Circumpolar workshop on Arctic Plastic Pollution

April 12-13, 2021

Workshop Notes

Photo: Peter Prokosch /GRID-Arendal

Executive Summary

This document provides notes and summaries from the online Circumpolar Workshop on Arctic plastic pollution that took place April 12th –13th 2021. The workshop was hosted by the UArctic Thematic Network on Arctic Plastic Pollution (TN) in partnership with the Arctic Council (AC) working groups the Arctic Monitoring and Assessment Programme (AMAP) and the Protection of the Arctic Marine Environment Working Group (PAME). The main goals of the workshop were to improve collaboration on research and development within the TN and between the network and AC working groups.

Based on the workshop, the TN took away eight main action points that are related to facilitating the network of actors working on marine litter in the Arctic, improving the opportunities for and information provided to students, creating online platforms for information sharing, ensuring sustained funding of the network, and assisting researchers with outreach to Arctic communities and actors outside the Arctic.

Introduction

On April 12th and 13th GRID-Arendal hosted the Circumpolar Workshop on Arctic plastic pollution online in partnership with the Arctic Council Working Groups AMAP and PAME. The main objectives of the workshop were:

1. To further develop research and education on plastic pollution in the Arctic.
    a. To develop transdisciplinary research ideas to address the knowledge gaps (which can be developed into project proposals at a later stage)
    b. To improve the curriculum on plastic pollution across the region
2. To strengthen collaboration between the UArctic and relevant Arctic Council working groups and to improve knowledge about plastic pollution and implement measures to reduce plastic pollution in the Arctic.
3. To further strengthen the UArctic Thematic Network on Arctic Plastic Pollution

The workshop participation was by invitation only, and 70 of the invitees registered for the workshop. There were about 50 participants present in the workshop on both days. The participants were professors, researchers and students from universities as well as marine litter experts working for NGOs and private companies. In addition, there were indigenous representatives, public officials, and members of PAME and AMAP expert groups.

The workshop was organized as a mix of group work, plenary presentations and a moderated panel discussion online on a Zoom meeting platform. A pre-workshop survey was implemented through the online whiteboard app Miro for the registered participants to map their own and their organizations priorities and activities related to marine litter as well as relevant courses and other educational opportunities. The participants could freely add notes directly to the Miro platform where the notes were saved. The results of the pre-workshop survey were also reflected in the plenary presentations given before the group work sessions.

The group work during the workshop was done on the Miro platform. The participants were divided in eight pre-set groups each having a group facilitator who facilitated the discussion that took place in different breakout rooms. The results of the group work were summarized by the group facilitators in the plenary session, and the notes by each group were also saved on Miro for further analysis.

Background

UArctic Thematic Network (TN) on Arctic Plastic Pollution was established by GRID-Arendal in 2019. The aim of the TN is to foster networking and exchange of knowledge and coordination amongst the experts of the many different disciplines that have a bearing on plastic pollution. At the time of the workshop, the TN has 12 members in addition to GRID-Arendal.

The TN is also aiming to strengthen collaboration between the UArctic and relevant Arctic Council working groups. For the workshop, the TN partnered with two of the working groups: AMAP which was developing the first monitoring plan on microplastics and litter in the

Arctic ecosystem, as well as with PAME, which was working on the Regional Action Plan on Marine Litter, both relevant for the theme of the workshop.

The workshop was originally designed as a satellite event of the International Symposium on Plastics in the Arctic and Sub-Arctic Region in Iceland in 2020. However, the Symposium was postponed and transformed into an online event due to the pandemic. For the same reasons, the workshop took place online in April 2021.

Results

The group work was stimulated by a list of questions given on the Miro platform. These questions were drafted before the workshop to support the group work. However, the group facilitators were encouraged to allow new ideas and suggestions under the main themes of the group work sessions be picked up and discussed freely.

Below are a summary of those participant notes, including key points from the group facilitators as well as notes taken from presentations and the plenary discussion. The notes have been grouped in four main categories that arose from the results of the discussions.

Collaboration and networking

Central topics of the workshop included how to improve collaboration between various stakeholders working on plastic pollution, and how the network can expand in a meaningful way. Several discussions included the idea of **the UArctic TN serving as a facilitator for increased collaboration and coordination.** Several participants argued that there is a need for increased cooperation, and the workshop itself was highlighted as a good example of how the TN can function as a network facilitator. The TN takes the comments as a signal that participants are interested in further initiatives.

One such initiative that was proposed was to **organize focused, thematic workshops**, meaning workshops that has specific methodological approaches as its focal point. These niche workshops would also work towards another point that was raised several times, namely capacity building across organisations and communication of best practices. Other suggested approaches to capacity building were through **online educational platforms, and a database on ongoing research and relevant stakeholders in the Circumpolar Arctic**.

Another specific suggestion was sharing of laboratory facilities through **creating a participatory network of laboratories**. This could increase researchers´ access to a broader set of laboratory equipment that are not available in their local facilities. Such a collaboration could also increase knowledge sharing as well as standardisation as lab sharing would lead to sharing of best practices.

Similarly, other forms of cooperative research projects were suggested. Some examples were given, such as meta-studies and collaborative discussion papers. These research projects could also be targeted at AC WGs to ensure policy relevant research. Cooperation could also be organised through joint international cruises, providing more researchers with the opportunity to participate in such cruises as well as increasing the geographical analysis of marine litter.

Funding is a central part of marine litter research, and there are multiple existing schemes that researchers can tap into. It was suggested that the UArctic TN could take on a facilitating role here as well. In addition to promoting the national funding mechanisms that exist through UArctic, t**he thematic network could also ensure sustained network funding, contributing to a temporal sustainability in actions**.

The final inputs in regard to cooperation was targeted on how to expand the network. Today, the TN mostly consists of actors from academia and other organisations working with marine litter. Expansion could focus on other types of stakeholders to expand its competence and trans-sectoral reach. For example, actors from various economic sectors could give valuable input to research and increase research outreach. By reaching out to technical universities educating fishers and aquaculture professionals, one can also create a bridge between marine litter research and other sectors.

Monitoring and assessment research

Monitoring was one of the biggest topics discussed during the workshop, and references to monitoring, assessments and quantification of marine litter was made in all groups and on different discussion points. The notes from the working groups in this category were targeted towards increasing our shared understanding of the current plastic stock, learning about pathways to understand accumulation in given areas, and use this knowledge to create improved mitigation solutions.

Much of these notes were also framed in relation to standardisation and harmonisation of methodology, a framing that is highly relevant thinking of AMAP´s Monitoring guidelines. Many participants argued that academia and **UArctic could contribute to the work on creating harmonisation in methodology and therefore assist the work of AMAP**. This is therefore a concrete example of the synergies between AC and UArctic. If successful, a move towards increased standardisation could make comparison between studies easier, and help the research community get a better overview of the problem at hand. This is also linked to the importance of sustainability of monitoring, ensuring that areas are studied over time and continually revisited. The methodological discussions moved towards the goal of being able to better quantify the litter in the Arctic and create a baseline for future monitoring.

The importance of rivers was also discussed. Many argued that rivers are important pathways of litter and one of the main contributors in some regions, while at the same time pointing out the gaps in our knowledge regarding rivers. Thus, several participants voiced that **rivers should be one of the priorities in UArctic TN members´ research**.

Another aspect falling under the monitoring category was related to the efficiency of policy and mitigation mechanisms. This should be done by studying a given area before and after a policy implementation to see if it has had any positive impact. In this way, countries and regions can support each other through trial and testing, moving towards better solutions.

A final sub-category to monitoring and assessment was discussions and suggestions to increase the knowledge of impacts, particularly related to toxicology and health for both humans, fauna and flora.

Education

One of the main goals of the workshop was to enhance the opportunities for students to study and learn about marine litter in the Arctic. Overall, there was mostly positive comments on how such activities could be organised. At the same time, several important concerns were raised related to the barriers of developing a circumpolar program for students. One of the main barriers are the different countries policies and structures in their respective education sector, another is the language barrier. However, in general there seemed to be a positive view of developing larger and smaller cooperation projects, to expand the opportunities for students and to help students find the opportunities that already exist.

