ACTIVITY: Workshop3_TORNIO RIVER VALLEY_PILOT LANDSCAPE
DATE and TIME: 8.10.2019, 12:30 -16:00
PLACE: Bothnian Business house (meetingroom Kaari), Pakkahuoneenkatu 1, Tornio

ORGANIZERS:
- Juanjo Galan / Aalto University
- Sampo Kangastalo/ Tornio city
- Kirsi Hutri-Weintraub / Aalto University

PARTICIPANTS (12+2):
- Niina Karjalainen / ELY
- Katri Hendriksson / Lapland’s school for applied sciences
- Sampo Kangastalo/ Tornio city
- Aapo Mäenpää / Tornio city
- Virve Sallisalmi / Transboundary River Commission
- Pekka Pelttari / Tornio, fishing, Karunki
- Minna Heljala / Museum of Tornio river valley
- Robert Ekholm / Haparanda City
- Sofia Rosendahl /Haparanda municipality
- Martti Isto / MTK-Tornio, farmer
- Teija Ylimartimo / Museum of Tornio river valley
- Anne-Mari Söderström / MTK-Tornio (farmer)
- Juanjo Galan / Aalto University
- Kirsi Hutri-Weintraub / Aalto University

KEY OBJECTIVES and EXPECTED OUTCOMES of THE ACTIVITY (expected outcomes):
- Co-definition of key contents for a potential LACAP (Landscape Adaptation Plan for Climate Change) for the Tornio river valley (values to promote, goals to achieve, impacts to address, opportunities to consider, solutions & actions to propose, barriers to overcome)
- Co-definition of a process for the definition of the potential LACAP and co-identification of required actors
- Co-definition of next steps in the Tornio river valley and future works of the constituted Local Network

AGENDA:
12:30 – 12:35 Welcome words – Sampo Kangastalo (Tornion city) and Juanjo Galan & Kirsi Hutri-Weintraub (Aalto University)
12:35 – 12:40 Presentation of participants
12:40 – 12:55 Results of the WORKSHOP 2 – Juanjo Galan (Aalto University)
12:55 – 13:10 Towards a Climate-KIC Demonstrator and a LACAP (Landscape Adaptation plan to Climate Change) – Juanjo Galan (Aalto University)
  • What can be a LACAP? Examples of other Strategic Plans (Partners & Roles / Topic & Goals / Phases / Schedule / Outputs)
  • Key contents of an application for a Climate-KIC Demonstrator: Table of Contents & Key ideas; possible ways to contribute
13:10 – 13:30 Key findings and opportunities of the AELCLIC project in relation to the City Plans of Tornio & Haparanda – Sampo Kangastalo (Tornio City)
  • Suggestions for a future LACAP?
13:30 – 15:45 Teamwork around a big table + coffee (2 hours, approximately 20 min/task)
• TASK1: WHAT: Main Values, Key Goals & Themes/Topics (+ some IMPACTS & SOLUTIONS/ACTIONS) for a potential LACAP
• TASK2: Structure of a potential LACAP
• TASK2: HOW: Process, Key phases and schedule (e.g. identification and involvement of key stakeholders, analysis and diagnosis of critical issues, development of strategies & plan, definition of pilot actions...)
• TASK3: WHO: Partners: Possible distribution of roles, duties, contributions, etc.
• TASK5: Critical diagnosis of the existing Local Network and its capacity to promote the development of a Demonstrator application and a LACAP (administrative, financial, social, scientific)
• TASK6: Celebrating the end of the AELCLIC_pathfinder in Tornio

15:45 – 16:00 Summary and conclusions

1. WELCOME
• Welcoming words by Juanjo Galan (Aalto University), Sampo Kangastalo (City of Tornio), and Kirsi Hutri-Weintraub (Aalto University)

2. PRESENTATION OF PARTICIPANTS

<table>
<thead>
<tr>
<th>NAME OF CONTACT</th>
<th>INSTITUTION</th>
<th>TYPE</th>
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</thead>
<tbody>
<tr>
<td>Sampo Kangastalo</td>
<td>Tornio City</td>
<td>REGIONAL/LOCAL ADMINISTRATION</td>
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<tr>
<td>Aapo Mäenpää</td>
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<tr>
<td>Niina Karjalainen</td>
<td>ELY-centre</td>
<td>REGIONAL/LOCAL ADMINISTRATION</td>
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<tr>
<td>Minna Heljala</td>
<td>The Museum of Tornio Valley</td>
<td>PUBLIC BODY</td>
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<tr>
<td>Katri Hendriksson</td>
<td>Lapland University of Applied Sciences</td>
<td>RESEARCH</td>
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<td>Anne-Mari Söderström</td>
<td>MTK</td>
<td>ECONOMY SECTOR</td>
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<td>Martti Isto</td>
<td>Farmer</td>
<td>ECONOMY SECTOR</td>
</tr>
<tr>
<td>Pekka Pelttari</td>
<td>Fishers/Tornio City</td>
<td>ECONOMY SECTOR</td>
</tr>
</tbody>
</table>

CONCLUSIONS:
- The local network remains stable and all the required sectors are represented (governmental, economic, social and academic). However, the number of participants has decreased in this last workshop and the presence of civil/societal institutions, local businesses, and companies from the industry and energy sector needs to be reinforced.

