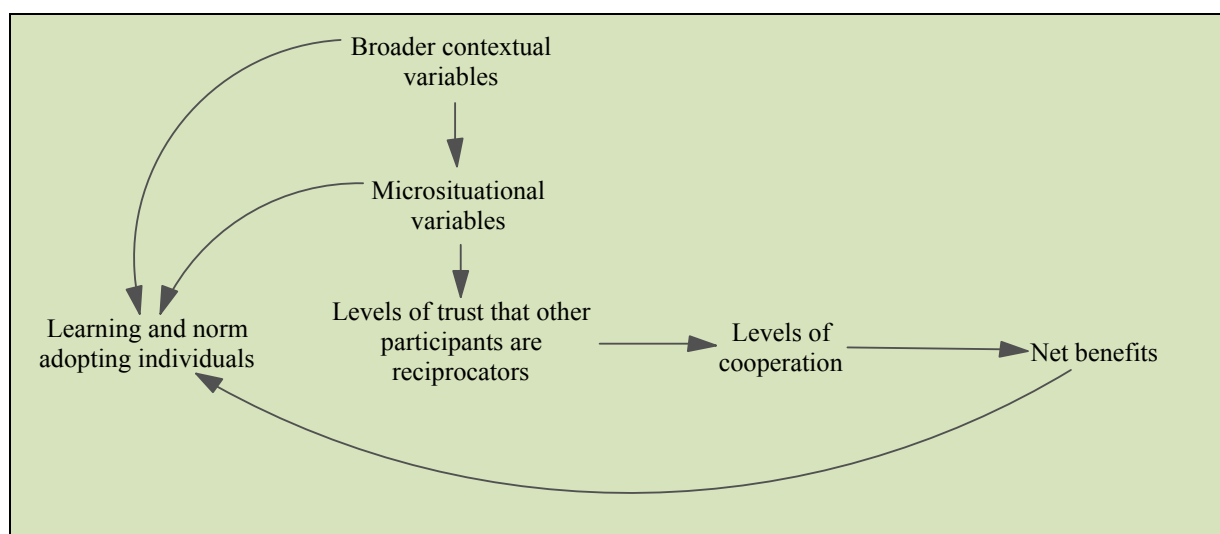
Fieldwork was done in Gunnarsbyn March 2<sup>nd</sup> – 15<sup>th</sup>, 2011. The participants represented all tourist hosts in Gunnarsbyn (table 1). They were chosen by purposive strategy, already established connections with people that could give the greatest possible insight into the topic in this area (Esterberg, 2001). This may be seen as a challenge to the role of a neutral researcher and creates a risk for bias. On the other hand the researcher did not have the possibility of choosing participants by any other methods since these individuals are the only tourist hosts in their community. The interviews were conducted in Swedish and translated in the transcribing process. The quotes provided in the following chapters are therefore a word for word translation. The translation and transcription was done by the author. The presented quotes were sent to the participants to be confirmed before publishing. Additional ethical considerations that need to be addressed are those regarding mutual reward of participation to both the researcher and the participants. The interview questions were designed in a manner that helped the participants reflect on their own situation and the participants commented that the outcomes of the participatory system analysis method provided them with an overview of their situation. During follow-up communication one of the participants, Tatiana, mentioned that she had used the results of the interview in her work in a municipal networking project. The correct names of the participants are used in the results with their permission.

**Table 1:** List of Participants

<i>Participants</i>	<i>Description of business</i>
Kurt Selberg Maria Prellwitz	<i>North Craft</i> : Cabins and catering, producer and retailer
Lorentz Andersson Carina Andersson	<i>Älvdalsturisten, Camp Svanis</i> . Cabins and catering company
Love Rynbäck	<i>Creative adventure</i> : recreation & outdoor adventure tourism company
Tatiana Rynbäck	Manager of Tourism Networking Project in Gunnarsbyn AND <i>Creative adventure</i>

As the subjects that were brought up in the interviews vary in scale and time perspectives it was decided to use *codes* to organize the transcribed content and compare the codes to *themes* inspired by the framework of conditional cooperation for sustainable use of common pool resources (Poteete, Janssen & Ostrom 2010), namely: norm-adopting individuals; reciprocity of other participants; cooperation and; net benefits (figure 3). In the analysis process, space was left for *categories* to emerge from the resulting participatory diagram (figure 4 in results).