Regarding the latter, there were several suggestions to **create an online platform that functioned as a one-stop-shop**, containing information on projects and courses around the Arctic. Such a platform could for example be linked to the already existing UArctic course catalogue. Several participants highlighted that this catalogue was particularly good, at the same time as many said they were unaware of its existence. Communicating and promoting at campuses are therefore important mechanisms to ensure that students are provided information of their possibilities.

Because it is difficult to create a circumpolar cooperation project within the field of education, it was suggested that **mobility of experts around the circumpolar Arctic** could raise the interest in and provide inspiration for students and young researchers. This could either be done through inviting experts as guest lecturers or through having more informal presentations and workshops on different campuses across the Arctic. While online events are better than nothing, it was emphasised that physical events have a higher impact and is preferred by students.

One of the questions participants were asked in their group work was regarding the content a curriculum on marine litter in the Arctic should include. Here the suggestions covered much terrain, spanning from a physical science approach with lab work, toxicology, monitoring and modelling, to topics that are more solution-oriented focusing on policies and behaviour changes. In other words, **interdisciplinarity** was key, and it was suggested that students could start with more general courses and then have the opportunity to specialise in their preferred field. It was also suggested that **courses should be available at different depth at undergraduate and graduate levels, and also have non-academic courses for the general public.**

In the discussions on education, **building and strengthening networks** were proposed. Networks could be formal in the sense of shared courses and mobility between institutions, and more informal through having common workshops and network events for students.

Communication (policy work and outreach)

The final category has here been called communication, and its main components are outreach and policy work. Communication was put forwards under different questions as a pivotal part of creating impact with research. Outreach can be t**argeted at different audiences, depending on the research at hand, and is interconnected with creating an interdisciplinary network**. Some participants highlighted the importance of changing practices of fishery and aquaculture, industries, and the general public. This calls for

cooperation and inclusion of actors outside the AC and academia. Other workshop participants emphasised the need to work towards policy change through building on research within the network on how plastic pollution can be restricted. Lastly, **cooperation and outreach to local communities around the Circumpolar Arctic** was brought forward. This outreach could take form of a dialogue, where local and traditional knowledge could contribute to research that responds to health concerns and perhaps help communities reduce pollution.

The way forward

The UArctic Thematic Network on Arctic Plastic Pollution will discuss internally and with external partners and collaborators as well as seek for funding opportunities to take forward various potential points of action that resulted from the workshop discussions.

These points are listed below in a random order:

1. Organize focused, thematic workshops to increase harmonization of methods, develop capacities and promote best practices across the network.
2. Build on the UArctic course catalogue to create a one-stop shop for interdisciplinary courses, talks, workshops and other relevant events for students and the general public wanting to develop within the field of marine litter.
3. Develop an online database for ongoing research and relevant stakeholders in the Circumpolar Arctic.
4. Initiate a development of a participatory network of laboratories.
5. Secure sustained network funding.
6. Ensure more involvement with indigenous communities, for example through an up-coming Canadian funding call.
7. Assisting with outreach to local population around the Circumpolar Arctic.
8. Increase interaction with actors from outside the Arctic.

Acknowledgements

We would like to thank all the individuals who contributed to the workshop before, during and after. Especially, we are grateful for the speakers Jan Rene Larsen, Jessica Nilsson, Amy Lusher, Thomas Maes, Catherine Cambers; the group work facilitators Tina Schoolmeester, Jannike Falk-Andersen, Hermanni Kaartokallio, Catherine Chambers, Ludmila Ivanova, Jan Ekebom, Madelain Bourdages, and Bonnie Hamilton, the panelists Kirsi Yletyinen, Marina Kalinina, Mathis Blache, Amy Lusher, Jan Ekebom, and Anna Sinisalo as well as Torjus Solheim Eckhoff for technical support. The workshop was organized by UArctic Thematic Network on Arctic Plastic Pollution in partnership AMAP and PAME. The workshop was funded by the University of the Arctic through UiT, The Arctic University of Norway. The project partners were UiT, GRID-Arendal and the University Centre of the Westfjords, Iceland.

Appendices

1. Workshop program
2. Notes of the group work on Miro Platform

Appendix 1 Workshop program

Circumpolar workshop on Arctic Plastic Pollution

- Science, knowledge and education

12th April– 13th April, 2021

Location | Online

Hosted by *the* UArctic Thematic Network on Arctic Plastic Pollution in partnership with the Arctic Monitoring and Assessment Programme (AMAP) and the Protection of the Arctic Marine Environment Working Group (PAME).

Objectives of the workshop:

1. To further develop research and education on plastic pollution in the Arctic
    a. To develop transdisciplinary research ideas to address the knowledge gaps (which can be developed into project proposals in a later stage)
    b. To improve the curriculum on plastic pollution across the region
2. To strengthen collaboration between the UArctic and relevant Arctic Council working groups and to improve knowledge about plastic pollution and implement measures to reduce plastic pollution in the Arctic
3. To further strengthen the UArctic Thematic Network on Arctic Plastic Pollution

Workshop format: Mix of group work, plenary presentations and a moderated panel discussion.

- **Before the workshop**: All the participants are requested to contribute to create a joint DPSIR assessment on marine litter in the Arctic before the actual workshop via an online collaborative whiteboard platform. We will also map educational opportunities for Arctic students on the topic to begin with a discussion about a curriculum on marine litter. The link to the whiteboard platform (Miro) will be shared with the registered participants one week prior to the workshop to stimulate discussion on future actions and opportunities.

- **Day 1**: Plenary sessions with presentations and group discussions. The format will be adjusted according to the number of registered participants closer to the date.

- **Day 2**: Plenary session: Group facilitators reporting key messages. Panel discussion with selected group facilitators and invited panellists.

Main stakeholders: AMAP and PAME, UArctic Thematic Network on Arctic Plastic Pollution and other relevant UArctic members.

Agenda of The Workshop

Day 1 April 12

14:00-14:10 CEST (UTC +2)	*Plenary*: **Opening remarks and introduction to the workshop** *Jan Rene Larsen, AMAP; Jessica Nilsson, PAME; Anna Sinisalo, UArctic Thematic Network on Arctic Plastic Pollution*
14:10-14:20	*Plenary presentation 1*: **Science and Knowledge: Gaps and Priorities** *Amy Lusher, The Norwegian Institute for Water Research (NIVA) / AMAP*
14:20-14:30	*Plenary presentation 2*: **Introduction the drivers, pressures, state, impacts and responses in the Arctic** *Thomas Maes, GRID-Arendal*
14:30-15:15	*Breakout rooms:* **Thematic working session Part One: Science and Knowledge** *Group facilitators: Tina Schoolmeester, GRID-Arendal; Jannike Falk-Andersen, SALT; Hermanni Kaartokallio, Finland Environment Institute (SYKE); Catherine Chambers, University Centre of the Westfjords; Ludmila Ivanova, Kola Science Centre; Jan Ekebom, Ministry of Environment of Finland /PAME; Madelain Bourdages, Charleton University / AMAP; Bonnie Hamilton, University of Toronto / AMAP*
15:15-15:30	**Break**
15:30-15:40	*Plenary presentation 3*: **Educational opportunities in the Arctic** *Catherine Chambers, University Centre of the Westfjords / UArctic Thematic Network*
15:40-16:10	*Breakout rooms:* **Thematic working sessions Part Two: Education** *Group facilitators as above*
16:10-16:15	*Plenary*: **Wrapping up Day 1** *Tina Schoolmeester, GRID-Arendal / UArctic Thematic Network*

Day 2 April 13

14:00-14:05 CEST (UTC +2)	*Plenary*: **Welcome to Day 2** *Anna Sinisalo, GRID-Arendal / UArctic Thematic Network*
14:05-14:35	*Plenary*: **Key messages from the thematic working sessions** *Group facilitators from each breakout room in Day 1*
14:35-14:40	**Break**
14:40-15:30	*Plenary*: **Panel Discussion– Way forward for the Thematic Network** *Moderator: Kirsi Latola, UArctic / University of Oulu* *Panelists: Marina Kalinina, UArctic / Northern (Arctic) Federal University; Mathis Blache, University Centre of the Westfjords; Amy Lusher, NIVA / AMAP; Jan Ekebom, Ministry of Environment of Finland /PAME; and Anna Sinisalo, GRID-Arendal / UArctic Thematic Network on Arctic Plastic Pollution*
15.30-15:45	**Concluding remarks** *Tina Schoolmeester, GRID-Arendal / UArctic Thematic Network*