3 RESULTS of the WORKSHOP2
- Juanjo Galan (Aalto University) summarizes the results of the WORKSHOP2 and the evolution of the AELCLIC-Pathfinder project in the 3 Pilot Landscapes located in Finland.

TOPIC 1: NATURE AND BIODIVERSITY
1) IMPACTS
   • 1.1. SEASONAL CHANGES, SNOW, SOILS AND RIVER: Run-off and impact in water quality, Reduction of snow cover and effect in permanent frost (routa) / no permanent frost, No more distinct seasons, the river may stay unfrozen even in the winter
   • 1.2. ECOLOGY AND ECOSYSTEMS: Arctic species are receding, Distribution areas of plants will change, Forest growth accelerates
   • 1.3. ALIEN SPECIES, DISEASES AND PESTS
• 1.4. FISHES: Survival of salmonids
• 1.5. REINDEERS: Reindeer food, pasture of lichens

2) OPPORTUNITIES
• 2.1 AGRICULTURE & FORESTRY: The growing season is getting longer, New crops, Forest growth is accelerating
• 2.2 RESTORATION OF RIVER BASIN AND RURAL OPENNESS: restoration of the river basin, Rural openness will be restored
• 2.3 NEW CLIMATE AND REDISTRIBUTION OF SPECIES

3) SOLUTIONS
• 3.1. ELECTION OF CROPS, TECHNIQUES AND MACHINES
• 3.2. SUPPLEMENTARY FEEDING FOR REINDEERS
• 3.3. SEAL HUNTING
• 3.4. CONTROL OF ALIEN SPECIES

4) BARRIERS
• 4.1. REGULATIONS /RESTRICTIONS FOR FISHING
• 4.2. SMALL FARMS
• 4.3. LACK OF RESOURCES

TOPIC 2: SUSTAINABLE ECONOMY & TRADES

1) IMPACTS
• 1.1. AGRICULTURE & FORESTRY: More flexibility in farming (changes in crop varieties or harvest season depending on weather conditions), Pests / attacks, Forestry - pests, storms, soft, wet forestland and roads, harvest/cutting time shortens
• 1.2. NEW CLIMATIC CONDITIONS: Less seasonal changes: warmer summers and winters, also the soil and its vegetation and organisms will change..
• 1.3. INFRASTRUCTURES & SAFETY: Damage to infrastructure / costs, The need for deepening the sea-lane is diminished due to rising sea levels, More and bigger floods
• 1.4. BUILDINGS AND CONSTRUCTION: Construction and maintenance becomes more difficult on the riverside, Regulations of construction become tighter
• 1.5. FISHING: Fish does not rise the river) / Salmons are affected by warmer water
• 1.6. TOURISM: Fishing tourism?, Less winter tourism?

2) OPPORTUNITIES
• 2.1. TOURISM: “Cooling” tourism, Summer travel >> incomes
• 2.2. GREEN ECONOMY: Green trades, “new” business and existing ones, Agriculture increases >> open landscape

3) SOLUTIONS
• 3.1. RESEARCH
• 3.2. REDUCE EMISSIONS OF SUBSTANCES HAZARDOUS TO THE ENVIRONMENT
• 3.3. REDUCE NUTRIENT RUNOFF: LANDS, SWAMPS, FORESTS, AGRICULTURE > DITCHES, TECHNOLOGY
• 3.4. ENVIRONMENTAL FRIENDLY BIOLOGICAL CONTROL METHODS
• 3.5 AGRICULTURE NEEDS INFORMATION ON NEW CROPS AND THEIR POSSIBILITIES (CROP/HECTARE) + EU REGULATION TO BE MORE FLEXIBLE IN ORDER TO MAKE CHANGES POSSIBLE DURING THE HARVEST SEASON

4) BARRIERS
• 4.1. LACK OF RESOURCES, FOR EXAMPLE FINANCING
• 4.2. EU DIRECTIVES

TOPIC 3: CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)

1) IMPACTS
• 1.1. LANDSCAPE CHANGES: RIVER, FARMING, ROADS, BUILDINGS: New construction techniques required, Built places/buildings to high places, Damage in roads, Impacts in farming, shorter snow season and the river may stay unfrozen even in the winter
• 1.2. WAYS OF LIVING, TOURISM AND WARMER SUMMERS: Change in fish species: tourism, diet, hobby, changes in daily activities: walking, living, dressing, The ski season becomes shorter – a horrible idea
• 1.3. HEALTH & SAFETY: Floods, Diseases and pests, more slippery streets and paths, Snow season shortens - The amount of light does not increase - mental nausea
• 1.4. PEOPLE & SOCIO-CULTURAL STRUCTURE: Immigration?, Languages and dialects as nature information (meaá-language, Saami), Climate refugees >> multicultural environment
• 1.5 DOUBTS: TIME SCALE AND SPEED OF CHANGE: What is the time scale?, risk of taking absurd decisions, changes have also occurred in Finland due to climate change.

