

Wave Knowledge, Traditional Wisdom:

Project Report from the First CHERISH Traditional Ecological Knowledge Workshop

Tornio, Finland 5th – 6th September 2018

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1. Introduction: Setting the Scene

This report “Wave Knowledge, Traditional Wisdom” captures voices and aspects from the first Traditional Knowledge Workshop under the CHERISH¹ project held in Tornio, Finland in September 2018.

The main objective of the CHERISH project is to improve regional development policies to protect and promote cultural heritage in fishing communities in order to boost the attractiveness of these regions for businesses, citizens and tourists.

¹ CHERISH Creating opportunities for regional growth through promoting Cultural HERitage of fISHing communities in Europe: The main objective of CHERISH is to improve regional development policies to protect and promote cultural heritage in fishing communities in order to boost the attractiveness of these regions for businesses, citizens and tourists. Fishery communities in the EU share the same challenges with regard to climate change, tourism pressure and the transformation of the European fishing industry. The EU recognizes the valuable role of their cultural heritage for sustainable development and stimulates increased efforts to better position and profile the fishing communities, including its intangible heritage, like myths to daily practices, traditions, ecological knowledge and crafts. Through the development and implementation of new strategies utilising cultural assets of fishing communities new jobs and new products or services are created as well. Interregional cooperation and policy learning will allow exchange of experiences on the development of policy for the protection and promotion of cultural heritage in fishing communities via the integration of the lessons learnt into the regional policies. CHERISH is an Interreg Project in which nine European regions cooperate.



Remote maritime seasonal pine log cabin base in the Perämeri marine national park, Finland. This base was used by the fishermen harvesting Baltic herring on the remote island of Selkäsaari until 1950s and the larger advent of motor-powered vessels. A prime example of North Baltic seasonal fishing cultural heritage and a sustainable life with the sea and its resources.

The Snowchange Cooperative, a non-profit science organisation based in Finland, is an advisory partner working within the CHERISH Project. The role of Snowchange is to focus on regional co-learning, utilizing Traditional Ecological Knowledge (TEK) as part of the cultural heritage of the seven partner regions fishers and fishing communities.

Snowchange aims to foster regional co-learning and policy-relevancy of traditional ecological knowledge, combined with cultural heritage, with all partner regions of the CHERISH project. This will be achieved through the implementation of three TEK Workshops, the first of which was held in Tornio Finland 5th – 6th September 2018.

The report is divided into six parts. First the project purpose and scope as well as the key organisations are introduced. Then elements of traditional ecological knowledge will be discussed with some key aspects devoted to marine environments. Fourth section will discuss regional aspects of the topic across the European space. Fifth section contains some concerns and challenges regarding TEK work in the project and lastly summaries and recommendations are included. Appendix to the report includes a system outline of a TEK project that may be of use in the policy-learning and inter-regional work of the project.

The CHERISH project has seven partner regions, which are:

- Municipality of Middelburg, Netherlands
- Riga Planning Region, Latvia
- Mallorca Island Council-Environment Department, Spain
- Municipality of Kavala, Greece
- Development Co. Pafos Aphrodite Ltd, Cyprus
- Abruzzo Region - Rural Development and Fishery Policies Department, Italy
- Intermunicipal Community of Alto Minho Portugal.

The CHERISH project also has two advisory partners, which are:

- EUCC – The Coastal Union Germany
- Snowchange Cooperative².

The project will run from June 2018 until May 2023.

² Snowchange, a non-profit science organisation based in Finland, is run by Finns devoted to the advancement of their traditions and culture. Snowchange works to protect, document and revive the traditional knowledge and vital ecosystems of the circumpolar Arctic and Boreal North with a network of local and Indigenous Peoples including the Saami, Chukchi, Yukaghir, Inuit, Inuvialuit, Inupiaq, Gwitchin, Icelandic, Tahltan, Maori, Indigenous Australian and many others. Central to this work has been the cultural heritage of fishing communities. Snowchange has worked directly with communities to find ways to promote them including in the media, the science field and to the general public. Snowchange Cooperative is a world-renowned scientific organisation specialising in traditional ecological knowledge. They work with the Arctic Council, Intergovernmental Panel on Climate Change, Indigenous Peoples Climate Change Assessment, National Science Foundation of USA, and several universities and partners on questions of TEK, biodiversity, climate change and local communities.



Above: Isabel Ferrer García, Pietro Giorgio Tiscar, Miquel Angel Salvà Capó and Chris Madine during the cruise to the Perämeri Marine National Park, Finland.

Below: Views of the Park and glacial uplift islands.



2. Outline of the first TEK Workshop



Left: *Tiny Maenhout, Roos Galijaard, Effrosyni Boskou, Dimosthenis Toulkidis, Edgars Pudzis, Costakis Avgousti, Marios Ioannou, Ilias Giarmatzidis, Emmanouil Koutrakis, Pietro Giorgio Tiscar, Rosalia Montefusco, Sabrina Tieri and Isabel Ferrer García during the workshop.*

Bottom right: *Pietro Giorgio Tiscar, Miquel Angel Salvà Capó, Rosalia Montefusco, Sabrina Tieri, Chris Madine, Tiny Maenhout, Roos Galijaard, Effrosyni Boskou, Dimosthenis Toulkidis.*



Tero Mustonen from Snowchange Co-op took the main messages of the TEK workshop onwards to the Festival of Northern Fishing Traditions, also organised in Tornio on the same week.



The first TEK Workshop as part of the CHERISH project aimed to accomplish the following objectives:

- The introduction of the central concepts, work methods and inter-regional definitions of TEK in the context of CHERISH
- The mechanisms of co-learning and links between TEK and cultural heritage of fisheries
- The support for strategic plans of the participating regions in the context of TEK and cultural heritage
- Demonstration of concrete examples of TEK work and context in the North Baltic with a practical excursion out to the Perämeri Marine National Park.

The first day of the TEK workshop was designed as an interactive session, with discussion and questions between the CHERISH partner regions. The partners were encouraged by Snowchange to present their reflections and thoughts on the inclusion and uses of TEK within their CHERISH work. These discussions were undertaken within a framework of co-learning, and aimed to outline a process for the partners themselves to identify TEK within their regions. Snowchange works with each partner to produce co-learning methods that support the divergent but locally relevant approaches to TEK in each region.



The CHERISH partners were also invited to present on the status and trends regarding TEK within their region. They were also encouraged to assess their need for support with TEK issues within the CHERISH project.