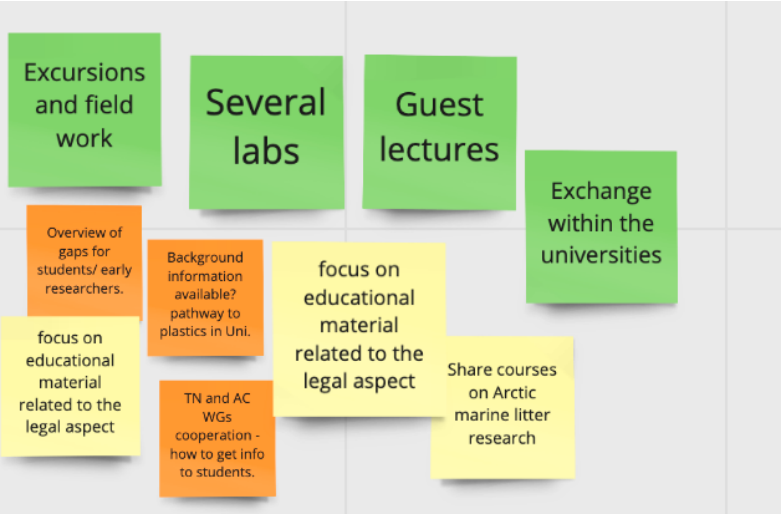
Appendix 2

Miro notes:

(Collected from: https://miro.com/app/board/o9J_lK8M9RA=/)

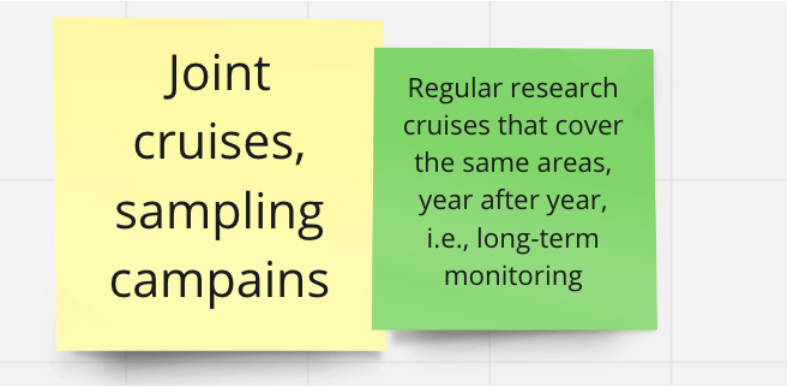
Question 1: How can the UArctic academic community contribute to filling the research gaps and implementing measures to reduce plastic pollution in the Arctic?

