

## Why tourism in Aurland has to change and tools to initiate the process

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**Abstract:** This paper analyzes the tourism system in Aurland, Norway, from a System Oriented Design (SOD) perspective. The report examines the relationships between locals, tourists, and nature, identifying imbalances, structural issues, and opportunities for more sustainable and regenerative tourism. Based on fieldwork, gigamapping, horizon scanning, and scenario building, the study proposes leverage areas related to nature, local identity, tourism reframing, and infrastructure. The document is intended as a conversation opener and project starter for stakeholders collaborating toward long-term, sustainable transformation of Aurland's tourism model.

**Keywords:** Aurland - tourism - sustainable tourism - System Oriented Design - regenerative tourism - Norway

[Abstracts in Spanish and Portuguese on page 212]

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<sup>(1)</sup> See CVs on pp. 212-214

### The world is changing And so must Aurland

New laws, agreements and regulations worldwide have forced us to adjust how we think and act locally. The United Nation nature agreement recently signed in Montreal describes what measures are needed (FN, 2022). The Norwegian government has already started the action plan to preserve nature (regjeringen.no, 2023), and it has at present stopped and put several development projects on hold (NRK, 2023). The 2026 zero-emission policy for the world heritage fjords directly affects Aurland region, restricting cruises and ferries that do not fill the requirement to come, preventing a big part of the tourists from visiting (Nilsen, 2022).

This is only the beginning, and Aurland will need to adapt to the rapidly shifting future reality. To be prepared for what is ahead is essential in order to be in control of development, maybe even have a world leading role in sustainable tourism. By starting today, we can change the future. But for this to happen we need to come together with a common vision on how we want the future to be.

The main goal of this project and report is to be a tool for NATURACT to use as a conversation opener and project starter for Aurland municipality to talk about internally, but also with collaborators, to discuss the possibilities for Aurland's biggest industry: tourism

“We need to make sure that all use of nature happens within the planet's boundaries”

– regjeringen.no

## Aurlands history

Aurland is a Norwegian municipality by the western fjord, Sognefjorden, among steep mountains. There have been people living in the area for several thousand years, and it is world known for its incredible nature. Being a rich municipality from nature's side, there has always been people showing various types of interest for the place.

Tourism already became important to the community around 1850 with rich lords from England coming over to go fishing, and there had been a lot of travelers earlier due to the postal road from Bergen to Oslo. From the building of Flåmsbanen, a railway from the mountains and down to the fjord, the municipality and especially Flåm had a significant amount of tourists, and it grew every year. The municipality also became important within Norwegian tourism.

Gradually expanding the infrastructure for tourism, the municipality became important in Norwegian hydro energy too in the 60's, and the money was not half bad. In the 90's they developed a group called Aurland-ressursutvikling (today Norway's Best\_) in the context of buying fifty percent of Flåmsbanen to prevent it from shutting down. NSB in this process made a deal with Aurland that Flåm will build a big cruise harbor and lots of parking lots. In 2005 UNESCO announced Nærøyfjorden part of their World heritage list. (Ohnstad, 1994)

Every year around 1.5 million tourists visit the small town Flåm with a population of 1771 inhabitants (SSB, 2022) making it one of the top five most visited harbors in Norway. In 2019 the tourism sector in Aurland generated 1 billion NOK, a peak before the pandemic hit. (Visit Norway, 2019). These are big numbers for a small town, and we understand that tourism is of high importance and that it is here to stay.

## Process

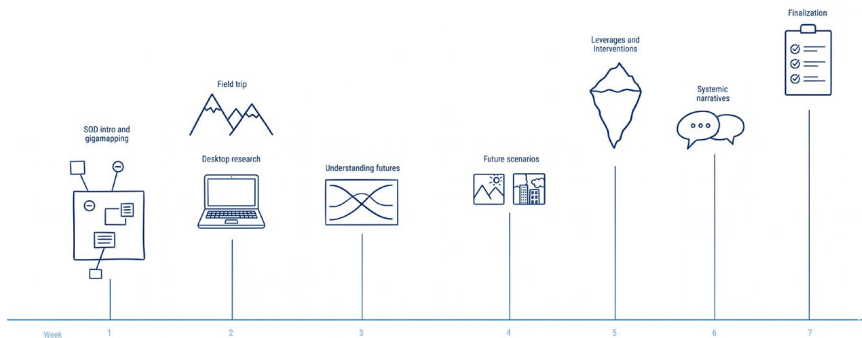
### System oriented design

System oriented design (SOD) is a way of approaching complexity. Aurland municipality is a good example of a complex system where things are connected and rooted deeply, making it difficult to see what needs to be done. In this project we have used SOD to tackle the complex system that Aurland municipality is.

SOD is about seeing the invisible and designing for it. With this in mind we started touching the surface of what seemed to be problematic about tourism in Aurland, especially visible in Flåm, and digging our way through the layers. We also had to keep in mind that Aurland, like every other place on earth, has a global responsibility when it comes to nature. Not only through UNESCO, but also through the general push towards a future after the climate crisis we now are in.

The methods we have been presented in SOD have helped us find interesting areas to explore, possibilities that lie within the municipality and challenges that are preventing change. By uncovering the possibilities and challenges we got an understanding of what needs to be solved first for other things to follow, what is and where to find the drivers to create the wanted change.

This is an overview of our project and the methods we have used during our seven week project to help plan a better tourism industry in Aurland.



**Figure 1.** *The methods we have presented*

1. "SOD intro and gigamapping". 2. "Field trip". 3. "Desktop research". 4. "Understanding futures". 5. "Future scenarios". 6. "Systemic narratives". 7. "Leverages and interventions". 8. "Finalization"

## Insight

### Our lens

#### Harmony between locals, tourists and nature

When mapping our assumptions and what we knew about Aurland, we saw an imbalance between nature, the locals and the tourists. The locals are dependent on the tourists being a big source of their income and work, while the tourists are the main reason for pollution and strain on nature in the area.