2) OPPORTUNITIES
• 2.1 PEOPLE & SOCIO-CULTURAL STRUCTURE: Climate refugees >> population growth and more multicultural environment
• 2.2. SUMMER TOURISM: Summer travel >> incomes and new infrastructures
• 2.3. ECONOMIC DEVELOPMENT: Agriculture increases >> open landscape

3) SOLUTIONS
• 3.1 FLOOD WALLS
• 3.2. BIOLOGICAL PEST CONTROL
• 3.3. ARTIFICIAL SPAWNING PLACES
• 3.4. ELIMINATION OF ALIEN SPECIES
• 3.5. PROVISION: STRATEGY, MORE EUROPEAN CO-OPERATION, OPENNESS
• 3.6. TRAVELLING OVER LAND
• 3.7. DEVELOPMENT OF TRAIN SERVICES

4) BARRIERS
• 4.1. MONEY & RESOURCES
• 4.2. ENDLESS TASKS
• 4.3. POLITICS

TOPIC 4: WATER SYSTEMS, FLOODS AND TORNIO RIVER
1) IMPACTS
• 1.1. FLOODS AND DAMAGES: Erosion of the river banks, floods become more extreme and unpredictable, Beach construction becomes more difficult
• 1.2. WATER QUALITY, QUANTITY & DROUGHTS: Nutrient runoff >> water quality, Water supply, drinking water, clean water, Regional drought
• 1.3. RIVER ECOSYSTEMS & FISHING: Water temperature rises >> e.g. ice formation, Less fishing, Less biodiversity is changing., more alien species
• 1.4. INFRASTRUCTURES: Damages in existing infrastructure, water and wastewater management

2) OPPORTUNITIES
• 2.1 LESS ICE FLOODS & MORE FLOOD CONTROL
• 2.2. HYDROPOWER AND NEW TECHNOLOGIES: Floating constructions, Flood power station, New innovations and technologies
• 2.3. RIVER ECOSYSTEMS AND FISHING: More fishing, new biodiversity?
• 2.4. RECREATION: The bathing season becomes longer
• 2.5 NUTRIENTS AND SOIL FERTILITY

3) SOLUTIONS
• 3.1. DEVELOPMENT OF (TOURISM) TRADE
• 3.2. DEVELOPMENT OF ENVIRONMENTAL PROGRAMS
• 3.3. AGRICULTURE
• 3.4. PROTECTION OF RIVER SIDES + FLOOD CONTROL
• 3.5. WATER AND WASTE WATER MANAGEMENT
• 3.6. STORM WATER CONTROL/DELAY
• 3.7. NEW INNOVATIONS & TECHNOLOGIES

4) BARRIERS
• 4.1. MONEY
• 4.2. POLITICS
• 4.3. REACTION SPEED
• 4.4. NORMS
• 4.5. SLOWNESS

4.1 TOWARDS A CLIMATE-KIC DEMONSTRATOR AND A LANDSCAPE ADAPATION PLAN TO CLIMATE CHANGE (LACAP) FOR THE TORNIO RIVER VALLEY? (Juanjo Galan, Aalto University)
- Short lecture about the differences between Climate Change ADAPTATION and MITIGATION
- Short lecture about the basic contents and structure of a typical Strategic Plan
- Short introduction about the contents and structure of one application for a CLIMATE-KIC Demonstrator (possible future step for the AELCLIC in the Tornio river valley?).

4.2. Strategic Plans for the City of Tornio (Sampo Kangastalo (Town of Tornio)).
- Sampo Kangastalo (Town of Tornio) explains the connections between the AELCLIC project and the Strategic Plan of Tornio. Sampo also suggests some potential topics to be addressed in the AELCLIC project.
5 TEAMWORK

5.1. TASK 1: WHAT? – Main Values, Key Goals & Themes/Topics (+ some IMPACTS & SOLUTIONS/ACTIONS) for a potential LACAP

- For task 1 there was a poster made beforehand with the goal/objective of the AELCLIC project (A) and values, goals, themes, impacts, opportunities, solutions and barriers identified earlier in the AELCLIC-workshops 1 & 2 (A). In addition, the included also the most important values, goals and topics/themes of the strategy of Tornio city (TOR) and Tornio-Haaparanta vision 2021 (TOR-HAP).

- The participants made a critical revision of all the included Values, Goals, Themes/Topics, Impacts, Opportunities, Solutions and Barriers.