The second day of the workshop was further dedicated to TEK co-learning between the CHERISH

Partner regions, and included a study trip out to the Perämeri Marine National Park. Visiting the island of Selkäsarvi and the North Bothnian Archipelago, where both contemporary local fishing practices and cultural heritage relating to local fisheries were presented.

The partner regions that attended the first TEK Workshop were:

- Municipality of Middelburg, Netherlands
- Riga Planning Region, Latvia
- Mallorca Island Council-Environment Department, Spain
- Municipality of Kavala, Greece
- Development Co. Pafos Aphrodite Ltd, Cyprus
- Abruzzo Region - Rural Development and Fishery Policies Department, Italy.

The Intermunicipal Community of Alto Minho Portugal was unfortunately unable to attend.

From the top: Pietro Giorgio Tiscar, Rosalia Montefusco, Sabrina Tieri

Middle: Miquel Angel Salvà Capó, Kaisu Mustonen.

Bottom: Ilias Giarmatzidis, Emmanouil Koutrakis, Pietro Giorgio Tiscar

3. Elements of Traditional Ecological Knowledge

Mats Innala and his wife checking a fish trap at the delta of the Torniojoki river. September, 2018.



Traditional Ecological Knowledge TEK can be defined in many ways. For the purposes of this report we use the definition that TEK is “the cumulative body of knowledge held by community members due to long affiliations to specific landscapes and generational transmission. The term “knowledge” refers in the context of fisheries to the way fishing communities know their waters and seas. It is usually expressed in local languages and dialects, including specific terms for fish, weather, sea conditions, waves, currents and placenames.”

Geometry of living fishing knowledge often includes: weather reading and navigation skills, sea shore consistency and depth, also currents and forms of the bottom. A successful outcome rests upon the positioning of the fishing site, often using triangulation and reading of multiple moving factors in a live situation. Fishing communities reflect their cultural heritage for example in the local place names, often centuries old. This includes also underwater and at-sea placenames.

Voices from the SSF Guidelines

A recent landmark instrument related to the global TEK discussions in fisheries is the “Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries of Food Security and Poverty Eradication³”, SSF guidelines for short, released by FAO in 2015.

Not all countries have ratified or implemented these FAO guidelines, but their spirit and intent, with the focus on small-scale fisheries and their TEK is exactly at the heart of this part of the CHERISH work. SSF guidelines describe at the outset that they: *“are intended to support the visibility, recognition and enhancement of the already important role of small-scale fisheries and to contribute to global and national efforts towards the eradication of hunger and poverty....Small-scale and artisanal fisheries, encompassing all activities along the value chain – pre-harvest, harvest and post-harvest – undertaken by men and women, play an important role in food security and nutrition, poverty eradication, equitable development and sustainable resource utilization...The precise characteristics of the subsector vary depending on the location; indeed, small-scale fisheries tend to be strongly anchored in local communities, reflecting often historic links to adjacent fishery resources, traditions and values, and supporting social cohesion.”*

³ Fao 2015, available at <http://www.fao.org/3/a-i4356en.pdf>



Following this definition we have put the emphasis on the small-scale fisheries and their living knowledge where appropriate in the CHERISH work. TEK is therefore understood to be associated with small-scale local fisheries, often following the 12-meter boat rule – anything larger than that is not small-scale.

SSF Guidelines position 3.2. is central to TEK work: *“Respect of cultures: recognizing and respecting existing forms of organization, traditional and local knowledge and practices of small-scale fishing communities, including indigenous peoples and ethnic minorities encouraging women leadership and taking into account Art. 5 of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).”*

Traditional knowledge is here therefore understood to be deeply embedded and included in the local culture associated with fisheries, and also distinctions can be made on *gendered knowledges*, the special roles women have in the fishery chain of work. This is reflected elsewhere as well in the SSF Guidelines.

Mats Innala and his wife demonstrating a harvest of whitefish and trout to the Workshop participants.



Small-scale fisheries are globally central for food security, culture and survival of many rural communities as can be seen in these photos from lake PhaYao in NE Thailand.



All FAO member countries, implying also all CHERISH member countries, should pay heed to the position 11.1. and 11.6. of the SSF Guidelines:

“11.1 States should establish systems of collecting fisheries data, including bioecological, social, cultural and economic data relevant for decision-making on sustainable management of small-scale fisheries with a view to ensuring sustainability of ecosystems, including fish stocks, in a transparent manner.

11.6 All parties should ensure that the knowledge, culture, traditions and practices of small-scale fishing communities, including indigenous peoples, are recognized and, as appropriate, supported, and that they inform responsible local governance and sustainable development processes. The specific knowledge of women fishers and fish workers must be recognized and supported.”

Here we find the direct policy relevancy of cultural heritage and traditional ecological knowledge under CHERISH (11.6. especially for selection of policy instruments). SSF Guidelines point to the need of including “cultural data”, i.e. TEK into the assessment of stocks and management of fisheries.

Secondly, parties to FAO are asked to ensure the preservation of TEK and associated cultural heritage of fishing communities – cultural heritage is not dead, it is alive and a viable way of life.

Climate Change as a Driver of Threat Loss of Culture and Small-Scale Fisheries

Another issue of great concern especially for the northern small-scale fishing communities in Tornio meeting was recognized to be climate change. Even though it is not a direct heritage issue it affects survival of fisheries everywhere. A major FAO document was released in 2018 on the climate change impacts to fisheries and aquaculture.⁴ It recognizes that fisheries “make a substantial contributions to the food security and livelihoods of millions of people.” If this is true and climate change is affecting fisheries, the impacts of negative changes will be felt by numerous communities far beyond the direct fisheries themselves. This is another major policy discovery for regional planning under CHERISH. For example the FAO report determines that marine capture potentials for Northeast Atlantic will be “predicted to decrease between now and 2050s”⁵.

Furthermore the FAO report goes on to define a further overview of the situation with fisheries: “Climate change has already caused noticeable shifts in the distribution and abundance of highly-distributed fish species, such as tunas, and substantial future changes can be expected under a warming climate, with important impacts on national incomes of dependent countries and for the harvest strategies currently being used for their management.”⁶

⁴ FAO 2018, available at <http://www.fao.org/3/19705EN/i9705en.pdf>

⁵ FAO 2018

⁶ FAO 2018



Dipnetting for whitefish is an age-old tradition in Tornio region, here at the Kukkolankoski rapids.