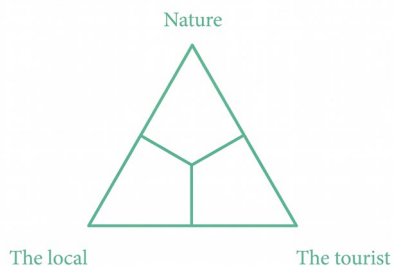
We made a hypothesis: A balance between locals, tourists and nature is needed for a sustainable, even regenerative future for the tourism sector in Aurland.

For our further studies we wanted to research the relation between them, is there space for all three, without one of them being neglected... How can they coexist in harmony?

We have tried to use this as a lens throughout the project when evaluating our work and findings. This has been to make sure that all three perspectives always are considered when developing our understanding of the challenges regarding tourism in Aurland.

#### *The three perspectives*

In order to take these perspectives, we had to understand them. As an attempt to gain a deeper understanding of their interests and needs we wrote a story from each perspective.



**Figure 2.** *The three perspectives.*

#### *Nature*

A big system of things all connected and using each other can withstand all, but also changes dramatically under high pressure. An ever dynamic symbiosis of living material and great natural power. Now reduced to a slave for one part of itself. But Nature is powerful and will always find a way to restore balance, even by killing off some of its own.

### ***The Aurlending***

The small villages with their proud inhabitants have many suitors at the door who want to get a piece of the pie, but the people of Aurland always have each others back and find a way in good times and bad –together they are less alone. The people of Aurland will always long for home, for the safety and closeness of a tiny community nestled between mountains and fjords.

### ***The tourist***

The tourist looks for something other than home. Sometimes they are looking for comfort, other times for something unique. The tourist can feel lost when approaching the unknown world, and sometimes needs the safety of a guide. This can help them understand what they are witnessing and participate in the experience. They bring small pieces of the places they visit home to tell stories. When a tourist enjoys an experience the word travels fast and others follow.

## **Insight**

### **Trip to Aurland**

#### ***Experiencing Aurland***

During our trip we were fortunate to visit a variety of places around Aurland, and document it through mapping, photography, notes, drawings and conversations. The locals we have spoken to mainly live around Aurlandsvangen, and their input has benefited our project greatly helping us to understand the locals perspective on tourism in general and especially in Flâm. Several locals from Undredal for example specify how they would like to avoid Flâm-tilstander/conditions.

We discovered the pride the locals take in their own professions, tight-knit community, and local collaborations. We also sensed a collectively strong vision for the future, observed by the sparked enthusiasm connected to this topic.

However, by putting ourselves in the shoes of the tourists, we also discovered the downsides and the factors that caused frustration. Due to the lack of public transport, traveling outside Flâm is difficult without a private car both for locals and tourists.

What we also noticed were the big empty parking lots for the seasonal mass tourism which stood empty and unused during winter. The seasonal tourist system makes it difficult to find all year jobs and permanent housing, making Aurland incredibly dependent on high-season mass tourism. This was also why Covid took such a toll on the municipality.

As we suspected earlier, we reached the conclusion that tourists and mass tourism take a toll on both nature and the lives of the locals, and their needs for personal space.

## Insight

### What's going on in Flåm today?

This is a gigamap of the current situation in Flåm. These are the main five categories that concern the tourism sector.

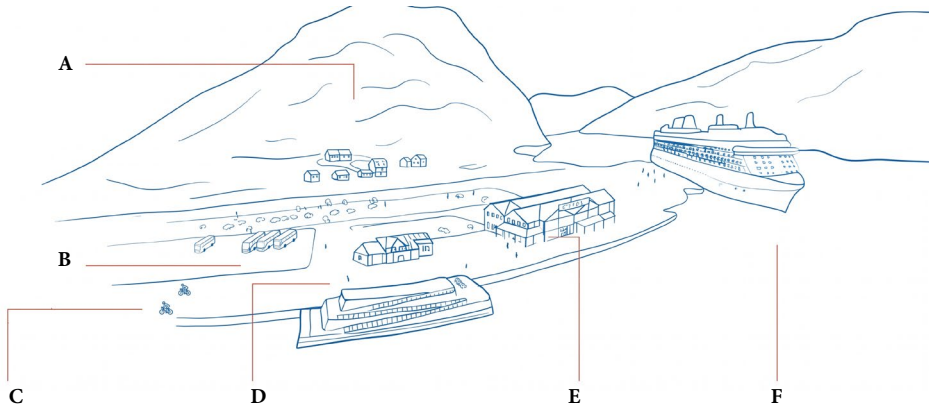


Figure 3. Gigamap

#### A. Locals

Aurland's locals may have different views compared to Norway's Best or the municipality, but there is a general consensus that tourism is here to stay. But how will it look with the 2026 zero-emission regulation? The locals living there are familiar with each other and seemingly willing to collaborate despite different political stances.

#### B. Infrastructure

The spatial usage in Flåm is mostly used for the tourism sector and is of little value to the locals. Among other things, huge, empty parking lots in the winter and strained capacity in high season, shops and restaurants dedicated to tourists.

#### C. Activities

The tourists come primarily to see the fjords. Most activities are adjusted to fit tourists on short visits and not locals, for example riding The Fjords, the Flåm train, Zipline, Fjord-safari and visits to the tourist shops.

***D. Food***

There is little demand for restaurants since Flåm is seen as a short pit-stop. Although there are locally produced goods, most of the food is imported. However, there are local initiatives such as Sakte, Steinbergdalshytta and Marianne's Bakeri who focus on eco and short traveled products, but they struggle to reach out to tourists.

***E. Accommodation***

Flåm has become a pit-stop, which means most people visit without a plan to spend the night and therefore leave little money in the town (especially cruise tourists). There is a variety of accommodation, including hotels, camping areas and hostels.