Education

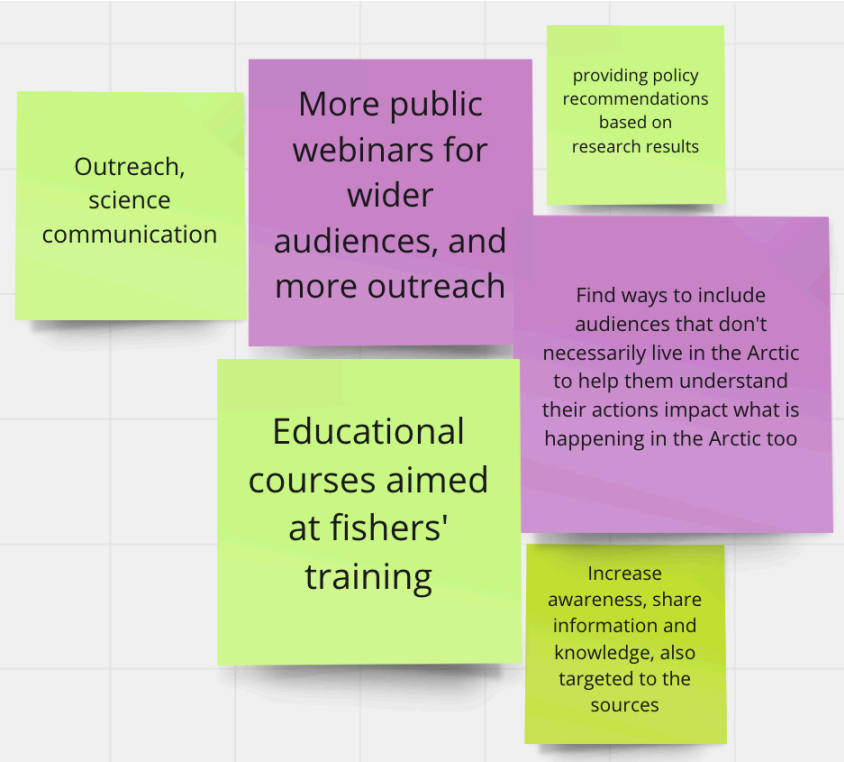


Assessment and monitoring

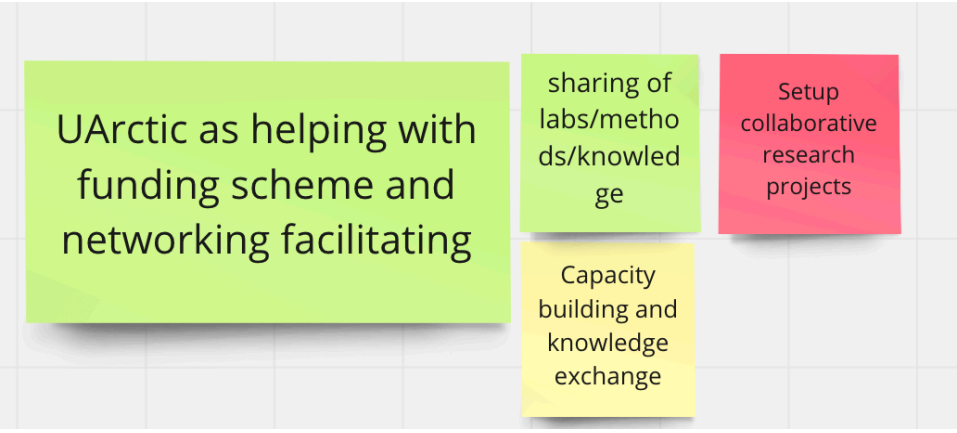
Joint Cruises



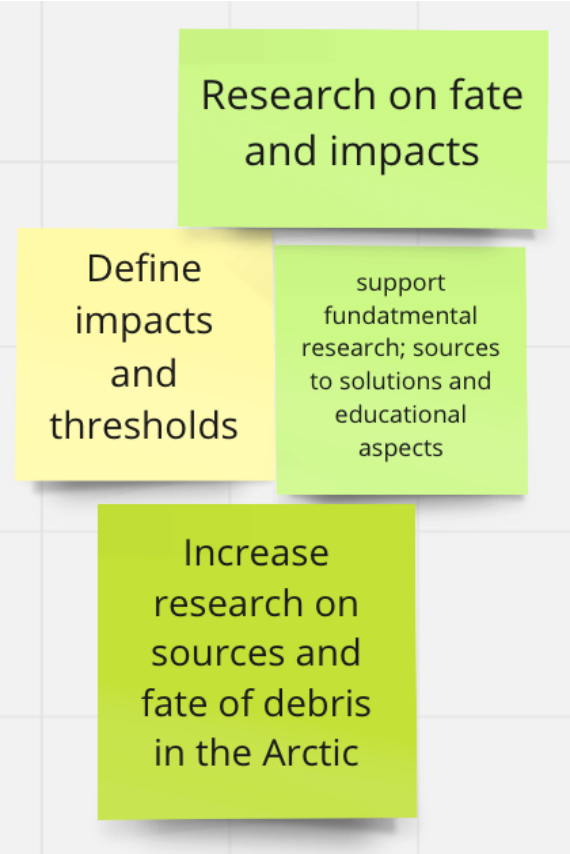
Outreach and communication



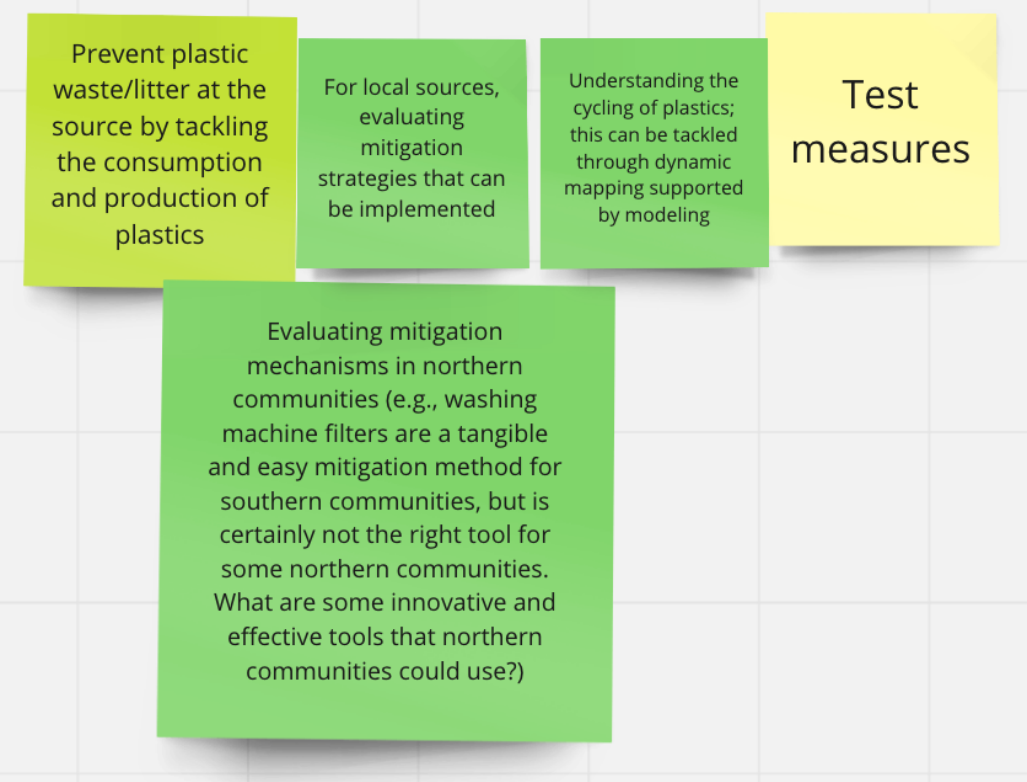
Collaboration and network



Research on impacts



Research on behaviour and mitigation



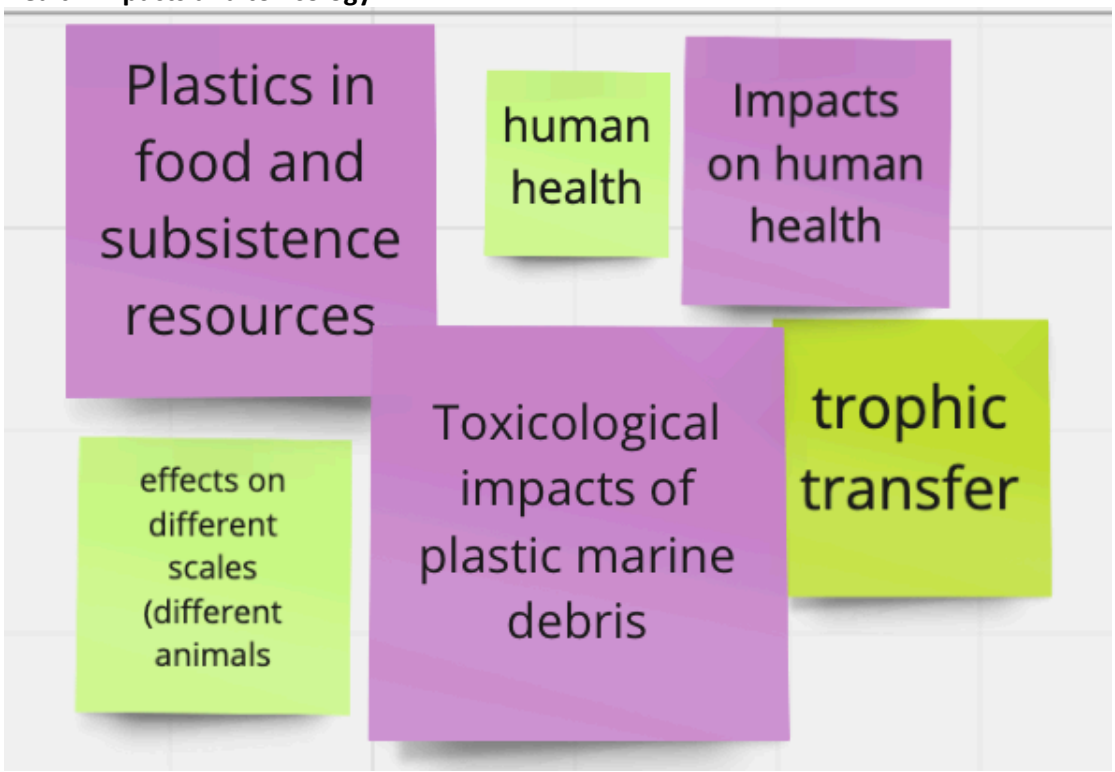
Question 2: Which of the priorities should and can be addressed by UArctic to reduce plastic pollution?