The theoretical background to the conditional cooperation framework advocates that “humans do not universally maximize short-term self-benefits and can cooperate to produce shared, long-term benefits” (Vollan & Ostrom 2010: 923). It provides a pragmatic view of humans as norm-adopting, learning and dependent on reciprocity in the context that they live and work in. This opposes the rational-choice model that inspired the conventional theory of the tragedy of the commons where “individuals are assumed to have complete information about the structure of the situation that they are in”, and are thus “assumed to select the strategy leading to the best expected outcome for self” (Vollan & Ostrom 2010: 923). The analysis assesses the degree in which collective action in tourism in Gunnarsbyn is *conditional* if the variables support a reinforcing relationship between 1) norm-adopting individuals; 2) reciprocity; 3) cooperation; and 4) net benefits (Vollan & Ostrom 2010; Poteete et al. 2010).



**Figure 3:** Learning and norm-adopting individuals are attracted to certain situations, and then are affected by the behavior of other actors facing the same situation. Source: Vollan & Ostrom (2010).

## Research Limitations

The presented results address the perspective of tourist hosts and therefore do not describe the net benefits for other stakeholders in the community. However, it is important to keep in mind that the community is small and the interviewees also belong to other stakeholder groups. They are representatives of residents, residents that have other jobs, and residents that are active in local politics. The tourism sector is highly dependent on an outside market and is therefore practiced at a community level, regional level and international level simultaneously. Thus, when describing a system of local practice in tourism, it is impossible to exclude outside complications entirely. On the other hand the scope of this study is restricted to represent the perspective of the tourist hosts specifically. The components that are described are thus limited to the accounts of the tourist hosts and what they see as their system in everyday life. Due to this, the system boundaries were set on the community and these specific actors. Also, the study does not account for climate impacts of air travel.

## Results

### *Norm-Adopting Individuals*

*Why are tourist hosts in Gunnarsbyn practicing tourism in the manner that they do today?* The first research question aims to describe how the tourist hosts are i) *norm-adopting* in sharing common pool resources and; ii) *learning* in developing a practice that is sustainable for their community.

Common standpoints from the interviews emphasize that their practice is vulnerable because governmental and municipal policies in Sweden are centralized, and efforts in the Swedish periphery mostly serve traditional industries (forestry, mining, hydropower and agriculture). These efforts leave little attention to the tourism industry and limit the possibilities of tourist hosts to invest in their business and employ people. Work opportunities in the traditional industries are currently being substituted by technology and outsourced to foreign companies, especially forestry, thus “the effect is: fewer and fewer people that rely on the industry, which naturally leads to a demand for other industries to be reliant on” (Lorentz, participant). Six main reasons to why the interviewees think that the tourism industry is vulnerable in this area were deduced:

- i. Attitudes that indicate that working in tourism is not economically stable, which makes people prefer to be employed by traditional industries.
- ii. Employment tax is too high for small-scale tourism companies to be able to employ other people.
- iii. Employment policies in Sweden are centralized.
- iv. Services and infrastructure are centralized both on governmental and municipal levels and reaches the community with great inertia even though they are paying the same taxes.
- v. Despite active involvement in dialogue with politicians, influencing decision-making and policies has not been fruitful.
- vi. Marketing is essential for tourism, but tools for common marketing from government and municipalities are lacking.
- vii. Free movement through land provides freedom and opportunities, but it also creates the dilemma of sharing natural resources with larger industries, forestry, mining and agriculture.

The interviewees emphasized that current subsidized industries are in decline and do not serve a purpose for EA areas, and they have difficulties in seeing results of both national and regional politics locally.