***F. Transport***

There is a lack of public transport between Flåm and the other towns, making it difficult to explore and support places beyond Flåm. It is difficult for locals and tourists to move around without a private car.

**Horizon scanning****Problems and potentials*****Tvangstrøyen***

After the 2005 UNESCO announcement of Nærøfjorden as part of the World Heritage list, tourism in the area became more popular than ever. This started the process that in many ways led us to where we are today: a conflict of interest and lack of respect between nature, locals and tourists.

Our understanding is that the locals do not feel ownership of their main industry: tourism. The industry feels big and uncontrolled, leaving the locals feeling lack of power and making it easy to keep to short term planning and prioritizing the tourists' needs above their own when it comes to development, local societal needs and spatial usage. This is also fueled by the notion that more is better.

The locals do not feel responsibility for nature either, because nature has become a distanced object kept mostly for the tourist gaze. Nature is the center of attention for tourists, but the more tourists, the less nature can thrive.

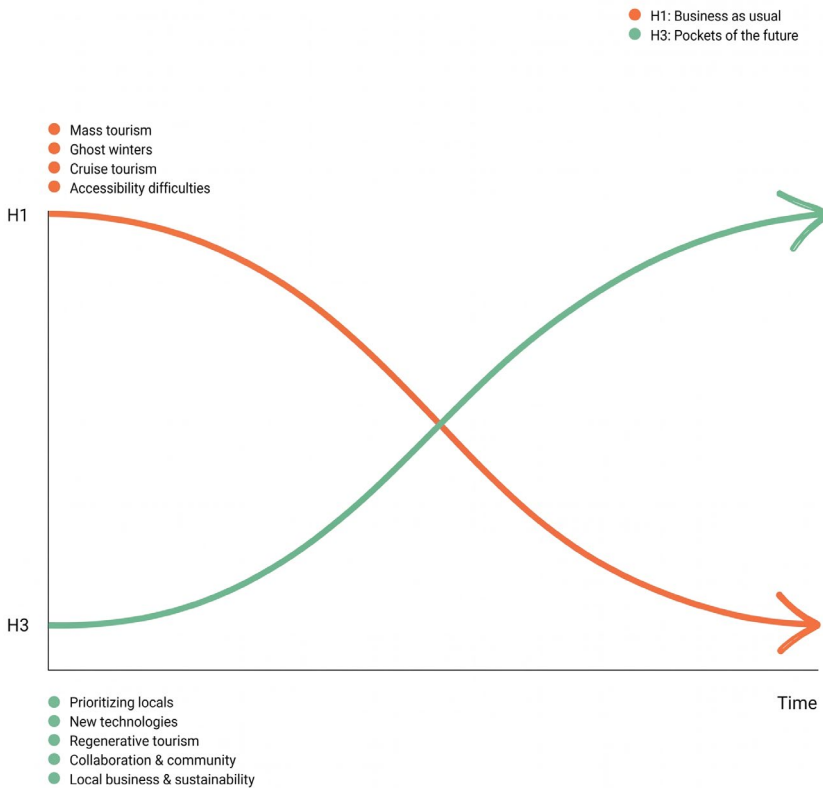
When Nærøfjorden became part of UNESCO World heritage, nature was not sufficiently taken into account. The acknowledgement is a source of pride for the locals and good for business, but it caused many more tourists to come... without considering the strain on nature and culture.

***Horizon Scanning***

By knowing the current state, it was possible to map out the challenges and potentials in the municipality. What do we want to keep in the future and what do we want to leave behind?

To really see the cause and effect from these events, we created future scenarios based on the H1 and H3 in our map. So, what happens if we continue with business as usual to create the utmost undesirable future or if we use the pockets of the future to create the utmost desirable future?

On the next page you will see two possible futures stretching from today to 2050. The events we used are not real, but a part of getting an impression on how things might have turned out if we went strictly in one direction or the other.



**Figure 4.** Our most important stakeholders

The horizon scanning method helped us see more clearly what we want to decrease over time (H1: business as usual) and what we want more of in the future (H3: pockets of the future)

## Horizon Scanning

### Undesirable future scenario

This scenario is based on the values of rapid profit, privatization and commercialization. The goal for the undesirable future is maintaining mass tourism and maximizing profit and increasing efficiency.

#### *Business as usual*

The events are inspired by parts of challenges we see in Aurland today. In this scenario there is a hierarchy where tourists are towering above locals and nature. Everything is planned based on the tourists' needs and comfort, the municipality facilitates mass tourism in order to keep up the earnings, and the locals lose ownership and control to private and foreign investors making them flee town.

### **The tourists are happy, but the locals have had enough! (Sogn avis – Tysdag 3 mars 2035. This is a simulated newspaper article)**

#### *Torstein has lived in Flâm for 40 years, but now he is moving*

Flâm, a picturesque village nestled in the fjords of Norway, has seen a surge in tourism in recent years, attracting millions of visitors from around the world. However, for Torstein, a lifelong resident of the village, the growing crowds have become too much to bear. "I've lived in Flâm for 40 years, and it's a place that will always hold a special place in my heart," says Torstein. "But the influx of tourists has changed the village beyond recognition. The streets are now overcrowded, prices have gone up, and it's become increasingly difficult to find peace and quiet." Torstein's decision to leave is a reflection of the growing frustration among many residents of tourist hotspots, who are struggling to keep up with the pace of change. The local authorities in Flâm have been working hard to manage the impact of tourism, but they acknowledge that it's a challenging task. "We're aware of the concerns raised by residents like Torstein, and we're doing our best to balance the economic benefits of tourism with the need to preserve the character of our village," says the mayor of Flâm. As Torstein prepares to leave Flâm for a new life in a quieter part of Norway, he looks back on his time in the village with mixed emotions. "I'm sad to be leaving behind a place that has been my home for so many years, but I know it's the right decision for me. I just hope that Flâm can find a way to protect its unique character, despite the growing pressure of tourism." The story of Torstein is a reminder that while tourism can bring many benefits, it can also have significant impacts on local communities, and it's important for both residents and visitors to work together to ensure a sustainable future. "I've lived in Flâm for 40 years, and it will always hold a special place in my heart, but the influx of tourists has changed the village beyond recognition. The streets are now overcrowded, prices have gone up, and it's become increasingly difficult to find peace and quiet." -Torstein.