Types of litter

Standardisation

Spatial distribution and spatial differences

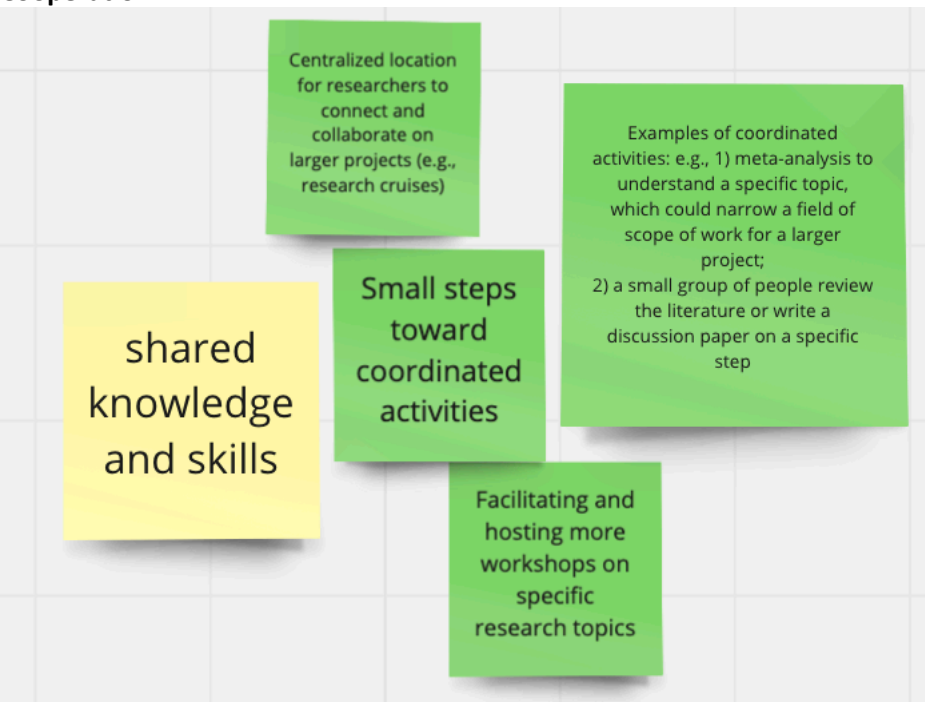
Health impacts and toxicology



Policy work and outreach

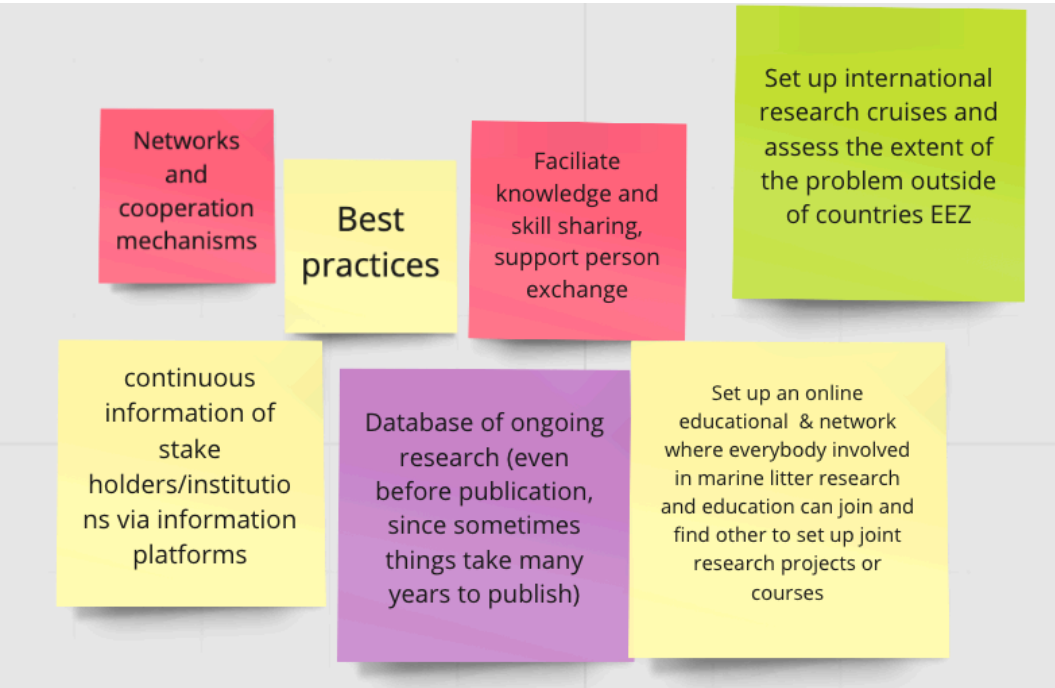
Waste treatment and recycling

Cooperation

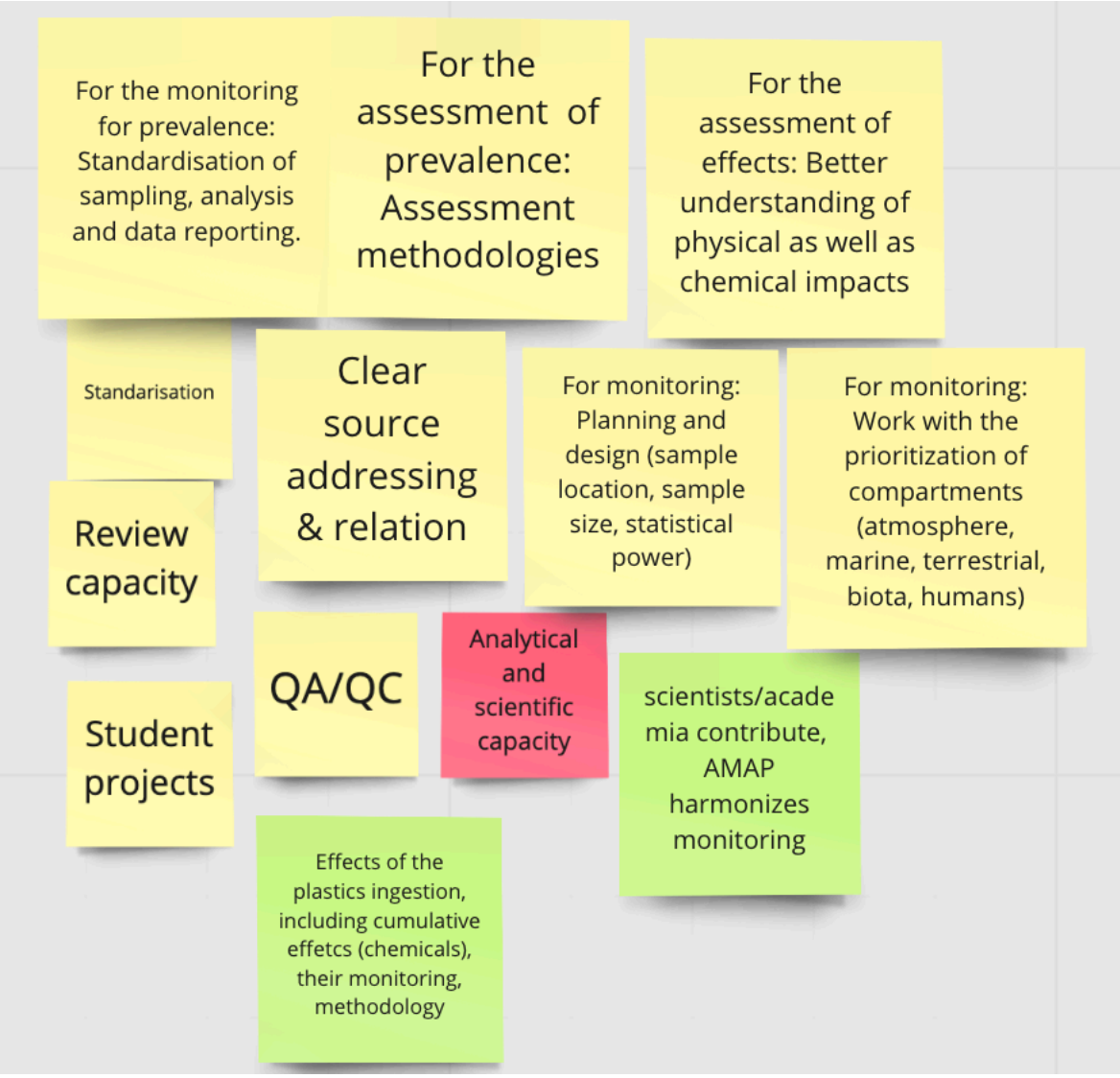


Question 3: What kind of support can the Thematic Network provide to Arctic Council and its working groups on plastic pollution in the coming years?

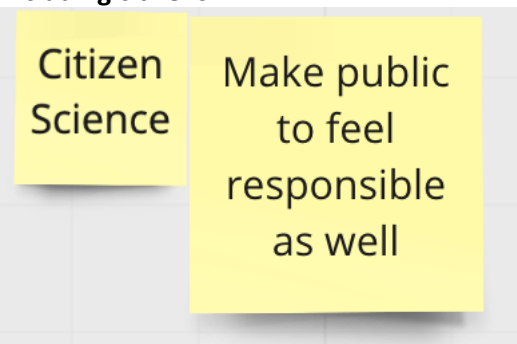
Network and coordination efforts



Research and monitoring



Including citizens

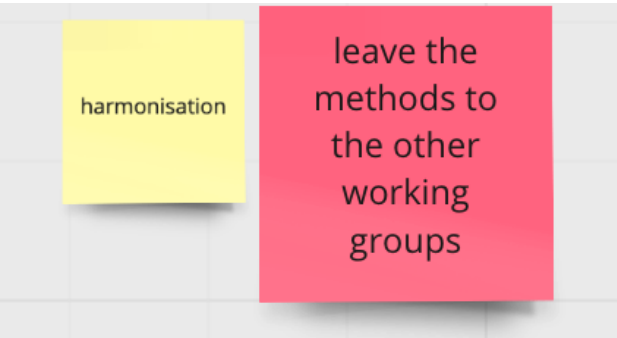


Question 4: What should be the focus areas of the Thematic Network to contribute to the development of future research on plastics in the Arctic, including sustainable solutions?