Now they are saying tourism is the fastest growing industry in Sweden, well yes it is, then why don't you believe in the people who are willing to work in the industry? Why not give them the same prerequisites to work? [...] the cabin isn't supposed to be worth less because it's used for tourism or because it's built on a ground that you don't own, it doesn't make any difference, it's not like the material is less expensive depending on the definition of the ownership of the land, it's exactly the same, it's just that I won't get a loan from the state. That's one sentence that you need to change in the law that would change everything (Lorentz, participant).

The tourist hosts describe their position as the worst place to practice tourism and totally economically irrational. But since they want to continue living in the area, their hands are tied to

the system that they work within (Love, participant). Contributing to a changing community is about learning to manage with change (Folke 2006). In order to tell something about how tourist hosts in Gunnarsbyn understand sustainable development you need to understand *why they are practicing tourism the way they are doing today*. According to the interviews, the tourist hosts practice tourism with the goal of: 1) fulfilling the needs of their guests; 2) adding personal value to their work and; 3) following a code of conduct of working in the nature inspired by their own 'close to nature' lifestyle.

The interviewees were asked to describe specific practices in their everyday work and why they do them. Kurt resembles most of the interviewees when he says that in his work most of his time goes to: 1) Prepare wood and make fireplaces in the cabins, sauna, bonfire and outdoor bath; 2) fill the outdoor bath with water from the lake and; 3) prepare meals. Maria adds that the most important attributes are that "Kurt has built those houses where the people are staying, the food is homemade and locally produced and the guests are always pleased". This way a unique place for the hosts becomes a unique place for the guests. The joy of being able to provide this particular service in this particular place is thus the main driver for the development of the practice.

The interviewees emphasized that their activities are designed "according to nature" (Tatiana, participant). They feel obligated to meet ecological limitations while turning environmental goods into social goods, and a cultural experience. Furthermore, engaging in dialog with guests about the environment that they are currently sharing creates unproblematic awareness making, and can easily encourage a more pro-environmental behavior of both actors.

These messages reach us all the time scaring us, the catastrophes and the sudden weather changes, there must be a reason for all this. And if the explanation is that we soon have used up all the resources on our planet and consumed unnecessarily much, then that is horrible and we need to re- evaluate [...] that's why I think it is very important that the guests are with us in taking care of the place, and that they understand why we have the rules we have. We tell them that there is a set of thoughts behind everything, because we are concerned for the future of the lake (Carina, participant).

Concerning adapting to sustainability challenges, all of the interviewees replied with concrete examples of everyday practice. Love says that when organizing activities they always use local materials and service, "so that we can support local knowledge and capacity available in local micro-economies". He says that the supply that meets the needs of the company within the boundaries of Gunnarsbyn is only 10- 15%, "but if I look at it with a bigger parameter, about 100 km, we get most of what we need, so we use very few foreign producers for our company" (Love, participant). All of the interviewees seem to share the view that products and services for creating tourism experiences should be local. This is an example of how complicated sustainability challenges can often be simplified into individual efforts that make a difference. Adaptive planning is also visible in how the hosts attract visitors through own marketing.

### *Reciprocity*

*How do tourist hosts in Gunnarsbyn perceive common commitments to sustainability challenges?* The second research question aims to describe the levels of trust in that other tourist hosts are reciprocators in the vulnerability challenges described above, and commit equally to meeting these in the long-



term perspective.

The previous section described how tourism practice cannot easily be disconnected from the tourist hosts' lifestyle. The reasons are threefold: 1) they are living in symbiosis with the company; 2) the physical environment is their workplace at the same time as it is used for leisure time recreation and; 3) they want to contribute to their community in their work but do so also through choosing to live there. This kind of norm-adoptive integration of lifestyle and work indicates trust in a common code of conduct and a critical attitude towards other types of tourism practice. "You don't need to build a hotel or big constructions that consume the nature when you can make use of the resources that are already there" (Love, participant). All of the interviewees did in fact mention that their practice does not comply with mass-tourism, but that they want the same prerequisites as areas that practice mass-tourism. Finland's northern peripheries were a popular comparison because they share similar tourist attraction but have the prerequisites needed for expanding.