The new study calls for review and reform in the policies affecting small-scale fisheries and consequently their TEK: “*Adaptative management within the framework of an ecosystem approach to fisheries is essential for maintaining and restoring the resilience of ecosystems and species to the coming changes. This must be done with the engagement of stakeholders and in a participatory manner. Some of the impacts of climate change are certainly likely to be positive.*”⁷

⁷ FAO 2018

If the changes are profound, what are the possibilities for actions under CHERISH policy learning? If well-thought out and conducted in dialogue and partnership with the small-scale fishermen, a vast array of opportunities opens up, ranging from monitoring (see example of the Baltic Sea seal question below) to safety at sea and new markets: “*Noting the livelihood of increasing incidence of extreme events, measures to improve early warning systems, safety at sea and for protection of fisheries-related infrastructure such as safer harbours, landing sites and markets are also being considered or implemented.*”⁸

⁸ FAO 2018

Examples of Cultural and Artistic Expressions of TEK and Small-Scale Fisheries

Traditional knowledge of fishing can be socially and visually engaging as can be seen in the work of Christian Stemper with his documentary photographic project “*Lupimaris*”⁹ / Seawolves in the island of Paros in Greece. Since 2010, 99 boats and 31 fishermen took part in the artistic and documentary project. More than half of the boats of these small-scale fishermen have been lost since this time. Social and economic change will bring a millenia-old traditional fishery to its end and at the same time the traditional knowledge embedded in this particular community will be lost “forever”. Salvage operations can take place through academic documentation, but space, opportunity and potential for revitalization of this knowledge will be lost.

To offer a more northern example, the “*Clyde Reflections*” film¹⁰ reviews the situation of the Firth of Clyde in Western Scotland in the UK. It is a meditative, cinematic experience based on the surrounding marine environment, and combines the voices and traditional knowledge of scientists, fishermen, spiritual leaders, conservationists in a quest of assessing what is “natural” and “unnatural” in the local context. The film is a good example of a science – policy – art example where documented TEK can be positioned into an engaging visual display of a region under change to expand the horizons of what TEK is and how to make it visible.

⁹ <http://www.lupimaris.com/#About>

¹⁰ www.vimeo.com/89793693



Winter Seiners of Puruvesi in Eastern Finland have secured a Geographical Indicator for their fish, vendace and way of traditional harvest. In 2017 they were included in the list of Intangible Culture of Finland.

“*Winter Seiners of Puruvesi*”¹¹ is a film by American film-maker Thomas Miller documenting impacts of climate change on an ice-based fishery in Finland. Shifting ice conditions and safety issues have prompted this community to seek a EU Geographical Indicator both for the fish, vendace, and the traditional fishery of seining and fish traps

¹¹ <https://vimeo.com/217617345>

to protect and advance their TEK based ways of harvest. More recently the Puruvesi fishermen were included in the National Registry of Intangible Culture of Finland¹².

¹² https://wiki.aineetonkulttuuriperinto.fi/wiki/Winter_seine_fishing_in_Lake_Puruvesi

3.1. Some Iconic Cases of Uses of TEK in Health and Status of the Sea Environments

Traditional ecological knowledge – TEK is a globally accepted method of observing change which is deeply embedded in all small-scale and traditional fishing communities. It has been defined in literature often as a deep engagement with the seas and the shoreline environments. Ranging from a single successful fishing expedition to whole coastal cultures, these human endeavours are dependent of this “quiet” knowledge of the local environment, species, weather, waves, oral histories, harvest sites and seasonal behaviour of animals and fish.

An iconic (NON-Cherish site) example from the past, of uses of TEK in detecting changes in the sea ecosystems, is the case of the seal hunters and fishermen from the North Baltic Sea in 1969.



The thick snow pack in the inner archipelago prevented seal hunters from going out to the open sea ice for seal hunting in March 1962. Photo: Eero Murtomäki

Two seal hunters relaxing after a success in hunt and two ring seals caught in the Western Ice of the Bothnian Bay (right) in 1960s. Evald Geust, used with permission.

The sealers of Kvarken, Finland shared their observations of falling seal pup stocks to scientists. They passed the carcasses of ringed seals to researchers who could detect the presence and the extent of PCB and DDT in the meat of the seals. And further to this detected the impacts of these chemicals to the uterus of the female seals, thus alerting to a fall in stocks and the reason for it. The initial observations had been conveyed by the people possessing TEK of the local conditions.

The second emblematic case from the Baltic are the observations of the professional traditional fishermen of Pori region, for example Into Sandberg, who detected the eye-less Baltic Herring close to the coast. He went on to share

the reports of the blind fish to researchers such as Pekka Nuorteva. He then could link the origin of this with pollution from a new industrial plant upstream close to Pori, that had released uncontrollable waste waters to the Baltic sea water, impacting the herring stocks.

Both of these older examples point to a “first line of observation” by those fishermen, whose livelihoods and close connection with the sea, knowledge of the behaviour of fish and local environment, alarmed the public and authorities to new negative changes within the marine environment and on the coasts of Finland.

All of the above make TEK a holistic approach between human societies and nature.



3.2. A Special View: Low Impact Fishermen of Europe – LIFE Platform by Marcin Rucinski¹³



Late knowledge holder Esa Rahunen (left) and Markku Tervonen check a fish trap in Puruvesi, Finland 2014.

LIFE is a pan-European organization of around 30 organizations, gathering together about 10.000 small-scale fishers fishing in a way that minimizes the impact on the marine environment they operate in. Our Member Organizations are present in 16 member states, and we are proud to have the Kesalahti Fish Base as one of them. We have a close partnership with the AKTEA network, an organization supporting the crucial role women play in most small-scale fishing operations.

The raison d'être of LIFE is to represent and promote the interests of smaller-scale, low impact fishers in various management and policy processes pertaining to them. We work at European and Sea Basin levels, leaving most of the work at national level to our Member Organizations.