The gondola is a successful tourist attraction The new hotel and gondola system in Flâm has become a source of contention between tourists and locals. While visitors are eager

to experience the stunning views offered by the gondola, some residents are frustrated with the increased tourism and its impact on the once peaceful community. Gunda Flâm, a local resident, has been vocal about her dissatisfaction with the new development. She states that the influx of tourists has brought noise, traffic, and other nuisances to the town, detracting from its peaceful and natural beauty. Despite these complaints, the hotel and gondola continue to be a popular attraction among tourists. Officials hope that the increased tourism will bring much-needed economic growth to the area. As the tourism industry continues to grow in Flâm, it will be important for officials to find a way to accommodate this growth while also preserving the unique qualities that make the town so special. Only time will tell how this situation will be resolved and what the future holds for Flâm and its residents.

## Horizon Scanning

### Desirable future scenario

This scenario is based on the values of community, circular economy, nature and respect. The goal for the desirable future is to achieve a balanced society where locals, tourists and nature live in harmony.

### *Pockets of the future*

The events are inspired by parts of possibilities we see in Aurland today. In this scenario there is a mutual respect between the locals, tourists and nature. These events look at ways to strengthen the local community, make tourists generate value to the local society and nature, not only monetarily, and look at ways to use new technologies. The events create a society where all needs are satisfied without compromising one.

### **Aurland eco-municipality has received world status as the best municipality to live in in 2035 (Sogn avis – Tysdag 3 mars 2035. This is a simulated newspaper article)**

Aurland, Norway, has received world recognition as the best municipality to live in, according to a recent study conducted by the United Nations. The study, which was released on the 2st of March 2035, evaluated municipalities based on a range of factors, including environmental sustainability, quality of life, and economic prosperity. Aurland was the clear winner, outpacing other municipalities from around the world. Lise Stegastein, a long-time resident of Aurland, has never seen anything like it. "I am so proud to be a part of this community," she said. "Aurland has always been a special place, with its breathtaking natural beauty, strong sense of community, and commitment to sustainability, but to be recognized on a global scale is truly incredible." The recognition of Aurland as the best municipality to live in is a testament to the efforts of the local government and community to prioritize sustainability and quality of life. The municipality has implemented a range of

initiatives aimed at reducing its carbon footprint and preserving the natural environment, including the use of renewable energy sources and the protection of wildlife habitats. In addition to its commitment to the environment, Aurland also offers a high quality of life to its residents. The municipality has a thriving local economy, with a focus on sustainable tourism and the production of locally-sourced food and products. The community is also closely knit, with a strong sense of cooperation and support among its residents. Aurland as the best municipality to live in is a significant achievement, and it is a source of pride for the entire community. Lise, like many others in Aurland, is looking forward to continuing the municipality's efforts to promote sustainability and improve the quality of life for its residents. This recognition serves as a shining example for other municipalities around the world, demonstrating that it is possible to prioritize the environment and quality of life while also achieving economic prosperity. The world can learn from the success of Aurland and strive to create more sustainable and livable communities. Goat festival 2035 – an event to remember. The 2035 Goat Festival in Flåm Aurland was held on the 1st of March and was a unique event that showcased the municipality's commitment to sustainability. The festival incorporated environmentally-friendly initiatives, such as the use of renewable energy sources, waste reduction, and the promotion of local products. Ove Årdal, a local resident and goat herder, was impressed by the changes made to the festival and praised the focus on sustainability. The festival also celebrated the traditional culture and heritage of Flåm, with a parade and the goat race, which was won by a goat named Tindra. Tourists from around the world flocked to the Festival, and many of them were equally impressed by the event. Emma Müller, a tourist from Germany, was one of many who was amazed by what she saw. "The combination of tradition and sustainability was truly unique and I was so impressed by the efforts made to protect the environment. The goat race was a highlight, and I was amazed by how fast the goats were!"

## Problems and leverage areas

### How to drive change?

In order to prevent the undesirable future from happening and make room for the desirable one it is necessary to understand what the problems really are and where it is most effectful to create change.

By analyzing our research, results from methods and scenarios, we extracted the ten most pressing problems and divided them into four leverage areas, areas where the change must happen. These are strain and pollution, identity and community, current tourism and infrastructure.

#### **1. Pollution and strain**

Nature first: We need to conduct long-term planning with nature's need as the fundament to create a just and good future for everyone.

P1. Tourism creates pollution and strain on nature.

## **2. Identity and community**

Strengthen identity: We need a common vision, understanding and feeling of ownership and belonging for change to happen.

P2. There are few social activities that are attractive for both tourists and locals.

P3. Cruise tourism has taken over Flåm and the locals no longer identify and feel belonging to the place.

## **3. Mass tourism**

Reframing tourism: We need to change what and how tourism is to get a more sustainable and resilient municipality and tourism sector.

P4. Local businesses have great potential but do not manage to reach out to tourists.

P5. Flåm has become a pit stop. Tourists take advantage of Flåm's resources and bring little value to the local community.

P6. Flåm is a summer destination which leads to ghost town during winter.

P7. Fear of losing profit and jobs due to the zero emission regulation preventing cruise ships from visiting.

## **4. Infrastructure**

Rebuilding infrastructure: We need to look at spatial usage in Aurland to direct the flow of people and create services and constructions that are benefitting for both locals and tourists.

P8. Spatial usage in Flåm is mostly beneficial for tourists.

P9. It is difficult and inconvenient to get around Aurland without a car.