Sustained collaboration

Plastic Budget

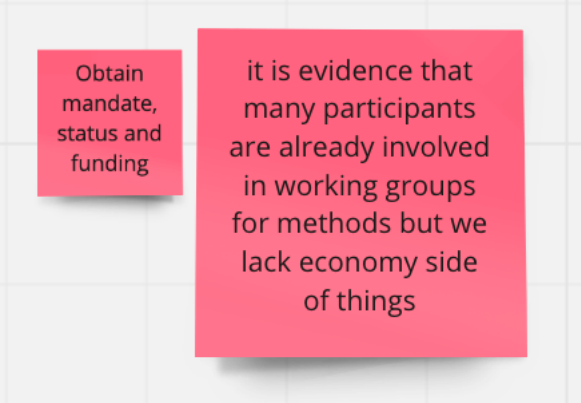
On methods



Stakeholders

Question 5: What are the best ways for the Thematic Network to expand across the Arctic for a more diverse and inclusive representative network that can address emerging issues on plastic pollution?

Funding

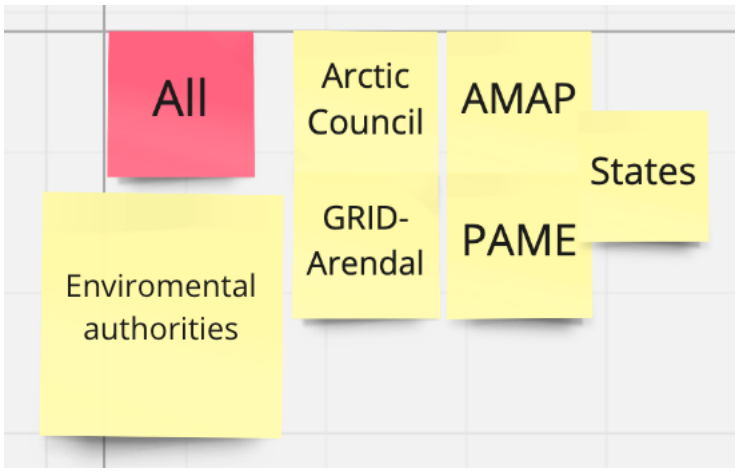


Diversity and inclusive knowledge regimes

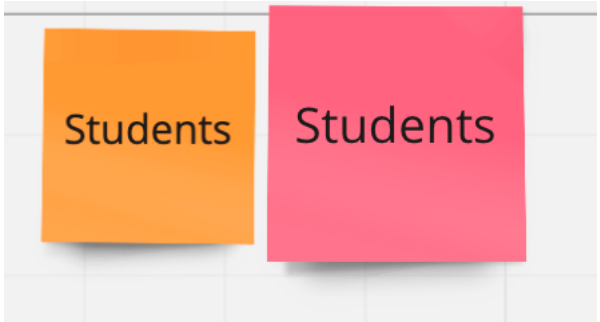
Other

Question 6: Who should and can address the identified gaps?

Actors

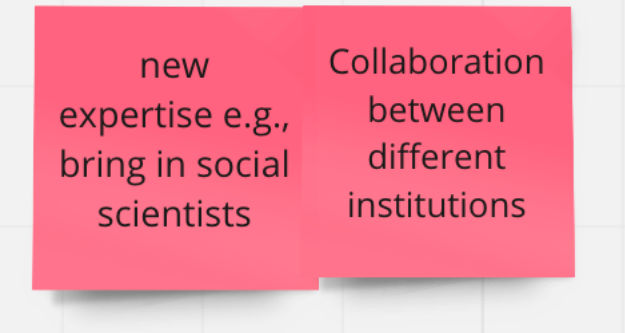


New generation of researchers?



Local and indigenous communities

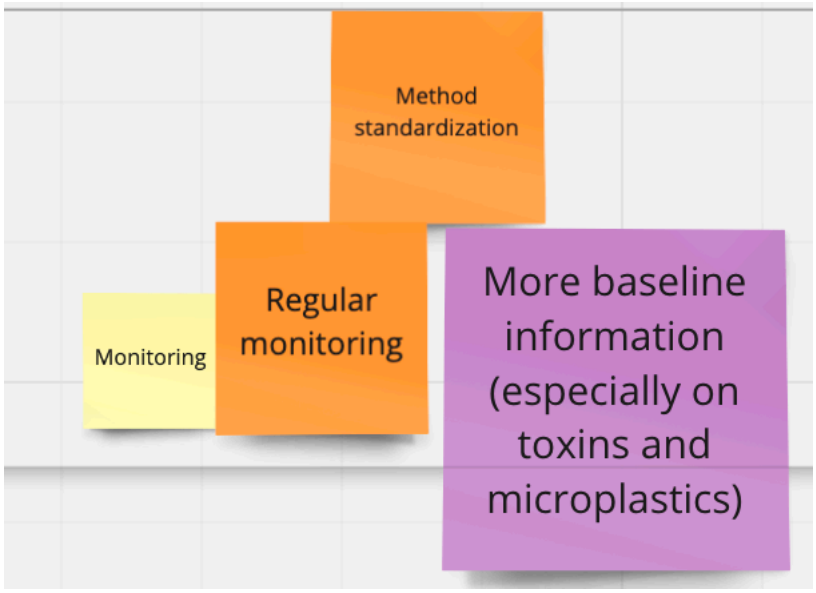
Transdisciplinary work



Industries

Question 7: What is needed to ensure progress? Do we need a more formal mechanism to ensure that the work of the thematic network can be relevant for the working groups?

Monitoring

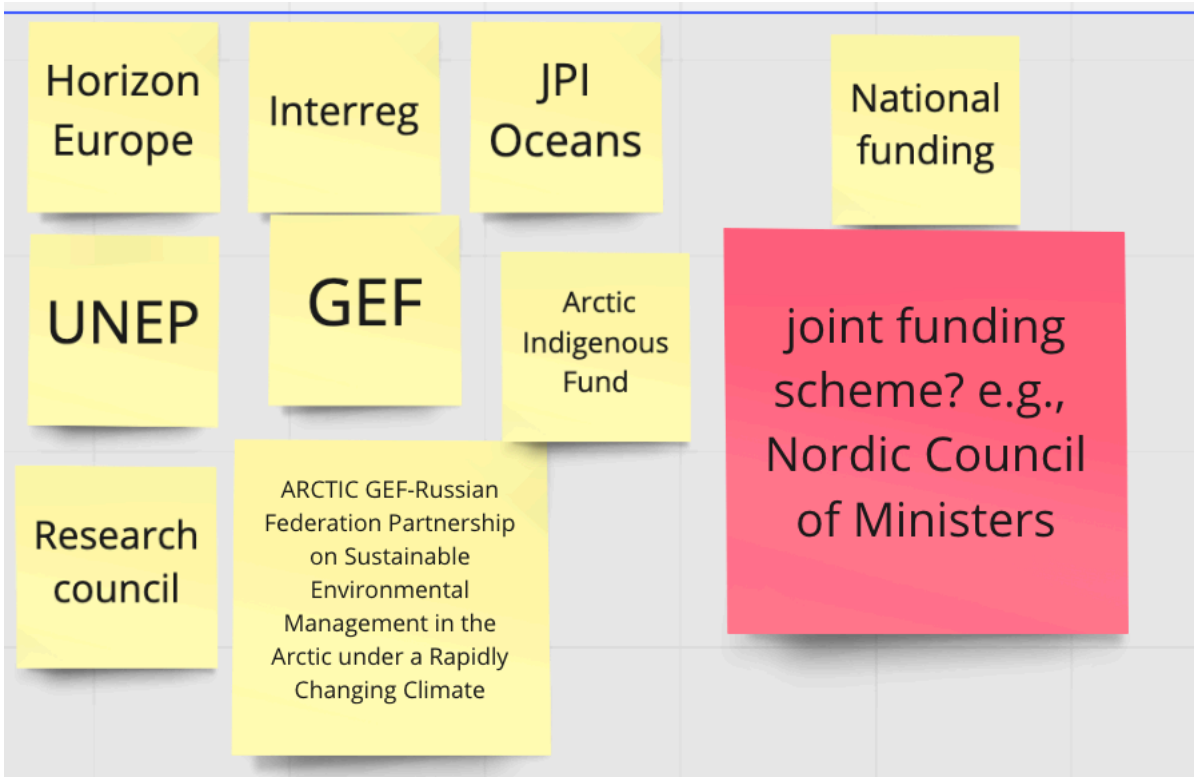


Cooperation and involvement

Other

Question 8: Funding schemes

Funders



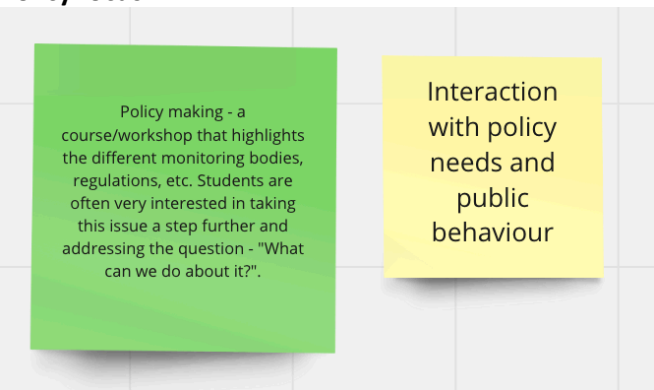
Other

Question 9: What should be the focus areas of the Thematic Network to develop future education on plastics in the Arctic?