**STEP1: Inputs from the 3 documents framing the Workshop3 of the AELCLIC project in Tornio:**

### Values
- OPEN-AND NATURAL LANDSCAPE
- SEA
- BETWEEN BORDERS
- RIVERS & WATER
- TOWNS & VILLAGES CULTURE & NATURE
- LIVING IN THE FAR NORTH

### Goals
- DEFINING A NETWORK OF LOCAL STAKEHOLDERS (AELCLIC PROJECT)
- TOPIC: NATURE AND BIODIVERSITY
- TOPIC: SUSTAINABLE ECONOMY
- TOPIC: CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)
- TOPIC: WATER SYSTEMS, FLOODS AND TORNIO RIVER

### Themes
- TASK 1: NATURE AND BIODIVERSITY
- TASK 2: SUSTAINABLE ECONOMY
- TASK 3: CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)
- TOPIC: WATER SYSTEMS, FLOODS AND TORNIO RIVER

### Impacts
- TASK 1: NATURE AND BIODIVERSITY
- TASK 2: SUSTAINABLE ECONOMY
- TASK 3: CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)

### Opportunities
- TASK 1: NATURE AND BIODIVERSITY
- TASK 2: SUSTAINABLE ECONOMY
- TASK 3: CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)

### Solutions
- TASK 1: NATURE AND BIODIVERSITY
- TASK 2: SUSTAINABLE ECONOMY
- TASK 3: CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)

### Barriers
- TASK 1: NATURE AND BIODIVERSITY
- TASK 2: SUSTAINABLE ECONOMY
- TASK 3: CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)

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### From AELCLIC WORKSHOPS 1+2
- OPEN-AND NATURAL LANDSCAPE
- SEA
- BETWEEN BORDERS
- RIVERS & WATER
- TOWNS & VILLAGES CULTURE & NATURE
- LIVING IN THE FAR NORTH

### From TORNIO CITY STRATEGY
- SAFETY
- CONTINUOUS RENEWAL
- CUSTOMER ORIENTED APPROACH
- SUSTAINABILITY
- TRANSPARENCY

### From TORNIO-HAAPARANTA VISION 2021
- EDUCATION & KNOWLEDGE
- SUSTAINABLE ENVIRONMENT
- DYNAMIC ENTERPRISE AND BUSINESS
- LOGISTIC CENTER
- BORDERLESS EDUCATION
- LAND USE
- FOOD PROTECTION
- EXCITING SHOPPING AND VISITING STOP
- SUSTAINABLE ENERGY
STEP 2: CO-DEFINITION OF KEY LOCAL ATTITUDES, VALUES, GOALS, THEMES, IMPACTS, OPPORTUNITIES, SOLUTIONS AND BARRIERS FOR CLIMATE CHANGE ADAPTATION IN THE TORNIO RIVER VALLEY (LIST INFORMED BY AELCLIC-workshops 1 & 2 (A), by the strategy of Tornio city (TOR), by the Tornio-Haaparanta vision 2021 (TOR-HAP) and by NEW proposals (NEW):

<table>
<thead>
<tr>
<th>VALUES</th>
<th>GOALS</th>
<th>THEMES</th>
<th>IMPACTS</th>
<th>OPPORTUNITIES</th>
<th>SOLUTIONS</th>
<th>BARRIERS</th>
</tr>
</thead>
</table>
| • ON THE PEACEFUL BORDER IN THE NORTH (A+NEW) | • WORKING WITH LOCAL STAKEHOLDERS (A) | • TWIN CITY BY THE RIVER, THE SEA AND THE ARCHIPELAGO (TOR) | On TWIN CITY BY THE RIVER, THE SEA AND THE ARCHIPELAGO  
  • Tourism (A)  
  • On CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)  
  • Energy (A)  
  • People & socio-cultural structure (A)  
  • Ways of living, tourism and warmer summers (A)  
  • On WATER SYSTEM, FLOODS AND TORNIO RIVER (A)  
  • Health & safety (A)  
  • Seasonal changes, snow, soils and river (A)  
  • Buildings and construction (A)  
  • Doubts: time scale and speed of change (A)  
  • Ecology and ecosystems (A)  
  • On SUSTAINABLE ECONOMY AND ENVIRONMENT  
  • Agriculture & forestry (A)  
  • Fishes (A)  
  • Fishing (A)  
  • Water quality, quantity & droughts (A)  
  • Alien species, diseases and pests (A)  
  • River ecosystems & fishing (A)  
  • Landscape changes: river, farming, roads, buildings (A)  
  • On IMPROVING ENERGY PRODUCTION AND USE  
  • Infrastructures & safety (A)  
  | • Land use and construction management and control > sustainable and conserving building (NEW)  
  • Reduction of the emissions of substances hazardous to the environment (A)  
  • Improved Agriculture (A)  
  • Research (A)  
  • Storm water control/delay (A)  
  • Flood walls (A)  
  • Protection of river sides (A)  
  • Flood control (A)  
  • Development of environmental programs (A)  
  | • Politics (A)  
  • EU-directives (A)  
  • Regulations /restrictions for fishing and agriculture (A+NEW)  
  • Lack of resources, new ideas (A+NEW)  
  • New thinking and people, young people needed (NEW)  
  • Money and resources, lack of time (A+NEW)  
  • Weak involvement of private and public sector (NEW)  
  • Are we missing our culture identity? (NEW)  
  • Existing structures and systems (for ex. the fossil fuels) (NEW)  
| • CULTURE AND NATURE (A) | • CIRCULAR ECONOMY (TOR) | • FUNCTIONAL = SUSTAINABLE: ENVIRONMENT, SOCIAL/COMMUNITY, CULTURE, ECONOMY (TOR) | • IMPROVING ENERGY PRODUCTION AND USE (NEW) | • Land use and construction management and control > sustainable and conserving building (NEW)  
  • Reduction of the emissions of substances hazardous to the environment (A)  
  • Improved Agriculture (A)  
  • Research (A)  
  • Storm water control/delay (A)  
  • Flood walls (A)  
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  • Weak involvement of private and public sector (NEW)  
  • Are we missing our culture identity? (NEW)  
  • Existing structures and systems (for ex. the fossil fuels) (NEW)  
| • TRANSPARENCY (TOR) | • EDUCATION AND KNOWLEDGE (TOR-HAP) | • WATER SYSTEM, FLOODS AND TORNIO RIVER (A)  
  • IMPACTS: CODEFINITION OF KEY LOCAL ATTITUDES, VALUES, GOALS, THEMES, IMPACTS, OPPORTUNITIES, SOLUTIONS AND BARRIERS FOR CLIMATE CHANGE ADAPTATION IN THE TORNIO RIVER VALLEY (LIST INFORMED BY AELCLIC-workshops 1 & 2 (A), by the strategy of Tornio city (TOR), by the Tornio-Haaparanta vision 2021 (TOR-HAP) and by NEW proposals (NEW):