The described lack of trust in policies for external assistance has the effect that these tourist hosts put their hopes on the tourism industry and on the community. Kurt pinpoints the dilemma in this: "especially foreign tourists will just become more and more interested in the area. The less people that live here and the more deserted it seems, the more interesting the area is, unfortunately!" Furthermore, using natural resources as a tourist attraction in a sustainable manner creates a dilemma as increased demand and income is positive for economic development at the same time as increased demand increases the need for infrastructure and policies that enhance the carrying capacity of ecosystems and communities. If the conventional theory of the *tragedy of the commons* were to provide a solution to this, only external authorities could provide this. The problem is that they do not remember the development of the socio-ecological system in the same manner as local people and therefore they are not making any efforts to provide what is needed.

By contrast, the tourist hosts call for a combination of inputs from both external and internal sources. They talk about a need for new people that want to live in the community at the same time as they talk about a need for a community that remembers. It is evident that the generation that bridges these two is lost in Gunnarsbyn. As Kurt puts it: "Right now we are a community with a lot of capacity, but that capacity is in a population where too many are 65 and older. The community itself is dying out". This generation gap means that young people lack reasons to visit the north, and also lack incentives to want to live there.

We have been neglecting the jobs. Now there are not many jobs left, not up here in the north, and we have to take these jobs, not because they are bad jobs but because they haven't existed before [...] take the example of Ice Hotel in Jukkasjärvi, they have existed for 20 years but were not really acknowledged until 8 years ago, what were they doing the first 12 years? Exactly the same things as now, but all of a sudden they reach a threshold where the concept is accepted (Lorentz, participant).

It is evident that the Ice Hotel was accepted as an important source of employment by the time the company started accounting for revenue in millions, and the multiplier effect in the community in Kiruna became measurable. This is understandable considering that economic growth is the dominant measurement for development. However, the results of the participatory modeling in figure 4 show how uncertainty in tourism business development threatens the

economic stability of their socio-economic system of the community.

According to this, it would not serve a great purpose for external actors to use economic growth as an argument to change tourism practice in Gunnarsbyn. Rather, the interviewees seem more responsive to arguments of increasing social well-being of communities in the northern peripheries with the long-term perspective of increasing economic stability and increasing population density. In a way the interviewees promote a form of *development without growth* (Daly, 1996) when they say “we don’t need more money! Money is absolutely not a limiting factor! Just change the policies so that we have the same prerequisites to do our work! Provide us with the same base to start on as other industries!” (Kurt, participant). The described desire to live and work in the northern periphery is a concrete example of how sustainable development (as defined in ‘Our Common Future’, 1987) can play out in reality; namely the desire for development that meets the needs of the present without compromising the ability of the future to meet its needs, in this particular area. When asked about the future, Tatiana and Love agree that they will probably not live to see measurable results of their work. But they work for the future of their children, and “we have come quite far, if we accept that” (Tatiana, participant).

The tourist hosts do not see their situation of sharing common natural resources as a dilemma when communicating with other actors within the community. The dilemma situation is visible when communicating their needs to the larger system. The danger of choosing an alternative structure that maximizes short-term individual returns (Poteete et al. 2010) is thus not present in their current practice. Unofficial rules and strong norms seem important for monitoring their own actions.

### *Systems of Cooperation*

The third research question is: *What systems of collaborative action are important for meeting common sustainability challenges in the community?* While specific practices are important accomplishments for sustainability on an individual level, these also contribute to form strategies and norms that can prove important for sustainability of the community.

The tourist hosts cooperate by using local products and services to fulfill the needs of their guests. Love explained that cooperation was a part of his business plan from the beginning. The idea was a mobile adventure experience company that would produce services for other companies. “This accounts for about 30% of our work today [...] I cooperate with 150 other companies, that means that I can provide a wide range of things in many areas. I buy services from my colleagues, which means that they buy services from me, we help each other out to be able to service big groups and support each other. That’s a very central thing” (Love, participant). Maria and Kurt say that this is important to keep in mind if you arrive as a new part of the community, “so that you know where you fit into the puzzle”, “there’s no need to reinvent the wheel”. This dominating cooperation-instead-of-competition atmosphere is what makes the common culture in this tourism practice dynamic.