## **Leverages and interventions**

How to navigate towards a better tomorrow?

Now that we have laid out the leverage areas, the next step will be to take action to navigate towards a better tomorrow.

We believe that it is important that the locals are heard and actively a part of change together with Aurland municipality and other stakeholders in order to develop a safe and good municipality to live in and to create an ideal tourism sector for everyone.

On the next pages we will elaborate on the different leverage areas and explain why these are the most effective to work with.

These align with the principles in UNESCO World Heritage and Sustainable Tourism Programme...

At the end of each leverage area we have created cards that work as tools to initiate the process –conversation and project starters– to spark inspiration and discussion on how and which changes will be beneficial for Aurland.

## 1. Nature first

### *Planning with nature for our great-grandchildren*

In the face of challenges like seasonal instability, brain drain and climate change, it is clear that change is essential for the sake of the municipality's longevity. At the present moment nature is often overrun by other interests such as short-term, rapid economic growth. What once used to be a flourishing natural paradise is compromised and pushed beyond what is responsible to pursue business as usual. This has happened to Aurland, especially in Flåm and is not sustainable and beneficial for nature and the future. Short term planning will leave Aurland vulnerable to not only natural catastrophe, but also societal collapse in the municipality.

The community needs to stand together and have a common vision for the future. Nature takes no sides and is the reason we can exist, but it is also the most vulnerable. Planning the future by putting nature first will ensure that everyone's fundamental needs will be taken into account.

### **Project starter**

#### *Ecosystem*

Aurland is an ecosystem, and it is important that every aspect and components are taken care of and nurtured to maintain a working and healthy community. We need to build a community that can withstand external factors intervening and global instability, for example if another pandemic hits. We need to take care of the community as a whole to create a resilient community, because when the tourists are gone, the locals are the ones that are left.

How can Aurland stay resilient despite global crises?

#### *Long-term planning*

We have seen that short-term planning only benefits our own generation and therefore is not sustainable. Planning without understanding the whole picture, leaves a mess for the future generation to clean up. Having a long-term mindset with nature at the core, ensures a future for the next generation in Aurland. Planning not only for the next five years, but also thinking of how today's implementations will look like in fifty years, helps the decisions we make today to also be beneficial for the next generation. What does the Aurland that we want our great-grandchildren to grow up in look like?

#### *Finding the balance*

Although tourists benefit the municipality greatly economically, it can also put extra strain on the landscape and locals' lives and culture. We need to think of ways to cover the needs of all three perspectives without suppressing another. Designated tourist paths and areas may give the locals and nature the place they need to breathe, whilst also satisfying the travelers wanderlust. We need to find a way to maintain Flåm's capacity and prevent the town from being over capacitated. How can we create balance between the locals, tourists and nature?

### ***Responsibility***

We need to start being responsible for our actions and interventions in nature. Nature has the ability to restore itself if it gets the time it needs to recover. But with the massive amount of tourists coming every year without knowledge on how to behave in nature, parts of it will quickly lose this ability. Regulations and contracts might be means to preserve and protect nature by encouraging and sanctioning tourists that disrespect local and nature's boundaries. Tourist tax has been implemented in other places and could be used in Aurland to fund preservation and restoration of nature, local infrastructure projects or support sustainable tourism practices. By being mindful and taking responsibility for our actions, we can keep nature healthy. How can we ensure that nature is protected in the face of curious tourists?

## **2. Strengthen identity**

A common identity to strengthen the community Up to two boatloads of tourists arrive in Flåm every day throughout the summer months, spewing out thousands of tourists. Cars and buses are standing in line to park, and trains are arriving countless times every day in such a small place. The locals have lost their voice and drown in the tourist masses. They retreat from Flåm centrum which now feels more like a tourist factory. Aurland's identity has been diluted in a mix of viking tales, souvenir shops and weirdly framed narratives that do not necessarily have any authenticity and connection to the place, history and people. This makes it difficult for a tourist to comprehend what Aurland is and the locals are not given the chance to show what they have to offer. Many may have lost touch with the history and culture that is the foundation of this unique community.

By strengthening the common identity and vision, people will get a sense of belonging and connection to Aurland as their home. We want the locals to be proud of their heritage and eager to tell it to their visitors, making them want to come again and again.

### **Project starter**

#### ***Heritage and identity***

Aurland not only has incredible nature, but also a unique history that spans over several centuries. There are a lot of unique traits and characteristics that is hidden in the Aurlander's heritage. Building a strong brand based on local history and traits is a chance to be known for something else than cruise tourism that many associate the area with today. This is a possibility to decide what we want our visitors and outsiders to remember us for and associate us with, and give everyone that visits and lives in the area the feeling of being in Aurland, and not anywhere else in Norway. It can also help promote a sense of pride and attachment among the residents and cultivate a strong sense of community. What is unique about Aurland and what do we want to be associated with?

### ***Information***

What information the visitors receive may influence how they feel about a new place and their impression before, during and after visiting Aurland. Information is not only about handing out brochures about the area, but also what stories they are told, what food they get to taste and what activities they can participate in. And if the tourists understand what they are experiencing, it may enhance the overall experience and create a more meaningful and authentic travel experience for them, which can attract more tourists to the area. Information in a variety of forms can help promote Aurland's cultural heritage and make sure to differentiate from similar tourist destinations. What do we want the tourist to know, leave with and tell others about Aurland?

### ***Events***

One part of building a local identity and brand is creating events and happenings that enforce the vision of who Aurland wants to be and what they want to be associated with. There are lots of potentials that are truly unique to Aurland that appeal to residents, local and foreign tourists. What about a goat festival, a cheese week or workshop for young entrepreneurs passionate about ecotourism? It is an entrance to invite ambassadors and visitors that are interested in Aurland's values and traditions, for them to participate and help promote their brand. A happening like this may generate jobs, make youth stay and be a starting point to build a community around. What events can be arranged to build a stronger community and identity?