Our objectives:

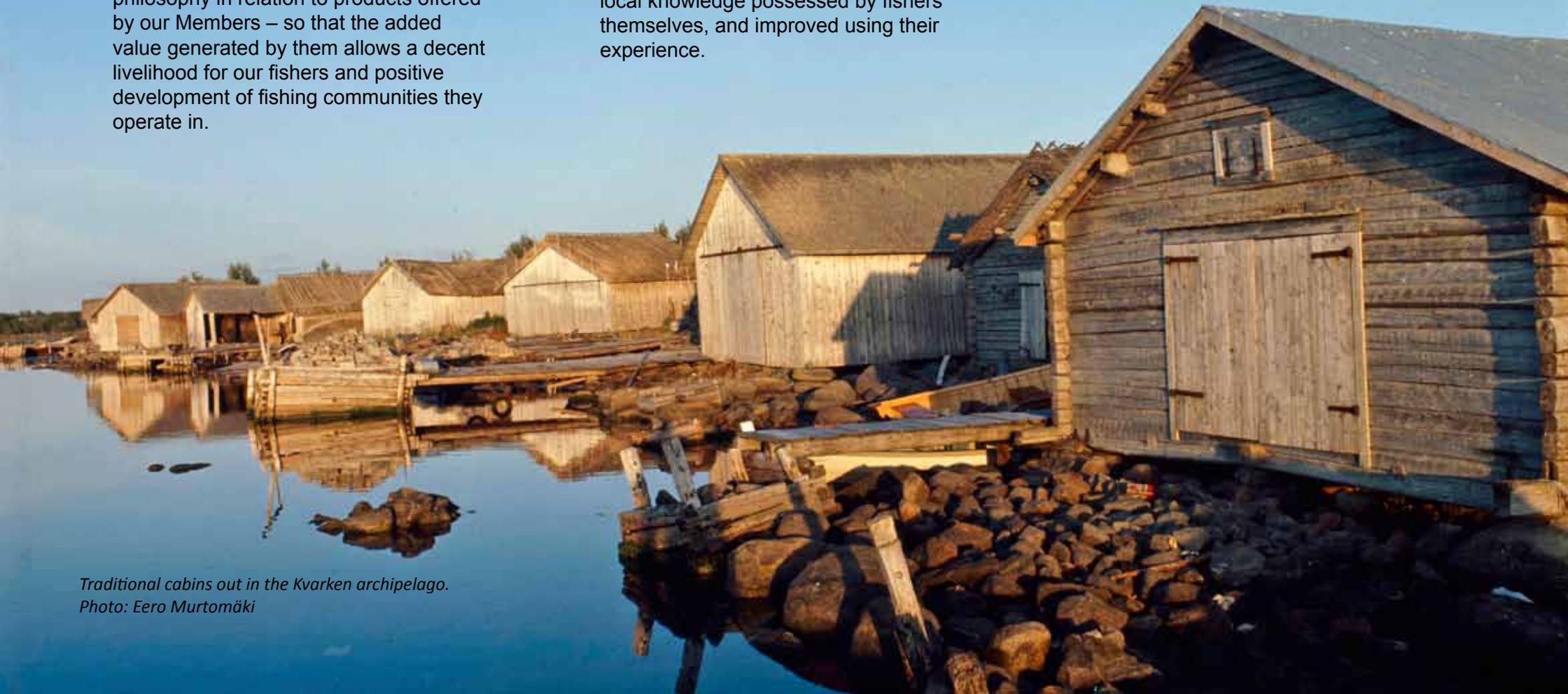
- Change the status quo to truly recognize the needs of small-scale fishers and the benefits of their low impact fishery activities
- Support our Member Organizations in their daily work
- Exert influence on fisheries and other sectoral policies that impact small-scale fishers
- Ensure rewards for fishing with low impact on the environment and proper market recognition of products offered by small-scale fishers

¹³ Baltic and North Sea Coordinator for Low Impact Fishers of Europe, LIFE. LIFE was invited to provide an opening keynote at the Workshop to offer synergies between EU-wide organisation and CHERISH working on one of the themes that LIFE is including in its aims.

Our mid-term strategy for the Baltic Sea region is built on four pillars:

1. Helping ensure the healthy fish stocks and equitably shared access to these through engagement in EU Common Fisheries Policy processes – such as determining the yearly Fishing Opportunities, technical measures, implementation of the Discard Ban; deliberations on various quota-sharing systems.
2. Implementing the “class, not the mass” philosophy in relation to products offered by our Members – so that the added value generated by them allows a decent livelihood for our fishers and positive development of fishing communities they operate in.
3. Mainstreaming the Local/Traditional Ecological/Experiential Knowledge (LEK) that our Members and other small-scale fishers possess into scientific advice provision and policy-making processes. We want to use the recently increased focus on our sector from decision-makers to ensure that scientific advice is created not only on the basis of official data and research actions, but equally – the traditional and local knowledge possessed by fishers themselves, and improved using their experience.
4. Impacting (mostly environmental) policies that have a bearing on fisheries to ensure that small-scale fishers’ interests are properly taken into consideration. In the Baltic Sea context, this is particularly important for development of seals and cormorants’ populations, and the impact of Marine Spatial Planning processes. This is one of the main reasons why LIFE has an Observer status within HELCOM.

*Traditional cabins out in the Kvarken archipelago.
Photo: Eero Murtomäki*



I particularly like the way CHERISH title is formulated. It is indeed through fostering the protection and development of fishing communities, so many of them based on small-scale fisheries, that their unique identity and heritage can be preserved. This is exactly how LIFE understands the concept of Blue Growth – as an inclusive process building on the culture, knowledge and capabilities of local communities, as opposed to investing into new maritime industries and technologies at the cost of fisheries.

Much has been written about Traditional or Local Ecological/Experiential Knowledge, this important topic, and the Workshop Participants certainly know the subject much better than a political scientist with some practical experience, like me, can ever tell.

Looking at the world, and how many examples there are of treating the knowledge of indigenous and local fishing communities in a very serious and constructive manner, I'd say that the EU has a lot of catching-up to do to grow out of its industry-led, "pure science and mathematical models-only" approach.

One important thing to do for the decision-makers of all levels is to keep in mind how the 1995 FAO Code of Conduct for Responsible Fisheries defines the "information base" for fisheries management: *"Article 6.4 Conservation and management decisions for fisheries should be based on the best scientific evidence available,*



Old lake and sea fishermen are the keepers of traditional ecological knowledge and immense experience as a result of their work. Photo Eero Murtomäki

also taking into account traditional knowledge of the resources and their habitat, as well as relevant environmental, economic and social factors."

Unfortunately, the EU Common Fisheries Policy is based on the "best scientific advice available" alone. This leads to over-reliance on science, over-burdening of scientists with policy questions they find difficult or irrelevant to respond to, and confinement of well researched fisheries management only to the stocks of the highest commercial value.

As a result of these trends, in the worst-case situations, policy and politics can even get dressed-up as science. The traditional local and experiential knowledge of fish stocks and the wider ecosystems, possessed by the fishers, is

lost in this equation. The policy itself is more prone to take bad decisions than it would when standing on two pillars rather than just one.