<table>
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<tr>
<th>• SAFETY (TOR)</th>
<th>• PROMOTING AGRICULTURAL ACTIVITY (NEW)</th>
<th>• IMPROVING ENERGY PRODUCTION AND USE (NEW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NEW proposals (NEW)</td>
<td>• IMPROVING ENERGY PRODUCTION AND USE (NEW)</td>
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5.2. TASK 2: Structure of a potential LACAP: This task involved a deep synthesis of the information generated in the TASK1

**PRELIMINARY CONTENTS for a potential LANDSCAPE ADAPTATION PLAN FOR CLIMATE CHANGE in the Tornio River Valley**

<table>
<thead>
<tr>
<th>VALUES</th>
<th>ON THE PEACEFUL BORDER IN THE NORTH</th>
<th>CULTURE AND NATURE</th>
<th>TRANSPARENCY</th>
<th>SUSTAINABILITY</th>
<th>SAFETY</th>
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<td>GOALS</td>
<td>WORKING WITH LOCAL STAKEHOLDERS</td>
<td>CIRCULAR ECONOMY</td>
<td>EDUCATION AND KNOWLEDGE</td>
<td>FUNCTIONAL SUSTAINABLE: ENVIRONMENT, SOCIAL/COMMUNITY, CULTURE, ECONOMY</td>
<td>PROMOTING AGRICULTURAL ACTIVITY</td>
</tr>
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**THEMES**

- TWIN CITY BY THE RIVER, THE SEA AND THE ARCHIPELAGO
- CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)
- WATER SYSTEM, FLOODS AND TORNO RIVER
- SUSTAINABLE ECONOMY
- SUSTAINABLE ENVIRONMENT
- IMPROVING ENERGY PRODUCTION AND USE

**EXPECTED IMPACTS**

- ON TWIN CITY BY THE RIVER, THE SEA AND THE ARCHIPELAGO
  - TOURISM
- ON CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)
  - ENERGY
  - PEOPLE & SOCIO-CULTURAL STRUCTURE
  - WAYS OF LIVING, TOURISM AND SUMMERS
  - HEALTH & SAFETY
- ON WATER SYSTEM, FLOODS AND TORNO RIVER
  - FLOODS AND DAMAGES
  - SEASONAL CHANGES, SNOW, SOILS AND RIVER
  - BUILDINGS, CONSTRUCTIONS AND INFRASTRUCTURES
  - TIME SCALE AND SPEED OF CHANGE?
  - RIVER ECOLOGY AND ECOSYSTEMS
- ON SUSTAINABLE ECONOMY AND ENVIRONMENT
  - AGRICULTURE & FORESTRY
  - FISHES AND FISHING
  - WATER QUALITY, QUANTITY & DROUGHTS
  - ALIEN SPECIES, DISEASES AND PESTS
  - RIVER ECOSYSTEMS & FISHING
  - LANDSCAPE CHANGES: RIVER, FARMING, ROADS, BUILDINGS
- ON ENERGY PRODUCTION AND USE
  - EXISTING INFRASTRUCTURES & SAFETY