### ***Local voice***

Changing structures in a community is a big intervention, and it is important that the people it concerns are involved before acting out on big decisions that affect their lives. In a small community, participation and involvement is crucial to find a common vision and to build an attractive place where people are proud of living. By creating arenas for people to share their voice, it can help foster a sense of connection to the community and social cohesion. These might be spaces that encourage collaboration towards common goals and a way to identify needs, wants and initiatives that benefit the community in alignment with the Aurland Kommuneplan.

How can we create an arena to share opinions and spark local engagement in Aurland?

## **3. Reframing tourism**

Tourism is a valuable resource There is no doubt that tourism has a significant positive impact on the economy of Aurland municipality, but today's way of tourism has made Flâm a pit stop, a small part of a greater journey, on the way further into the Norwegian fjords. The frame of tourism today builds on fast and easy experiences designed for people of all ages and backgrounds. This does not sound so bad, but the consequences are a dilution of local culture and a streamlining of the tourist experience. All new buildings and facilities are aimed at the tourists, and no one has time or interest to actually experience what Aurland is. Aurlenders, especially in Flâm, have become guests in their own home.

Reframing the tourist sector can contribute to giving ownership of the tourism industry back to the locals. It is about changing the structures to create respectful connection between nature, locals and tourists. With the 2026 zeroemission policy, Aurland could take this as an opportunity to market to a new group of tourists. This is a chance to choose the guests that we want.

## **Project starters**

### ***The new tourist***

With the estimated decrease in cruise tourism, the door is open to invite a group of tourists that can shape the future of Aurland's tourism industry. Sustainability is becoming more important with the ongoing climate crisis, and more and more tourists care about this while traveling. They seek authenticity and are open to experiencing Aurland in new ways like workcations, slow travel and voluntary work. Slow travel and regenerative tourism can become a trademark for the municipality, and the agricultural school can make a basis for an educational way of life and travel, living at one with nature. It is a turning point to choose the tourist that we want.

## **Who are the tourists that we want?**

### ***The hidden gems***

There are a lot of local initiatives and businesses that hold great potential, such as Sakte and Steinbergdalshytta. They are Aurland's hidden gems, but they are struggling to reach out to a bigger audience causing them to stay unknown to many tourists. It is time to find these hidden treasures and lift them up, amplify their voices and make them visible to the tourists, giving them a chance to experience Aurland in a slower and more authentic way. One approach is to help them build a stronger marketing strategy, and find the platforms where their target groups are active. It might be social media for the younger generation and traditional media for the senior generation. Using these existing local businesses is an unique opportunity to show and tell the stories we want the tourist to hold after visiting Aurland. How can we help local initiatives and businesses to reach out to more people?

### ***Tourist to support locals***

We need to create tourism that generates jobs and real value to the local community. The businesses in Aurland should be made for and attract both locals and tourists. They should aim to generate cultural and social value to the municipality, making it more attractive for young people to stay and a possibility to keep jobs that normally would vanish when high season ends. One mindset for the new businesses is to satisfy what the locals would enjoy and use if the tourists were gone, because if the locals take pleasure in it and find it delightful, then the tourist will most likely too. We need to make sure it is not the locals that support tourists, but the tourists that support locals.

How can we make businesses beneficial and attractive for both locals and tourists?

### ***New activities***

Aurland is a summer destination, and a natural consequence is that most activities are based around this season. This contributes to enforcing the loop of massive numbers of visitors during summer, and few during low season. To break this cycle, it is time to create fun and attractive activities and show the perks and wonders of visiting Aurland at less popular times. Evenly distributing the tourists throughout the seasons is also a way to get a more even income stream throughout the year. The activities are meant to keep the visitors entertained and it is important to think of the spectrum of different tourist groups – from the more traditional to the younger generation of tourists. This can be done by making events or indoor activities highlighting local cuisine and cultural traditions. And a way of making it more relevant is by taking inspiration from new technologies and gamification. How can Aurland attract more visitors during low seasons?

## **4. Rebuilding infrastructure**

### ***Building a home that can receive its guests***

During the summer months, tourists from various countries and modes of transportation flock to the docks, making it a popular gathering spot. As this type of tourism is a vital component of Aurland's economy, the municipality has made efforts to accommodate tourists and ensure their comfort. A lot of the buildable land, especially in Flâm, is used for tourism purposes. The tourists arriving by car need a huge amount of parking lots and steal valuable space from the local community that already has a shortage of space for housing, schools, and life, due to the natural boundaries of the valleys.

By rethinking how to better benefit the land, we can achieve a better and more stable life for the locals. Rebuilding the infrastructure in Flâm and Aurland gives the municipality more control on the tourist flow and how the tourists behave and act. A community that is made for the locals, is a community that is ready to receive the tourists.

### **Project starters**

#### ***Tourist flow***

To not exceed nature's and the locals' boundaries, it is important to understand the flow of tourists and the area's capacity. By looking at the infrastructure, we can decide where we want the tourists and how many of them we can have in an area at a specific time. This way, we can prevent overcapacity. Ways of managing the flow may be using or creating systems and structures that can control this such as booking systems, check-ins and guidance to further exploration of new areas and activities. By planning and building infrastructure digitally and physically we can actively decide how the tourists move around and influence how they act.

How can we use physical and digital infrastructure to influence tourist flow, actions and behavior?

### ***Land utilization***

When the buildable land is utilized for the advantage of tourists that mainly arrive during high season, there are a lot of empty spaces during low season which creates so-called ghost winters. These spaces have a lot of untapped potential to bring value to the local community if we use them right. It is about what we choose to build on these land areas. We need to plan for better utilization by thinking long-term, like a way to regulate the usage to something that supports or lays the foundation for social and cultural value creation. What if Flåm center were car free and the parking lots were placed in less valuable areas? Then a lot of land would be freed in the town center and could be used for something friendly and delightful for both tourists and locals.