Small-scale fishers have a unique practical, traditional and local knowledge of the marine ecosystems, honed by their experience, that they rely upon – and which has yet to be tapped into by the scientific community. Complete dependence on the state of local fishing grounds makes small-scale fishers their best stewards. [Unlike large scale operators, small-scale fishers cannot simply sail away to pastures new if they denude their local

ecosystems]. They are the first ones to suffer the consequences of overfishing and marine pollution in all its forms, for example plastics, organic and inorganic loadings and climate change. For the same reason, it is vital that small-scale fishers also become an integral part of spatial planning processes.

Placing the Traditional/Local Ecological and Experiential Knowledge at the centre of the fisheries management equation – as part and parcel of scientific advice or its equal complement – is one of LIFE's priorities. Not only should ICES assessments benefit from it, but also the EU data collection system should be set up to make sure we make good use of it.



4. Traditional ecological knowledge within the partner regions

In the Tornio workshop the rich and diverse cultures of the project areas were presented. We discovered the different status and trends regarding traditional knowledge from across

Europe. In this section of the report key elements of each of the regions present are identified, combined with a set of policy options and actions to support TEK work further.

Fish traps resting for the season in the Perämeri area, Baltic Sea.

4.1 Mallorca Island Council-Environment Department, Spain

Case Description:

Mallorca partners presented two examples of their own good practice for maintaining and promoting TEK within their region. The first was a toponomic and marine names map, tackling the issues of loss and dilution of place names and their significance to the fishing culture of the island. They believe in the importance of keeping place names and marine names. These names denote fishing points that are strongly related to local marine and fisher people. Names are also used to describe environmental phenomena important to fishing communities.



Revitalisation of the Lateen-style boat has emerged as one successful vehicle of working with traditional knowledge in Mallorca. Photo: Mallorca Island Council

A concrete example of this is the strong connection of place names and environment. They explained that names in parts of Mallorca reflect how people lived in the season, with areas in the south-east of the island having names for several clouds that denote when a storm will come. This information allowed fishers and local people to move their boats and fishing gear to safety. However, some of the meanings associated with these place names are being lost due to the implementation of modern technology. The Mallorca partners believe place names can be saved from being forgotten by the mapping and sharing of these places and their wider significance to local fishing cultures.

The Mallorca partners suggested a way of tackling this loss of knowledge would be to use historical archives to gather baseline information. And then with the help of local people, who know the custom and names of the marine places, use the method of triangulation to map a name in its correct place. Also explaining its significance in the wider context. Another issue that was identified was that the knowledge holders were older people close to the end of their lives. There is some urgency to work with these people in recording of the names and places before this information is lost forever. The placenames have a role to play in tourism associated with cultural heritage too.



*Balear boat in full sails.
Photo: Mallorca Island Regional Council*

The second example referred to was the loss of the Lateen sailing boat unique to the Island of Mallorca. Loss of traditional boat building skills at second half of the 20th Century happened due to a change in materials and boat building techniques. The traditional shipwright methods unique to the island were dying and were becoming dangerously close to being lost forever. A private owner of the last boat to be built in the Lateen rig form from 1924, crucial to traditional fishing practices of the island of Mallorca, approached the municipality for help in renovating the ship.

The boat had an extremely high heritage value and was protected by the heritage law of the region. The vessel became a means to recover the traditional boat building techniques and also realize the renovation of the boat itself. This work was achieved through the employment of a traditional shipwright, close to retirement, in the training of ten unemployed youth from the island. The shipwright trained the young people in the restoration of the boat using traditional techniques.

This project resulted in five of the young people being employed as traditional shipwrights in the local municipality. The young people had not only gained experience of reconstruction a traditional Latin style boat, but also worked to restore other elements important to the fishing tradition of the region e.g. jetties and other heritage that is linked to the fishing communities.

Commentary and Recommendations for TEK Actions and Policies:

- Focus on the place names and archival material is a very good example. This information could be put on maps, online atlases and contemporary marine uses to chart shifts over time and space.
- Traditional weather prediction skills are good sources for storytelling. Again, documentation of this knowledge and positioning it into a dialogue with contemporary weather data is a source of innovation for the public.
- Oral history collection is greatly encouraged due to the endangered nature of this knowledge.
- Revitalisation of the Balerian boat as described above and documented in books is a similar success story as the Thorupstrand fishing community in Denmark. This case should be widely disseminated.

4.2. Municipality of Kavala, Greece and Development Co. Pafos Aphrodite Ltd

Case Description:

The Kavala partners presented thoughts on TEK within their region by highlighting the continuous link between antiquity and fishing communities across the Mediterranean, and by sharing traditional fishing techniques that are still being practiced there today. The example they gave was of a lagoon fishing system that is organised on a local level. This fishing style dates back to the Byzantine era, with the lagoons still being constructed in a traditional style from reeds and wood.



Emmanouil Koutrakis

The fish traps allow the fish to swim into the lagoon but not to escape. The lagoons are co-managed by the fishers of the area, with the catch at the end of the fishing period being divided equally between fishers. This system avoids the tragedy of the commons when all fishermen are competing against each other for a finite resource, allowing management of fish stocks collectively by the local fishers. Fish preparation techniques are, it was said, also being practiced in the traditional way. An example of this is the egg row of grey mullet, a delicacy in the Kavala area, that is still prepared as it was 1000 years ago.

The Kavala partners went on to explain that small scale fisheries persist in Greece, and that they would like to document the knowledge of these fishers before it is lost. 96% of fishers in Greece are small-scale, with over 1500 small-scale fishers in Greece in total, and approximately 400 in the Municipality of Kavala. However industrial fishing boats catch half the fish that is landed in Greece, with fishing pressures being six times over the sustainable level. In the opinion of the Kavala partners the future of fishing in the Mediterranean can only be small-scale fisheries. The Development Co. Pafos Aphrodite Ltd did not present on their reflections of TEK within their region but commented that it is very similar to that of Greece.

Commentary and Recommendations for TEK Actions and Policies:

- The case of the lagoon fishing system deserves a good English and Greek documentation both online and in print. As well the co-management system should be propagated if it really works given that equity solutions are urgently needed on the Mediterranean fisheries.
- Roe of the grey mullet might classify as a Geographical Indicator product under the EU, which might be worthwhile to explore.
- The small-scale fishermen's situation should be summarized and using new connections for example with the Low Impact Fishermen of Europe and other NGOs investigated.
- The Island of Lesbos could be a pilot case in documenting TEK related to communal and small-scale fishermen of Greece due to its historical context of multiple fishing methods and communal context.