**OPPORTUNITIES**

- IN TWIN CITY BY THE RIVER, THE SEA AND THE ARCHIPELAGO
  - SUMMER TOURISM
- IN CULTURAL ENVIRONMENT, PEOPLE AND WAYS OF LIVING (LIFE IN THE NORTH)
  - NEW CLIMATE AND REDISSIBUTION OF SPECIES
  - AGRICULTURE & FORESTRY
  - RESTORATION OF RIVER BASIN AND RURAL OPENNESS
  - TOURISM
  - RECREATION
  - NEW PEOPLE & SOCIO-CULTURAL STRUCTURE
- IN WATER SYSTEM, FLOODS AND TORNO RIVER
  - LESS ICE DAM FLOODS & MORE FLOOD CONTROL
  - RIVER ECOSYSTEMS AND FISHING
- IN SUSTAINABLE ECONOMY AND ENVIRONMENT
  - GREEN ECONOMY
  - MORE NUTRIENTS AND SOIL FERTILITY
- IN ENERGY PRODUCTION AND USE
  - ECONOMIC DEVELOPMENT
  - NEW TECHNOLOGIES

**SOLUTIONS/ACTIONS**

- LAND USE AND CONSTRUCTION MANAGEMENT AND CONTROL > SUSTAINABLE AND CONSERVING BUILDING
- REDUCTION OF THE EMISSIONS OF SUBSTANCES HAZARDOUS TO THE ENVIRONMENT
- IMPROVED AGRICULTURE
- RESEARCH
- STORM WATER CONTROL/DELAY
- FLOOD WALLS
- PROTECTION OF RIVER SIDES
- FLOOD CONTROL
- DEVELOPMENT OF ENVIRONMENTAL PROGRAMS
- INCENTIVES, TAXATION, CERTIFICATION FOR INDUSTRY AND OTHER COMPANIES

**BARRIERS**

- POLITICS
- EU DIRECTIVES
- REGULATIONS /RESTRICTIONS FOR FISHING AND AGRICULTURE
- LACK OF RESOURCES, NEW IDEAS
- NEW THINKING AND PEOPLE, YOUNG PEOPLE NEEDED!
- MONEY AND RESOURCES, LACK OF TIME
- WEAK INFLUENCE OF PRIVATE AND PUBLIC SECTOR
- ARE WE MISSING OUR CULTURE IDENTITY?
- EXISTING STRUCTURES AND SYSTEMS (FOR EX. THE FOSSIL FUELS)
5.3. TASK 3+4+5: Discussion about how to continue working with Climate Change Adaptation within the Tornio local network generated during the AELCLIC-Pathfinder project:

**TORNIO CITY:**
- This is so far just the beginning of the discussion.
- We need to understand better the effect of climate change and increase hope instead of anxiety.

**RIVER COMMISSION:**
- Maybe we could increase hope by doing concrete commitments.
- Not to do anything is never a good alternative.
- Doing what we can will also inspire policy/decision makers.

**CITIZEN & FISHERMAN:**
- We are now discussing about topics related to water, including cultural aspects and the river.
- We are missing those who can affect more on climate change adaptation and mitigation. Industry & energy sector, abroader energy review is needed.
- It is also crucial to include the business and private sector. How do they see climate change? What is their experience? How can they contribute to climate change adaptation and mitigation?

**TORNIO CITY:**
- The town of Tornio and the trade group want to continue working on this theme.
- We need to do our homework, see examples and choose the frame and topics that we want to promote.
- Tornio is missing skills. Resources and there is no person in charge of this theme.
- In the municipality of Tornio they have done much on climate change. In Tornio we have not had yet a proper discussion. What does this mean in relation to our inputs, outputs and strategies?

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**How do you want to continue and use the results of the AELCLIC project?**

**Towards a LACAP?**

**TORNIO CITY:**
- We have approached climate change through the landscape, why not to approach it through the human? This could be an even more important aspect. If people do not adapt, the landscape of other nature does not adapt either.

**MUSEUM OF TORNIO RIVER VALLEY:**
- We have discussed a lot about climate change and its impacts, but we have not exactly discussed about adaptation of landscape, landscape planning, trades etc.
- This all comes again to the importance of the cultural environment and sustainable development which has not been very visible lately.

**FARMLER:**
- As field and forest owners we are right in the center of this topic. We could do almost anything if we just get a little help.
- Farmers should have a meeting with the city to see what they can do.

**CITY OF TORNIO:**
- Farmers are blamed out of proportion.

**Have the AELCLIC workshops been useful?**

**FARMER:**
- Farming is only 5% of the Tornio land but counts for 5% of the local economy (Dairy cattle area). We are doing improvements, but processes are slow. We should discuss more like this, in constructive ways.

**RIVER COMMISSION:**
- I see here an opportunity - we are few people and sparsely distributed, networks like the one in the AELCLIC project are important. Now we could have set help and guidance in this process. Let's validate that we are in.

**CITIZEN & FISHERMAN:**
- The work developed in the AELCLIC project has been useful. Versatile topics were proposed and they were processed from different views.

**FARMER:**
- The work developed in the AELCLIC project has been useful. Versatile topics were proposed and they were processed from different views.

**Next steps?**

**TORNIO CITY:**
- We can't make yet a decision, we also need to discuss this with the city of Harjavalma.

**GENERAL OPINION:**
- People were very pleased with the workshops and discussion. In addition, they think that the results have not been useless. This has been “a wake-up-call” both on a personal and collective level.