Empower student mobility and help student publish

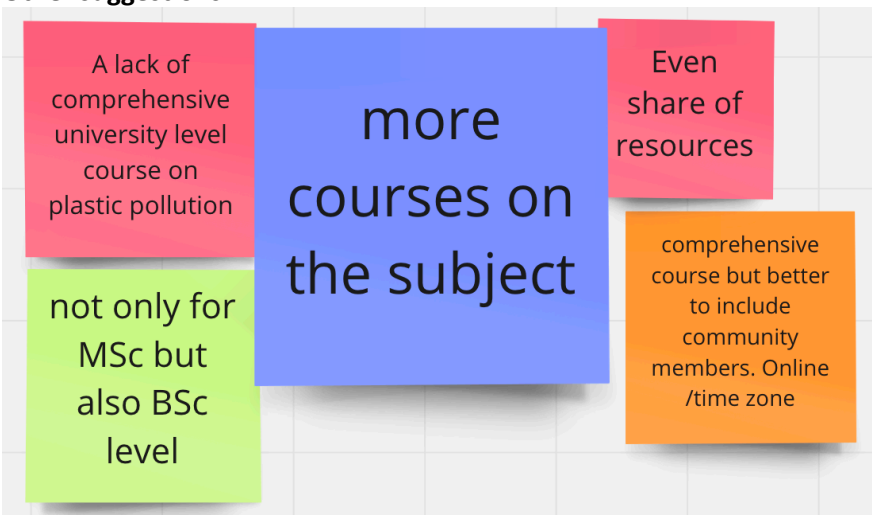
Standardisation and monitoring

Policy focus



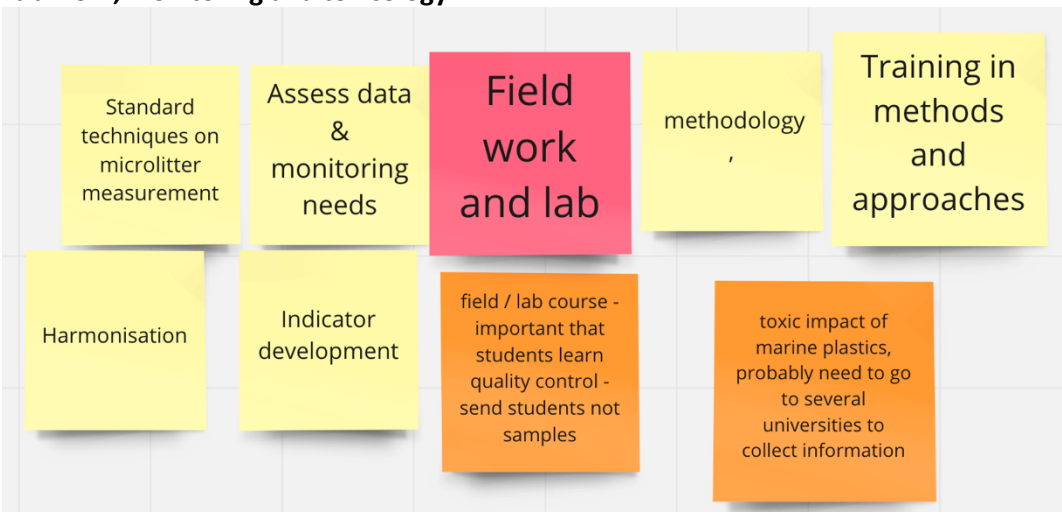
Solutions and cooperation with other sectors

Other suggestions

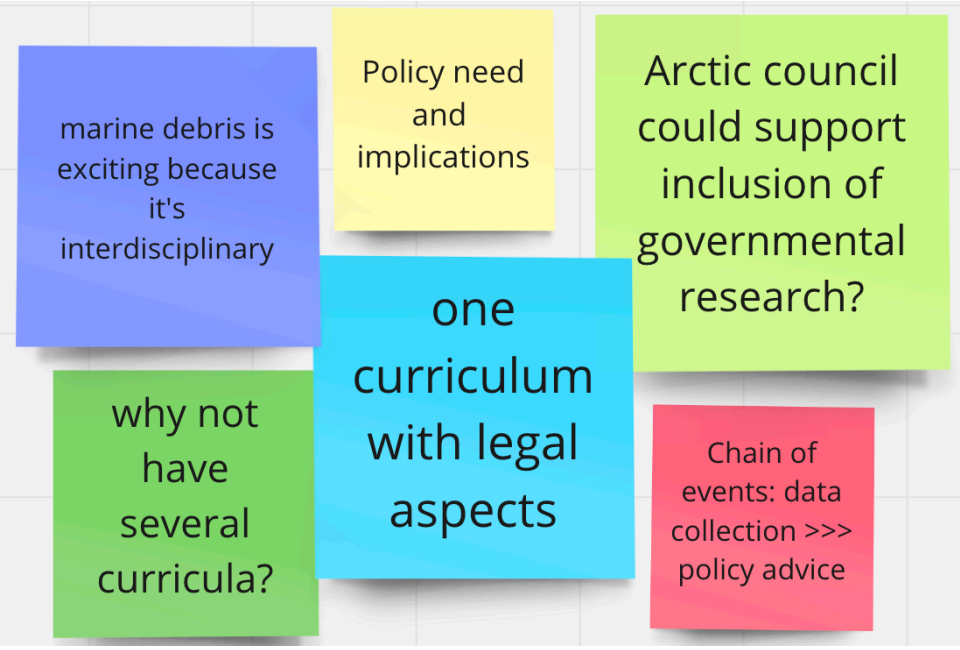


Question 10: What should a curriculum on Arctic plastic pollution entail? What are we missing?