4.3. Riga Planning Region, Latvia

Case Description:

The Latvian partners explained that Latvia is the only 'developing' country in the CHERISH project, therefore all policies must be economically oriented to be meaningful in the present day context.



The history of fishing in Latvia it was said has been heavily influence by the Soviet Union. Insomuch that during the Soviet period there was only industrial fisheries in Latvia, resulting in over a fifty-year break in usage of traditional fishing methods. However now due to the political and economic history of the country there is only small-scale fishing practiced today. It was stated that there is also less fish to be caught in the Baltic due to severe ecological issues within this fishery.

Riga regional municipalities have cultural centres that all feature the history of fishing in the district. Centres for intangible culture in Riga already work with fishers on a long-term basis, inviting them to tell stories about the fishing history of the region and to sell their products to visiting tourists. This strategy works to maintain the history of fishing in the municipalities and also aids the fishers by giving them an alternate form of income other than fishing. Another perceived hub of fishing culture is the Riga Central Market a contemporary example of living fishing heritage within the region.

Latvia is a home of many diverse fishing festivals. One of the most developed is the Carnikava Lamprey Festival. The festival began 17 years ago with approximately 300 visitors but has grown exponentially with the 2018 festival attracting over 25,000 visitors. This in the view of the Latvian partners is a win-win situation for both the municipality and fishers. The event attracts tourists enabling the fishers sell their fish for double the normal price. This shows that heritage can be used to give a positive economic result in a constructive way. The lamprey is a protected Geographical Indicator species recognised by the EU. As a Geographical Indicator the recipe for preparing lamprey cannot be altered, and the fish must be caught and prepared in a traditional way.



The Lamprey Festival of Carnikava in Latvia has emerged as a highly successful public event celebrating the fisheries, unique harvests and local culture. Photos: Edgars Pudzis

Commentary and Recommendations for TEK Actions and Policies:

- The Latvian case of lamprey and cultural heritage of fisheries represents a unique region in the sense that it is a post-Soviet fishery. Latvians have also been active in recognising their lamprey stocks under the EU GI system.
- If the gap of 50 years in traditional methods is all-pervasive, documentation of the “re-start” of the traditional harvests would be of great interest in the “post”-industrial fisheries context.
- The use of cultural centers are a well-functioning method combined with the Lamprey Festival which has grown into a massive event regionally to celebrate the fishery and the fish itself.
- It is recommended that a marine mapping and oral history project be launched. This project should include also the investigation of the Soviet era environmental legacy of both sea and freshwater ecosystems to create a baseline of sustainable fisheries in the future.



Lamprey is now enjoyed by thousands during the Festival, including in soup form. Photos: Edgars Pudzis



4.4. Municipality of Middelburg, Netherlands

Case Description:

The Middelburg partners shared that the women of Middelburg have used historic photography of the fishers of the municipality to identify and recreate woollen jumpers unique to the region. The women have identified different woollen knit patterns on old photographs, and from this have recreated the sweaters using new vibrant colours with the jumpers being currently sold as a fashion item.

The women have taken this work further by using the internet to scrutinize historic picture from across fishing regions of the North Sea, aiming to identify knit wear that is unique to Middelburg. From this analysis they have shown a clear relationship between fishers of Middelburg and fishing regions of the North Sea e.g. herring fishermen of North East England.

The Municipality of Middelburg has also worked closely with Doctor Tim Acott from the University of Greenwich, UK to document the oral histories of the fishers of the area. These oral histories are stored as an audio archive.



Tiny Maenhout, Roos Galjaard

Middelburg partners stress that there is much more to TEK issues and fisheries from the region that can be captured in a small thematic report. The richness of the regional heritage will emerge through the future work of CHERISH. Additionally some concepts such as small-scale fisheries and boat sizes are context dependent and can vary as is the case in Middelburg.

Commentary and Recommendations for TEK Actions and Policies:

- The Middelburg partners have taken positive steps to develop the fishing heritage into clothing design while maintaining a consistency with the past and the 'real traditional' outfits of the region. Equally so the interconnected North Sea fisheries will form a strong argument of shared cultural exchanges across the waters that may constitute both public and private products.
- The Middelburg partners have also taken steps to work with academic documentation of oral histories devoted to the fisheries with the University of Greenwich. The potential of this material is major. Perhaps an inventory website and summaries of the culture, fisheries and their changes over the past 100 years could be a first step in dissemination of this heritage to the public.

4.5. Abruzzo Region - Rural Development and Fishery Policies Department, Italy

Case Description:

Abruzzo Region stated they were not aware of any documented work on the inclusion of TEK in cultural and fisheries work of the region. However, some examples presented that they believe could represent TEK in the Abruzzo Region were:

- The festival of the sea: this festival takes place in the Borgo Marino Sud, the heart of the fisheries in Pescara. It is generally held during the second half of July. During the feast you can taste typical fish dishes of the region, and there are also demonstrations of the ancient fisheries arts and team games.
- Casa Museo Zizzi Mimi: this is a house located in the old fishing village of Pescara which is owned by a fisherman and has become a museum. The museum exhibits ancient traditions linked to fisheries of the region.
- The Trabocchi Coast: The Trabocchi Coast is a 70-kilometer stretch of shoreline stretching from Ortona to San Salvo on the Adriatic Sea. The coast is marked by the spread of Trabocco, fishing machine built on wooden piles. It is a stretch of coast famous throughout Italy for its natural beauty and for its diversity: each of the towns of the Coast maintains its own characteristics and traditions. The Trabocchi Coast is also a World Heritage Site (UNESCO).

- The Regata dei Gonfaloni is a historical competition between the fishing fleets of the Adriatic and Tyrrhenian coast. It represents a healthy competition and a message of twinning and brotherhood between the different fishing fleets.
- The Sagra della vongola or the Festival of clam is a festival during which citizens can taste traditional recipes based on clams. The festival is organized once a year in August along the northern coast of Abruzzo.
- The Brodetto alla vastese is a typical dish from Vasto, the southern part of Abruzzo. It is a soup born from the perfect culinary combination between fishers and farmers. The dish represents a strong connection between the cultural heritage of land agriculture and sea fisheries through the medium of recipes in the Abruzzo Region.