All of the interviewees have participated in different community projects in Gunnarsbyn. A recent accomplishment, an analysis of the local economy in Gunnarsbyn, is a comprehensive report of resource flows in the community (Rynbäck 2011). The main results of this project were three suggestions that would make the local economy more sustainable, which are now ongoing projects. One of them is Destination Råne Älvdal, a tourism networking project that aims to

coordinate all production and tourism products with common marketing, “to create our own identity and to find our customers, that is to highlight what is Råne Älvdal” (Tatiana, participant). In three years, the project will result in a functioning system of local tourism industry that emerges from the outcomes of cooperation of entrepreneurs. The project reveals initiatives that are considered important for the future of the community and therefore the central goal of the project is “to know that we got people on board and that it’s about common work” (Tatiana, participant).

Lorentz is a member of the Boden municipality council for rural areas. His work in the council is an attempt to create a link between community level goals and municipality level commitments that most of the interviewees considered lacking. He says that now is the time to invest in new infrastructure in the community; improvements would make Gunnarsbyn more attractive and sustainable for inhabitants and for visitors:

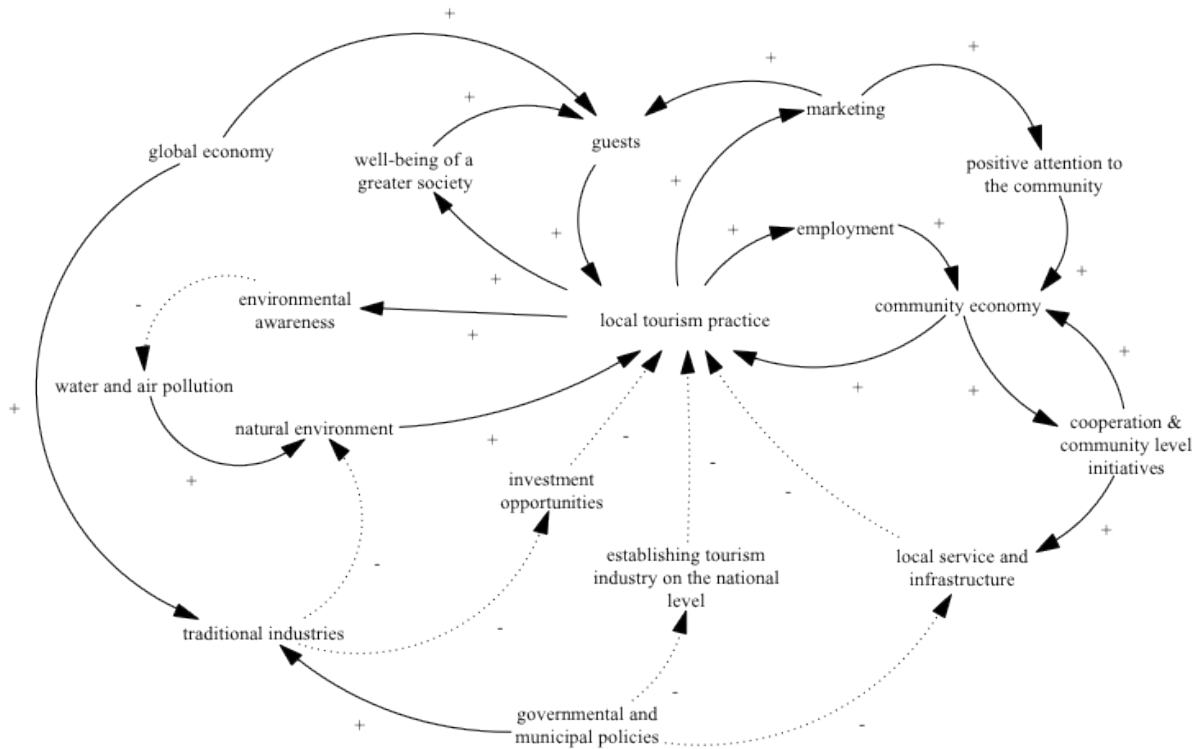
Compared to the situation now where there are two shops fighting for survival with no security. This is about sustainable development of our area [...] nobody says it’s a bad idea, but people are reluctant to build new buildings, it’s easy to think ‘yes well we can think of that next time we are building’ or ‘that seems expensive’. There is nothing that is too expensive today. I don’t see costs as a limiting factor in anything, absolutely not! Because if the costs steers everything that you do, there is no reason to even recycle, because it’s not for the money, it’s for being able to breath for 50 years more without gasmasks (Lorentz, participant).