How can we better utilize the buildable land in Aurland, so that it also has value during low season?

### ***Local privacy***

Although tourists benefit the municipality greatly economically, it can also put extra strain on the landscape and locals' minds. When up to one and a half million tourists visit a town of 1776 residents, the chances of trespassing property and privacy is big when the visitors are ignorant to the limits of private and public space. We need to guide them, and direct ways of doing this is by using signs or create designated tourist paths and areas in which the tourists need to stay within. Roads can be made further away from private land and help redirect them in the right directions. This might prevent unwanted "paparazzis" on private land and a home that feels like part of a human zoo.

How can we ensure privacy for the locals?

### ***Transport***

It is difficult to travel around Aurland without a private car. Fifty eight percent of travelers come to Aurland by car, and the rest come by other means of transport that often traps them in Flåm (Dybedal & Haukeland, 2017). From there it is difficult to explore further because there is not a good transport system to take them around. Finding alternative ways of moving around or upgrading the public transport system can help spread tourists to explore other areas. They might even stay longer and leave more money to small businesses outside of the tourist hot spot. Upgrading the public transport, like using the ferry as the main means of transportation could be convenient and useful for both tourists and locals. When places become available by public transport, it creates a more connected community. People who might not otherwise meet or interact with one another can come together and share experiences.

How can we create an easier and more sustainable way to move around Aurland?

## **What's next**

### **Implementation**

The workshop is one example of how this material can help facilitate and drive change. We acknowledge that we have not yet tested it, and therefore do not know how it would

work in practice. The reason we include this passage is to share how we would have taken this forward:

1. Workshop in Aurland where all locals are invited. Here we would divide the attendants into randomized groups. We would take inspiration and insight from the workshop prototype.
2. The findings from the workshop are processed.
3. The findings are presented to the community and they are invited to shape it.
4. The locals make a work plan for the coming year of work towards the future.
5. Stakeholders from outside are invited to take part when the locals have mapped out what their future looks like.

### **Workshop and impact of workshop**

In order to understand how these questions and leverage areas can be useful we have made a prototype of a workshop. In this workshop we have used our conversation cards in combination with an organized gigamap and cards representing nature principles.

These nature cards consist of five principles: regeneration, adaptability, interdependence, diversity, resilience. Together with the leverage questions, the nature principle cards are randomly drawn, making a sort of forced relation between a question for change based on our research, and a principle from nature hopefully sparking an inspiring conversation where nature gets to determine how we think of solutions. The workshop is an example of one way to work onwards with this project for NATURACT (or others). As previously mentioned we see our work as a foundation for inspiring a new way of thinking about the future together through conversation. We think of our work as a project starter.

## **Reflections**

### **Project reflections**

Our role as designers In this project we have learned a lot about the system design way of thinking and how we can apply this to a project. It can be a powerful tool to understand structures and complexity, and the methods that lie within works well to look for challenges and potentials in systems, knowing which areas to attack to drive change and ways to generate ideas. The learning outcome from this project is valuable, and it will be useful for future projects regardless of design discipline. However, the feeling of confusion has been present at many times, and the frustration of not knowing everything and not knowing enough has made us question this whole project. Are we doing a meaningless project based on assumptions and guessing? Reflecting about this, we realized that this project is not about finding solutions. We will not know all the answers, and we came to terms with the fact that this project will not be perfect. We are after all not the experts, and our role as designer in this project is to spark inspiration and be the conversation opener and project starters. Only together with the Aurland municipality and the locals living there can we use our design skills to shape a desirable future for the people it concerns.

We as designers are midwives that help initiate the labor of something beautiful.



Figure 5 Gigamap of the projects

## Team reflections

### *A group of seven*

It was healthy for us to get thrown around a bit working in a different way than what AHO has introduced us to so far, working in smaller groups and doing everything together. The first part of the project was largely driven by collective discussions part of the process, which was good to really get to know the project well and also each other. But in a group this big it often felt like poor use of time and work force. When we felt stuck, we arranged low threshold workshops to help spark inspiration and creativity in each other and start discussion. Gradually we moved to more individual and dual work, whilst keeping each other up to date along the way, and switching tasks. This has been good for efficiency and trust, and to gain personal connection to the project. The teamwork sessions and reflections in this course have helped us get a deeper understanding of each other as individuals, and also our strengths and weaknesses which we have tried to use to our advantage to drive the project forward more efficiently. Though we have had discussions and disagreements in our team, it has never led to relational conflicts. We have been good at expressing our needs and struggles, this being a part of our group norms. This has been great to avoid annoyance and stay in good terms with each other. As an intro course, SOD is stacked with new methods and input, and we quickly realized it did not make much sense for us to use those that were not beneficial for our project. As a group of perfectionists, it was frustrating to not always master them at first try and get them “perfect” but having this in mind we got better at letting loose and have more fun.

### *Ishita*

Working with such a big team has come with both its advantages, but also its challenges. Personally, I find it challenging to bounce back and forth during conversations with so many people participating at once. Especially in this group, where everyone is engaged in the discussion and are eager to participate, a lot is said in just a few minutes. But these discussions have been incredibly interesting, and I have enjoyed both trying to participate actively, while taking a step back and taking notes other times. Being in a motivated and headstrong group has had a very positive effect on my motivation in this project. Although we have struggled and felt lost sometimes, the group has created a comfortable workspace.

### *Nora*

Working in a larger team than we have previously experienced has had both positive and negative aspects. I found the latter half of the project to be the most enjoyable, as that was when everything came together and things started to make sense. Throughout the project, I have come to appreciate the importance of “trusting the process” more than ever before. It is important for me to understand the reasons behind our actions and to find meaning in the activities we undertake. While I can sometimes become overly preoccupied with ensuring that everything we do has significant value, this project has taught me that seemingly “silly” exercises can be the most valuable.