Commentary and Recommendations for TEK Actions and Policies:

- The Italian case is the most diverse of the partner regions with both strengths and weaknesses. One of the key actions in the future is to link the Festivals with the traditional activities, recipes and potentially for work with the Slow Food network which has its HQ in Italy.
- The Museum and Trabocchi Coast constitute world heritage level examples of Adriatic fisheries that could be used to highlight the trabocchi in the international context. Options of building new ones, such as is the case with the Mallorca boats, could be explored.
- The Regatta and fishing competitions should be explored as mechanisms of passing traditions and documenting oral histories of fisheries. Schools if not already should be involved in the work.
- The recipes and dishes could be registered under the Geographical Indicator programme of the EU, as Italy has pioneered the uses of GIs.

Trabocco, a fishing construction endemic to the Abruzzo region.

5. Concerns raised by partners during the workshop

The workshop was a success in the sense that it did identify a range of challenges to do with the application of traditional ecological knowledge in the CHERISH context. Simultaneously all participants agreed that it is early in the project to yet fully judge what will work and what will not, especially in the context of policy relevancy.



Left: Sabrina Tieri Rosalia Montefusco.

Top right: Kaisu Mustonen, Isabel Ferrer García,

Bottom right: Emmanouil Koutrakis, Chris Madine, Dimosthenis Toulkidis

A list of early concerns, not necessarily problems per se, but issues to be tackled under the TEK context, was raised by the participants:

1. TEK should be understood as a central living component of cultural heritage of the small-scale fisheries. It is by its nature small-scale. This has been confirmed and well developed in the UN / FAO SSF Guidelines that can form a good basis of regional policy reforms in the context of how fisheries are understood.
2. Cultural heritage of the small-scale fisheries is a living thing and in need of support. It may provide other secondary services and benefits in tourism and other ways of life, but TEK actions and regional policies should stress the living, existing fishers where appropriate and where applicable. This may not always be the case due to loss of living communities but where possible, living connection with fishers possessing TEK and CHERISH should be strengthened.
3. Climate change will affect all fisheries of the project regions. Monitoring, reformative management, food security and inclusion of small-scale fisheries into adaptation strategies has been now supported with documentation from FAO and other parties.
4. What is referred to as TEK may be known in different terms in different cultures, regions and languages. Cultural heritage, folklore, user knowledge and so on are some of the concepts that may be related to future TEK work. CHERISH partners need to identify first their particular context locally and then position this understanding into the regional co-learning under the project itself.
5. Not all regions are equipped with a TEK coordinator. In order to alleviate this particular concern, Snowchange will continue to foster co-learning across regions. In special cases, purchased services may be needed to further complement the work.
6. Contact with a living fishing community is of paramount importance in many cases. Gap between “fishing communities” and “fishermen” need to be solved in order to review and develop living knowledge assets. This is also related to item 5 and 2.
7. Links between “sectors” of fishing are needed to value TEK. People involved for example in regional development, tourism, fisheries and food production need to work together to find the synergies that guarantee success in TEK work.
8. Any traditional ecological knowledge identified and recorded during the CHERISH project could be degraded if not protected and presented in the correct way. It was noted by CHERISH partners that due to tourist pressures traditional practices can be changed, resulting in a detrimental impact on them. This is an important tension that was highlighted between traditional ecological knowledge and tourism pressures.



*The Sea Eagle is a familiar sight nowadays for the fishermen on the lakes and seashores of the Baltic region.
Photo: Eero Murtomäki*

9. Utilisation and monetisation of TEK within fisheries by industrial fishing practices. An example of this was given of the documentation of spawning grounds of fish, which may then be exploited by industrial fishing practices if the information was made publicly available.

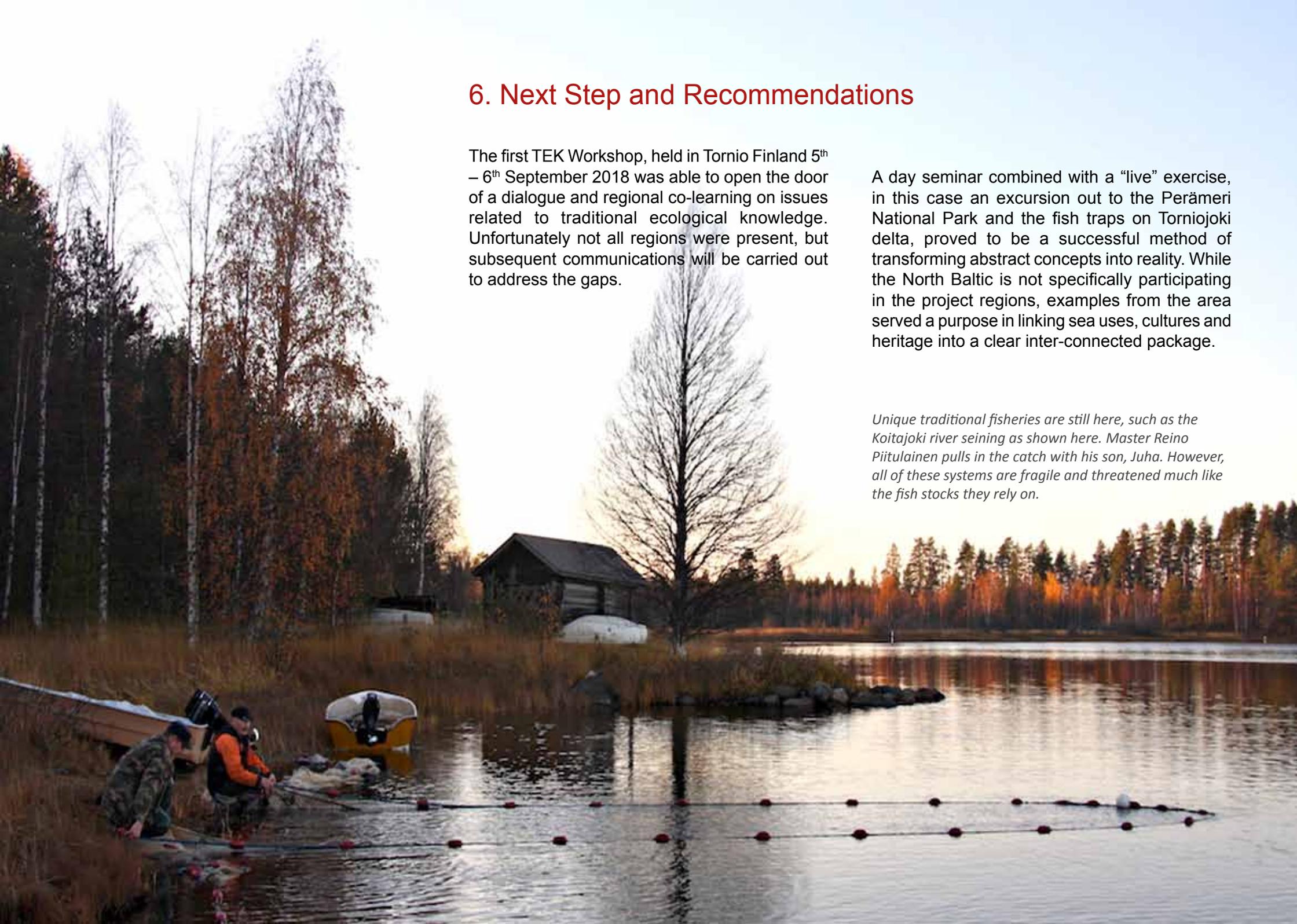
Snowchange will work with partners to alleviate and address all of the above concerns during the project.