According to the interviewees the problem does not lie in lack of money, rather the distribution. Therefore economic development needs to make sense in the local context. As an example, construction of a hydropower station in Råne river has been rejected many times by local organizations, at the same time as it is still advocated for as an important tool for development by the government. Accordingly, “a community will not flourish in the long term if growth in one form of capital is continuously at the expense of capital in another form. A resilient community is one that finds the appropriate balance of capital within a particular community context” (Callaghan & Colton 2008: 938-9).

### *Net Benefits*

The fourth reserach question is: *What are the net benefits of tourism practice for the community?* A clear goal for net benefits emerged from the themes in the interviews: being able to continue to live in the community. They seem to be adopting this goal, which in turn makes the community more resilient to external shocks and less dependent on changes in the larger system. Accordingly, disturbances have proven to create a reaction of opportunities for innovation and re-organization for development (Folke 2006). If there is a lack of interest from the outside, the interviewees act on the needs of the community, in a way bypassing the national system.

The four qualitative system dynamics models that the tourism hosts drew have been compiled in figure 4. The following is a narrative of the emerging components (emphasized with italics) and their relationships that either indicate a reinforcing dynamic (contain only relationships with + arrows) or a balancing dynamic (contain more – relationships than + relationships).



**Figure 4:** Results of the participatory qualitative systems analysis: Does tourism practice make the community sustainable?

The most important competing power of *local tourism practice* is the vast and relatively unspoiled *natural environment*. Free access to common pool resources creates a common informal code of conduct which requires an environmental behavior of both tourist hosts and guests that increases *environmental awareness*, which eventually results in less *water and air pollution*, which in turn increases the value of the local *natural environment*. Welcoming guests to experience the EA environment transforms environmental goods into social goods which contributes to *well-being of a greater society*.

The tourist hosts engage in *marketing* on their own since marketing strategies based on governmental and municipal policies focus on *establishing tourism industry on a national level* and are not sufficiently effective locally. *Marketing* reinforces both the flow of *guests* and brings *positive attention to the community*, which contributes to increase the population density, crucial for reinforcing the *community economy*. The *community economy* is thus reinforced by employment, marketing and in addition *cooperation and community level initiatives*. These are reinforcing for the local tourism practice but since they are vulnerable to policy constraints have a relatively low impact. *Cooperation and community level initiatives* are necessary to obtain and maintain *local service and infrastructure* since governmental and municipality level inputs are insufficient.

The relationships explained above are all reliant on the tourist host's ability to continue living in the community, and evidently their ability to continue their *local tourism practice*. The relationships that emerge with involvement of *governmental and municipal policies* are more balancing than reinforcing. These prioritize forestry, mining, hydropower and agriculture, grouped as *traditional industries*, which makes tourism economically vulnerable. Limited *investment opportunities* for tourism decrease possibilities for tourism to serve as an employing industry in the community. Sharing the *natural environment* with forestry directly decreases the *natural environment* since Sveaskog is

obliged to cut 5% of their forest holdings every year. Sveaskog also threatens the ability to continue working with *local tourism practices* through the authority to increase rent or sell land without notice. The *global economy* is an important component as it does provide an input to tourism practice, with more *guests*, but it also reinforces *traditional industries*, a process that is much bigger than the local tourism practice.

## Discussion

Love told me when we moved here that we would probably not see results within 20 years, and I didn't believe him, comparing to where I come from, Ecuador, South America's third poorest country, my point of reference was totally different both for the possibilities of the tourism industry and for Sweden, I thought I was coming to one of the most developed countries in the world, but in terms of tourism, there is nothing (Tatiana, participant).