**Monica**

As a designer, I prefer the second half of a process where our thoughts and ideas are narrowed down and easier to grasp. The start of this SOD course was overwhelming and confusing, but I have been engaged and tried my best to help drive the project further. I was “elected” to be team leader for the second half of the project and felt the responsibility of managing the team to deliver on time. I tried to divide work and structure the finalization, and in retrospect I see that the way I divided work could be more successful to avoid stress, like finishing the report first before the presentation, but I do not know if it would make much difference. However, I hope that my efforts made the other team members feel some kind of structure, order and sense in the project.

**Maija**

There is a lot of freedom in this course, and therefore I learned a lot about myself. The rich design space was a nightmare for me in many ways, but I do understand how it's useful when trying to drive a conversation and a train of thought with many people, and also avoiding having a million thoughts in one's head at the same time. As a team player I can be a driver, but also sometimes draining because I don't necessarily bring a lot of energy to the group. This has taught me to keep quiet sometimes, and to work alone from time to time. I find team discussion very fun, but also difficult, because I want to land on a common understanding. I can see what needs to be done and have high expectations. I have had to let go of a bit of control in this project, because we have been seven people on the team.

**Philip**

Personally, I'm not a really outgoing person, at least not at the start of a project with people I have never worked with before. So when we got these different roles with social tasks for the group, it was hard to adapt. Especially with me being a red oriented person, which is more feelings oriented. It was hard to adapt to characteristics more related to green or blue personalities. But, I think that we got a lot from having a combination of different personalities. As we always had a lot of ideas on how, when or why to do things but it was the part of getting started that sometimes caused a bump in the road. So by having someone being direct and sometimes taking a tough choice helped the group move forward. I also realized that being a people pleaser might come in the way of constructive work as you don't know how to move forward without hurting anyone. It was nice to have a good amount of focus on group dynamics relating to different roles and how to create a good working space. Which made it easier to understand how to work around social problems and address them without feeling bad about myself or others.

**Tiril**

My family situation is different than my team members and includes caring for children when they are sick and picking up in kindergarden, this has caused me to occasionally be unavailable and has made it challenging for me to re-engage in the project after spending time at home. I tend to be outgoing and enthusiastic, displaying an avid interest in most subjects. However, during this project, I have made a conscious effort to listen more

actively, although I have struggled to find the right balance between speaking and listening while remaining engaged. I feel that I have not fully demonstrated my potential and could have been more proactive. This is my first experience working in a large team, and the role I usually occupy in projects did not translate into this context, making it difficult to determine my contribution to the group. As a result, I have experienced feelings of insecurity and less confidence in my role. Nevertheless, I have witnessed that the team is capable of producing an engaging and enjoyable process.

## Method catalogue

**Rich design space.** Use the room and physical surroundings to display ideas and thoughts.

**Gigamap.** A way to visualize complex systems and see connections.

**Crazy 8.** You get 8 minutes to generate 8 ideas. Be as crazy as you like.

**Field trip.** Get a first hand experience of the place, people and situation you are working with.

**Interview/dialog.** Talking with the people the project concerns to get an in-depth understanding and perspective.

**Desktop research.** Searching for numbers and facts to build arguments.

**Karl Tomm question techniques.** 1.Ask about facts 2.Ask about surroundings 3.Ask about how 4.Ask what if.

**Stakeholder mapping.** See connections and relations between the stakeholders.

**Horizon scanning.** A way to map out what we want less of (H1: business as usual), what we want more of (H3: pockets of the future) and what needs to be done (H2).

**Systematic narratives.** Present the research in a way so others can understand and feel why action is needed.

**Iceberg model.** Mapping out symptoms, patterns, structures and mental models to get a deeper understanding of an event, situation etc.

**Futures wheel.** Branching out events to extract the underlying value.

**Branching.** Branching to see cause and effect, how one event can follow another.

**Polarisation map.** Using opposites to create scenarios.

**AI generation.** A tool to quickly test ideas and generate customized photos.

**Impact - feasibility map.** A way to see which interventions are more relevant and effectful to implement to reach the goal.

**Problem heritage.** Organizing the problems in categories, so-called problem families

**PESTLE** (Political, Economic, Social, Technical, Legal, Environmental). A method to understand what and in which category to drive change.

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**Resumen:** Este trabajo analiza el sistema turístico de Aurland, Noruega, desde la perspectiva del Diseño Orientado a Sistemas (System Oriented Design, SOD). El informe examina las relaciones entre los habitantes locales, los turistas y la naturaleza, identificando desequilibrios, problemas estructurales y oportunidades para un turismo más sostenible y regenerativo. A partir de trabajo de campo, gigamapping, horizon scanning y construcción de escenarios, el estudio propone áreas de palanca vinculadas con la naturaleza, la identidad local, la reformulación del turismo y la infraestructura. El documento está destinado a funcionar como un iniciador de conversaciones y como base para proyectos colaborativos hacia una transformación sostenible del modelo turístico de Aurland.

**Palabras clave:** Aurland - turismo - sostenibilidad - diseño orientado a sistemas - turismo regenerativo - Noruega

**Resumo:** Este trabalho analisa o sistema de turismo de Aurland, na Noruega, a partir da perspectiva do Design Orientado a Sistemas (System Oriented Design, SOD). O relatório examina as relações entre moradores locais, turistas e natureza, identificando desequilíbrios, problemas estruturais e oportunidades para um turismo mais sustentável e regenerativo. Com base em trabalho de campo, gigamapping, horizon scanning e construção de cenários, o estudo propõe áreas de alavancagem relacionadas à natureza, identidade local, reformulação do turismo e infraestrutura. O documento funciona como ponto de

partida para diálogo e para projetos colaborativos rumo a uma transformação sustentável do modelo turístico de Aurland.

**Palavras-chave:** Aurland - turismo - sustentabilidade - design orientado a sistemas - turismo regenerativo - Noruega

[The translations of the abstracts were supervised by the author of the article.]

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