6. Next Step and Recommendations

The first TEK Workshop, held in Tornio Finland 5th – 6th September 2018 was able to open the door of a dialogue and regional co-learning on issues related to traditional ecological knowledge. Unfortunately not all regions were present, but subsequent communications will be carried out to address the gaps.

A day seminar combined with a “live” exercise, in this case an excursion out to the Perämeri National Park and the fish traps on Torniojoki delta, proved to be a successful method of transforming abstract concepts into reality. While the North Baltic is not specifically participating in the project regions, examples from the area served a purpose in linking sea uses, cultures and heritage into a clear inter-connected package.

Unique traditional fisheries are still here, such as the Koitajoki river seining as shown here. Master Reino Piitulainen pulls in the catch with his son, Juha. However, all of these systems are fragile and threatened much like the fish stocks they rely on.



During the workshop and subsequent dialogue with the partners we have discovered that TEK is central to all small-scale fisheries and communities. It has been internationally recognized in the SSF Guidelines, which are to be recommended to be studied by all regions as a policy starting point. Even if not all countries have ratified them the Guidelines contain a wealth of information and starting points on how to develop TEK issues in the policy realms.

We have also discovered that global climate change will shift our oceans and marine environments, and therefore our fisheries and their knowledge and food security systems this century. Policies should be reflecting the opening opportunities of working with TEK for example in monitoring, establishing ecological baselines, economic opportunities of shifting species and maintaining local food security.

Small-scale fisheries are often easy for iconic visual and artistic expressions. This report has mentioned three cases of uses of film and photography to develop the cultural heritage both into cooperative ventures and art, that in their own term support and stress the place-based TEK and local cultural heritage, through *Lupimaris* in Greece, *Clyde Reflections* in the UK and *Winter Seinners of Puruvesi* in Finland.

Rivers and water ways demostate amazing resilience even though hydropower construction, ditching, damming, pollution and diverting have altered many of them. Koitajoki river in North Karelia still maintains an endemic whitefish population despite a century of man-made alterations.



As a result of the workshop, Snowchange Cooperative has proposed a three-step framework to proceed with the exploration of TEK within the CHERISH project:

1. Continued co-learning between CHERISH partner regions, facilitated by Snowchange during ILEEE and TEK Workshops, with the aim of sharing and improving policy relevant aspects of TEK from their areas. This will require participation using both digital means and on-site meetings, as well as part of the ILEEE and TEK Workshops between Snowchange and each of the partner regions. Success will be achieved with monthly scouting and scanning by Snowchange staff with each of the partners to identify and strengthen the particular TEK elements in the regions.
2. The production of case studies by partners from the partner regions to highlight best practices of TEK: Some of these case studies have been identified in part in this report. Dissemination of the materials could take the form of mapping and translation of some of the cultural heritage elements from local languages into English at least as a small case study examples. Online atlases, such as the Atlas of Community-Based Monitoring¹⁴ may provide visual tools to portray change and TEK over time and space. The idea of fostering a dialogue of TEK and science in sea environmental monitoring could open up new opportunities for support to the fishing communities today. FAO has developed a progressive document, the so-called SSF Guidelines, that include a wealth of policy positions building on TEK and cultural heritage of small-scale fisheries that can quickly be opened up for review in each region.
3. There is a need for creation of strategies by CHERISH partners involving the young people of their regions. This will result in the support and preservation of their own TEK. Cultural loss and collapse of TEK systems as living heritage is immense and acute across Europe. This is due to a number of drivers including old age and the non-profitability of small-scale fisheries. Central to the challenge are the mechanisms by which young people, either as managers or actual fishermen and -women, could be attracted to the trade. This requires the often hidden histories and realities of fishing culture to be made visible. Therefore a substantial policy shift is needed where local schools and educational enterprises will work with the fishing communities and regional bodies, such as the Latvian cultural centers, to support the living heritage.



¹⁴ <http://www.arcticcbm.org/index.html>

*River seine drying on traditional kiermi, a seine stand, on River Koitajoki.
Photo: Reino Piitulainen, used with permission*

Appendix: TEK Process Outline

All regions and cultures are unique and different. However, there is a skeleton model of identifying and documenting TEK materials. Snowchange has often utilized the following process of collection and dialogue method for TEK work:

1. *Identifying the geographical, social and environmental scope and resources of the aimed TEK work (an island, a bay, a part of the sea, full coast, interregional territory)*
2. *Identifying key stakeholders of TEK work (fishermen themselves and their organisations, regional authorities, museums, cultural organisations)*
3. *First stakeholder meeting, identifying the team that will work with TEK, including a mapping unit most often, agreeing on rights, free, prior and informed consent, reporting*
4. *Meeting and coordinating interfaces and meetings with the fishermen – for example 8-10 fishermen will take part*
5. *Interviews, documentation using visual and audio means, trips out to sea, local workshops, maps, archival materials, translations if needed*
6. *Producing a draft range of materials based on the Action item 5 and taking into the stakeholders and affected fishermen and -women to make sure they are comfortable in the methods and contents, prior approval needed always*
7. *Corrections to the materials*
8. *Finalisation of a range of materials (reports, websites, films?)*
9. *Release of the products*
10. *Follow-up and dissemination works*



Landscapes and ecosystems of the Perämeri National Park are the result of glacial rebound that has created unique islands and sub-Arctic fishing culture on these remote islands.