The framework of conditional cooperation includes that "behavior is more directly influenced by micro-situational variables, which in turn are more influenced by the broader contextual variables" (Poteete et al. 2010: 220). The tourist hosts in Gunnarsbyn had no problem identifying relationships between micro-situational variables and broader contextual variables within their socio-ecological system, defining these as either reinforcing (creating net benefits), or balancing (working against development of net benefits). The main driver of reinforcing relationships is the common interest to continue living in the community and continue working with tourism. Together the tourist hosts create community capital in projects and initiatives in tourism that have net benefits in the community although they say that these are small in scale and develop slowly.

It can be concluded from the interviews that the tourist hosts have a high propensity to conditional cooperation and are capable of producing shared sustainable benefits for their community. Each participant is confident in the reciprocity of other tourist hosts in the community and agrees that main dilemmas in their practice involve communication with national level or global actors. Thus, they support the acceptance of a new behavioral theory, that "if enough individuals initially cooperate, they slowly obtain benefits from the [natural resources], and levels of cooperation grow" (Vollan & Ostrom 2010: 924). In the projects that are facing them right now, each of the interviewees are leaders for increased cooperation and increased sustainability of the community, and are slowly changing the acceptance in the rest of the community to manage and maintain the common natural resources locally.

This does not mean that they are immune to disturbances like distance to market, lack of infrastructure and service and an aging population. The national level system still makes the rules for their work. This could be interpreted in several ways: 1) rules established by an external authority that "crowd out" the group's motivation to cooperate (Vollan & Ostrom 2010: 924) and makes them pessimistic about the future of the community; 2) a systematic lock-in that disables the community's resilience to handle shocks or expand in their work, "My hands are tied to the system that I work within" (Love, participant) or; 3) a system that provides opportunities for their work and cooperation in terms of e.g. financial support for development projects, leasing of land and free access to use land for tourism and own recreation activities. Adding to the complexity of things, the answer is indeed that the national level system provides pathways to all three options. In the future vision deducted from the interviewees' accounts one thing is clear:

sustainable tourism goals cannot be disconnected from the goal of sustaining the community. Thus can tourism function as the empowerment needed to activate drivers for sustainable development of Gunnarsbyn on a local level.

## **Conclusions**

This study is descriptive of the infrastructural and demographic vulnerability involved in livelihoods and tourism development in European Arctic regions. The main outcome of this study is that tourism is a strategy to cope with geographical and political vulnerability but the problem is that the tourism sector is also vulnerable in itself. The interviewees have confirmed this by emphasizing that both their community and the tourism industry are of low priority in national politics.

In order to explain how tourist hosts understand sustainable use of common natural resources in their context, the analysis included accounts of 1) their current practice, as a description of an ongoing practical accomplishment in reaction to both local and global sustainability challenges; 2) the vulnerability involved with tourism practice in this place and; 3) their dependence on common pool resources. It became clear that vulnerability is involved with the entire complex system of their choice of lifestyle and practice. The tourist hosts do not see their situation of sharing common natural resources as a dilemma when communicating with other actors within the community. The dilemma situation is visible when communicating their needs to the larger system. The problem of insufficient infrastructure does not lie in lack of money, rather the distribution. The community norm seems to be supportive of a lifestyle of common commitments to deal with long-term sustainability challenges.

The methodological contribution of this study was to apply qualitative participatory systems dynamics to the theory of conditional cooperation for sustainable use of common pool resources. The micro-situational and broader contextual variables that were accounted for by the interviewees proved relevant to make the assessment that cooperation is in this case conditional: tourism can function as the empowerment needed to activate drivers for sustainable development of Gunnarsbyn on a local level.

The approach of micro social constructionism became relevant to the core questions of sustainability science as it puts personal accounts of work in relation to sustainable development of communities. Further investigations of approaches that identify context-specific conditions that enhance shared long-term benefits are needed. Suggestions for further research thus include studies of other peripheral areas in Northern Europe and a comparison of their strengths and weaknesses in developing cooperation for sustainable use of common natural resources. Further research should also include other stakeholder views and elaboration of how the policies that are mentioned in this study have influenced livelihoods in European Arctic regions.

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