**TORNIO CITY:**
- The city council is travelling to Savo - the idea is to discuss in the bus about important topics.
- The situation is not as grim as it may seem. We do all the time different improvements. We invest in cycling, there is going on the electrification of the railway between Laulajala-Tornio-Haparanda. Outokumpu steel factory wants to move ore transport to rails, etc. Even if we are missing an overall picture of all these actions.
5.4 TASK 6: Defining next steps

- The results of the AELCLIC workshops were found useful and the City of Tornio and the Tornio local network might discuss in the future (with more time and information), how to continue working on climate change adaptation
- Some essential economic actors were missing (e.g. industry and energy sector) and more specific information/studies are needed. It would be essential to include climate change adaptation/mitigation in a broader regional or local framework: (Sustainable/Resilient Tornio?)
- the AELCLIC project has provided an open and transparent platform for discussion and some economic/social sectors were especially pleased with that
- all the materials produced in the AELCLIC workshops are public and will be fully available for the Tornio local network
- The Tornio local network designates the cities of Tornio (Finland) and Haparanda (Sweden) to lead the network in possible future actions within the AELCLIC (CLIMATE_KIC) project. Sampo Kangastalo and Göran Wigren would be their contact persons
- Sampo and Göran will be invited to the international meeting that will take place on the 13th of November in Bologna (Italy) in which all the representatives of the AELCLIC pilot landscapes will explore different options to continue working on climate change adaptation (one of that options might be to develop a LACAP (Landscape Adaptation Plan to Climate Change) with CLIMATE-KIC funding or with other sources of funding.
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SUMMARY:
- **Key CONCLUSIONS, Key DECISIONS and NEXT ACTIONS (By Whom and When):**
- **CONNECTIONS WITH OTHER PLANS & PROGRAMMES:** The AELCLIC project in Tornio is now more aligned with the *strategy of Tornio city and the Tornio-Haparanda vision 2021*. This alignment was based in the combination of the Values, Goals, Themes and Actions promoted by all these plans and in the subsequent definition of the structure of a future LACAP (Landscape Adaptation Plan to Climate Change) for the Tornio river valley. However, it is still unclear the *geographical scope of the work* (cities of Tornio and Haparanda? Urban areas and adjacent areas, mouth and last part of the Tornio river valley?). In addition, it would be important to frame a potential Climate Change Adaptation (and Mitigation) Plan in a wider framework (local or regional Plan for Sustainable and Resilient Development?) / **ACTIONS:**
- The results of the AELCLIC workshops were found useful and the City of Tornio and the Tornio local network might discuss in the future (with more time and information), how to continue working on climate change adaptation / **ACTIONS:** Some essential economic actors did not participate in the workshops (e.g. industry and energy sector) and more specific information must be not incorporated the Energy concept more clearly in the discussion. These topics were also found valid to address the Goals and Values promoted by the strategy of Tornio city and the Tornio-Haparanda vision 2021. / **ACTIONS:** Use the 5 defined topics to advance in the definition of a LACAP
- The co-defined Solutions and Barriers covered well the identified impacts and opportunities but were highly based on personal opinions. / **ACTIONS:** A potential LACAP should define the most relevant Solutions after identifying more consistently the expected Impacts and Opportunities of Climate Change in the Tornio river valley. However, the AELCLIC project includes some valuable ideas and detects adequately some of the principal barriers for the development and implementation of a LACAP.
- **STAKEHOLDERS in the developed Workshops:** Some essential economic actors did not participate in the workshops (e.g. industry, Outokumpu steel factory and energy sector. It must be noted that there were two specific conditions that became more relevant as the workshops in Tornio progressed: the transboundary character of the landscape and the importance of the industry sector in Tornio (despite its small population, Tornio, together with Helsinki, Jämsä and Lappeeranta, is one of the four Finnish municipalities consuming more than 3TWh, basically due to the presence of the Outokumpu steel factory), source Statistics Finland 2015) / **ACTIONS:** Incorporate these actors in further discussions
- **SCIENTIFIC EVIDENCE AND TORNIO-BASED INFORMATION:** In order to advance more it would be essential to get scientific evidence supporting decision making processes / **ACTIONS:** Gather and generate more site-specific information about Climate Change. It is important to remember that the AELCLIC project was not expected to generate new scientific information but to share existing one and, mostly and mainly, to generate a local debate and joint commitment between different social, economic and governmental actors.
- **NEXT STEPS:** The results of the AELCLIC workshops were found useful and the City of Tornio and the Tornio local network might discuss in the future (with more time and information), how to continue working on climate change adaptation / **ACTIONS:** Some essential economic actors were missing (e.g. industry and energy sector) and more specific information/studies are needed. It would be essential to include climate change adaptation/mitigation in a broader regional or local framework: (Sustainable/Resilient Tornio?) / **ACTIONS:** The AELCLIC project has provided an open and transparent platform for discussion and some economic/social sectors were especially pleased with that. / **ACTIONS:** All the materials produced in the AELCLIC workshops are public and will be fully available for the Tornio local network / **ACTIONS:** The Tornio local network designates the cities of Tornio (Finland) and Haparanda (Sweden) to lead the network in possible future actions within the AELCLIC (CLIMATE_KIC) project. Sampo Kangastalo and Göran Wigren would be their contact persons / Sampo and Göran will be invited to the international meeting that will take place on the 13th of November in Bologna (Italy) in which all the representatives of the AELCLIC pilot landscapes will explore different options to continue working on climate change adaptation (one of that options might be to develop a LACAP (Landscape Adaptation Plan to Climate Change) with CLIMATE-KIC funding or with other sources of funding.)
### Diagnosis:

- **Level of Achievement of the expected outcomes (from 1 (min) to 5 (maximum))**:
  - OUTCOME 1 (Co-definition of key contents for a potential LACAP (Landscape Adaptation Plan for Climate Change) for the Hyyppä river valley (values to promote, goals to achieve, impacts to address, opportunities to consider, solutions & actions to propose, barriers to overcome)). LEVEL OF ACHIEVEMENT: 5
  - OUTCOME 2 (Co-definition of a process for the definition of the potential LACAP and co-identification of required actors). LEVEL OF ACHIEVEMENT: This TOPIC was postponed and will be discussed internally by the AELCLIC_Tornio network.
  - OUTCOME 3 (Co-definition of next steps in Tornio and future works of the constituted Local Network). LEVEL OF ACHIEVEMENT: This TOPIC was postponed and will be discussed internally by the AELCLIC_Tornio network.

- **Main Shortcomings or barriers for the full achievement of the expected outcomes**:
  - The production of the OUTCOME1 was highly based in the works developed during the Workshops 1 and 2 and therefore its achievement was easier
  - The OUTCOME2 and OUTOME 3 were not addressed in the Workshop3. The production of these two Outcomes added a completely new task to the AELCLIC project in Tornio (process and actors to develop a Landscape Adaptation Plan to Climate Change (LACAP). Although the objective was to produce a very basic proposal, the members of the local networks considered that they needed more time and information to discuss the potential process and actors for the production of a LACAP. During the Workshop3 it was also detected that some crucial regional and local actors had not participated in the discussions (mainly from the industry and energy sector).
  - The OUTCOME3 implied future actions out of the AELCLIC-PATHFINDER project and it was difficult for the members of the Local network to commit themselves in future actions without knowing the implication, resources and timeframes. However, the political and administrative support to the project might guarantee its continuity and the participation of the local representatives in the AELCLIC International Meeting (Bologna, 13.11.2019) will give them the possibility to reflect a little more on the OUTCOME3.

- **Main Reasons for the successful achievement of the expected outcomes**:
  - Deep involvement and commitment of the participants
  - Organization of tasks for the allocated time (specially tasks 1 and 2), clear guidelines and effective methods
  - Increasing leadership of the towns of Tornio and Haparanda
  - Critical revision and synthesis of materials produced in the Workshops 1 and 2
  - Generation of one group for the final discussion, open and fluid final discussion

- **Learned lessons and recommendations for similar activities in other places**:
  - See Shortcomings and Barriers and See main reasons for the successful achievement of the expected Outcomes.
  - The use of the Mitigation and Adaptation concepts provided a useful and fruitful lens to analyze the multiple implications of Climate Change
  - Eliminate or keep more time for the Tasks 3, 4 (How to develop a LACAP and Who should be involved) for the Task 5 (Critical analysis of the existing local network to lead the preparation of a LACAP)
  - Give more time for the development of the Task 6 (Next Steps)
  - Considering the uncertainties affecting the future development of a LACAP (funding, resources, timeframes, etc) it was difficult to require the members of the local network to sign a formal or symbolic agreement. Probably, in other cultural contexts the end of the AELCLIC project could be signified or celebrated in a more official manner.
  - It would be advisable to give to the local network the possibility to designate an official representative for future actions or ventures within the AELCLIC (Climate-KIC) project. This local representative will be in most cases be a person from the local or regional administration. That was the case in Tornio and Haparanda, where Sampo Nangastalo (and Göran Wigren) were designated for that position

- **Learned lessons and recommendations for future activities in the same place**:
  - After the designation of an official representative of the local network within the AELCLIC project, all the discussions and initiatives to advance towards a LACAP (e.g. funding applications) will be developed in direct collaboration with the local representative.

- **Level of influence of the local characteristics (social, geographical, etc.) in the development of the activity**:
  - The importance of the river and its dynamics, together with the highly natural character of the area might explain the special emphasis on natural processes and productive processes associated to the natural landscape (agriculture, forestry, fishing, etc.). This remark can be probably applied to other highly natural areas but in the Tornio case, this situation might be intensified by the wild character of the Tornio River and the connection of this wild character to the local identity. However there were two specific conditions that became more relevant as the workshops in Tornio progressed: the transboundary character of the landscape and the importance of the industry sector in Tornio (despite its small population, Tornio, together with Helsinki, Jämä and Lappeenranta, is one of the four Finnish municipalities consuming more than 3TWh, basically due to the presence of the local steel factory)