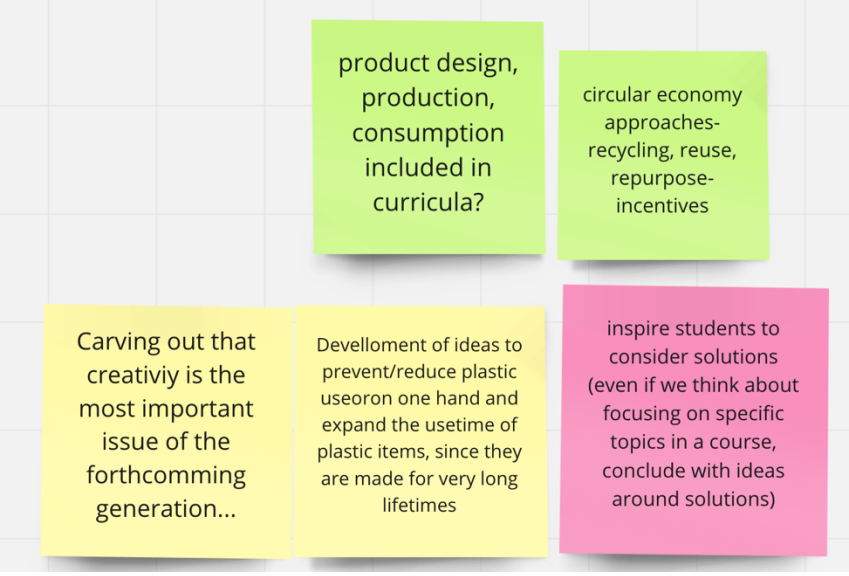
Lab work, monitoring and toxicology



Interdisciplinary approach

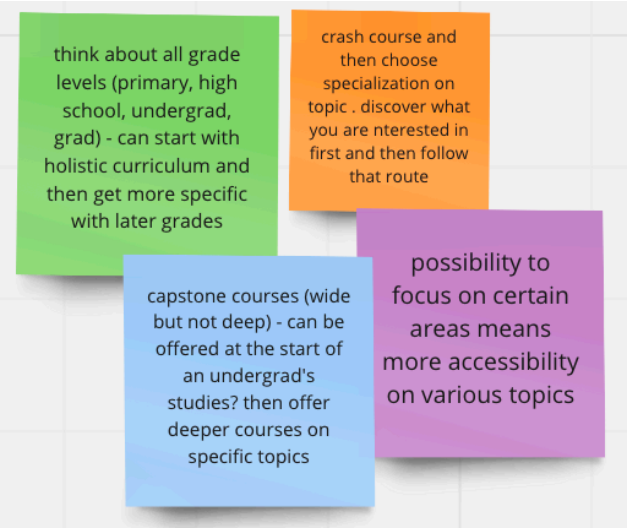


Solution oriented

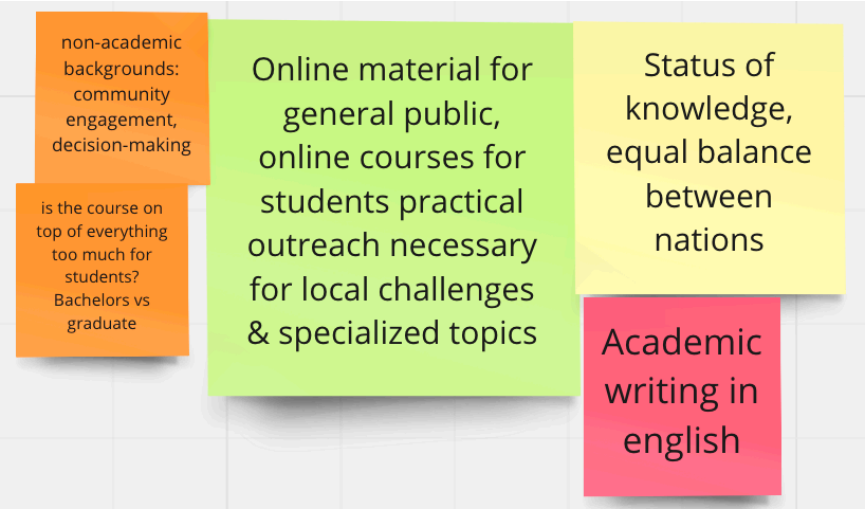


Common workshops and network building

Different levels and specialisations

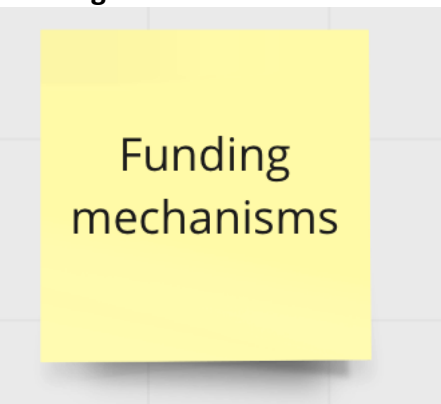


Other suggestions

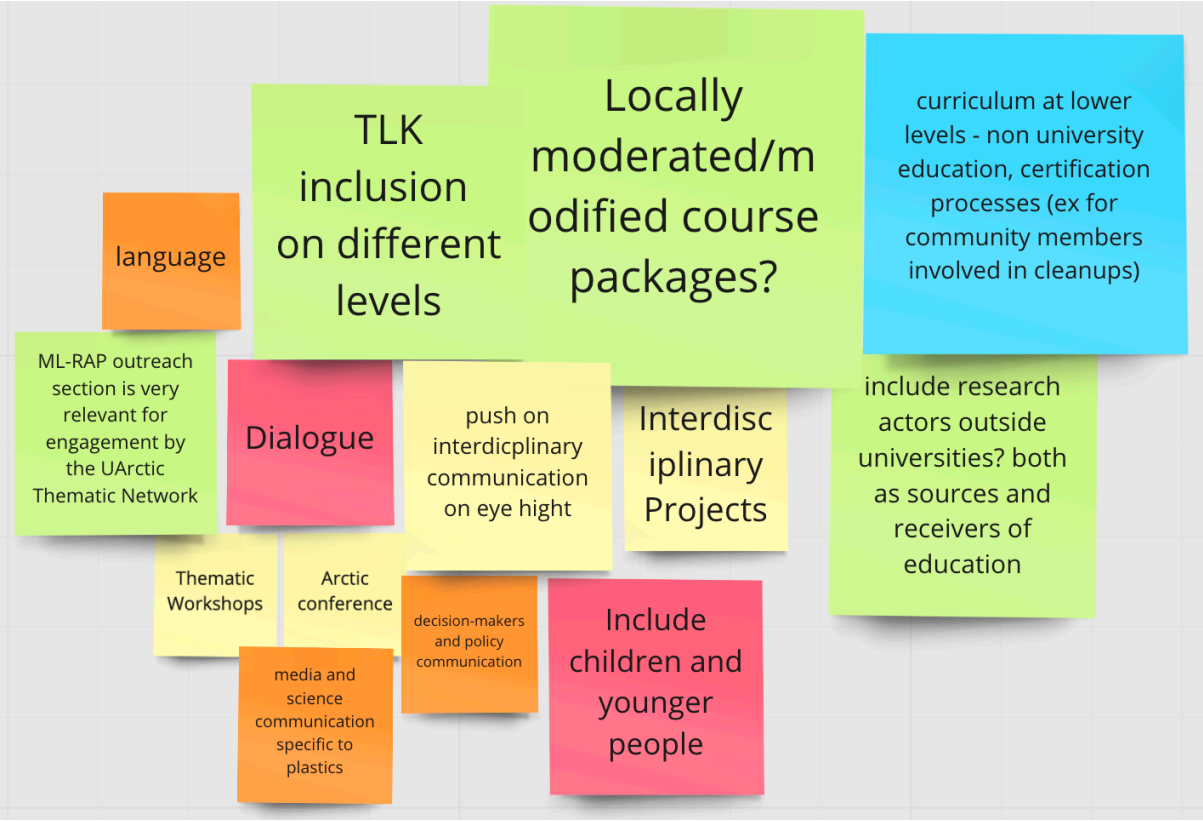


Question 11: What is needed to further develop a transdisciplinary approach on understanding the plastic pollution problem and developing solutions in the Arctic?

Funding

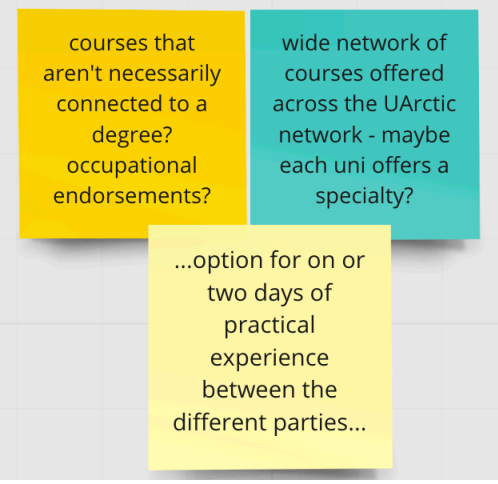


Integration of perspectives, knowledge systems and people outside academia



Attention to chain of events

Network of courses



Question 12: What can be done to make education on plastic pollution more accessible to the students in the Arctic?

Help students get an overview and communications

Network and cooperation through events

Engage various actors

Question 13: Can the engagement of the UArctic Thematic Network on Arctic Plastic Pollution in education benefit the Arctic Councils working groups?