



NORFACE and Belmont Forum research programme Transformations to Sustainability “T2S”

Final evaluation report
Abridged version, for public distribution
June 2023

Table of Contents

1 Introduction	3
1.1 About NORFACE and the Belmont Forum	3
1.2 T2S Objectives	4
1.3 Research projects	4
2 Knowledge exchange and communication and production of knowledge	7
2.1 Knowledge exchange and communication	7
2.2 Production of knowledge	9
2.3 Key project outcomes	11
3 Final evaluation objectives and results	13
3.1 Final evaluation objectives and evaluation panel members	13
3.2 Contributions to science and knowledge about transformations to sustainability	14
3.3. Programme implementation and coordination, including KEC activities	15
3.4 Engagement, dissemination, and Impact	17
4 Recommendations for T2S follow-up activities and future calls	18

Panel members:

Dr Paul Cary, University of Lille

Professor Holly Hapke, University of California, Irvine

Professor Jouni Paavola, University of Leeds

Associate Professor Zarina Patel, University of Cape Town

Professor Flurina Schneider, Institute for Social-Ecological Research and Goethe University Frankfurt

Report authors:

Suvi Kansikas, Academy of Finland

Emily Hancock, Economic and Social Research Council

Sarah Moore, International Science Council

Justina Dahl, Vetenskapsrådet

Katariina Flinck, Academy of Finland

Juhokalle Pekkala, Academy of Finland

The data analysis and the charts are based on T2S project final reports and were produced by Katariina Flinck, MSc, and Juhokalle Pekkala, BA, led by Evaluation Task Lead Suvi Kansikas, at the Academy of Finland.

List of charts:

Chart 1: Project coordinators' and PI's institutions

Chart 2: Project personnel institutions

Chart 3: Project personnel from Global North and Global South

Chart 4: Project personnel roles

Chart 5: Presentations by event type

Chart 6: Non-academic written outputs

Chart 7: Academic publications by type

Chart 8: Research advances

1 Introduction

In January 2017, NORFACE (New Opportunities for Research Funding Agency Cooperation in Europe) and the Belmont Forum launched a joint transnational research programme on Transformations to Sustainability ([T2S](#)), with the participation of the International Social Science Council (which later became the [International Science Council](#)). Twelve projects were selected for funding and began their work in 2018/2019. The European Commission provided top-up funding for the programme via an ERA-NET Cofund grant. The Grant Agreement with the European Commission foresaw a midterm and final evaluation of the programme.

The programme had its mid-term evaluation in 2020 and the final evaluation in 2022. The midterm evaluation aimed to consider progress with respect to the programme objectives and to identify what was working well and should therefore be maintained; and what barriers might have to be overcome. Following consideration of these factors, the mid-term evaluation panel was asked to identify a clear list of recommendations for the programme to take forward. The final evaluation aimed to consider the extent to which the programme has delivered on its objectives and also how well it had responded to the recommendations of the mid-term evaluation. The final evaluation aimed to identify the achievements of the programme as a whole; draw out lessons for future research programming; produce insights for transnational programming relevant to the funding partners; and demonstrate the added value of international as opposed to national funding schemes.

The report provides information on the achievements of the T2S programme and its 12 funded research projects as well as its final evaluation conducted in autumn 2022. Chapter 1 introduces the programme and the funding networks NORFACE and Belmont Forum. Chapter 2 contains data analysis of the final reports that the twelve funded research projects submitted at the end of the programme. Chapter 3 addresses the final evaluation, setting out the procedure used for the final evaluation as well as the results of the final evaluation of the programme. The fourth and final chapter presents the recommendations and follow-up activities offered by the evaluation panel.

1.1 About NORFACE and the Belmont Forum

NORFACE:

New Opportunities for Research Funding Agency Cooperation in Europe ([NORFACE](#)) is a partnership of national research funding agencies in Europe and is dedicated to leading and developing opportunities for scientists in the social and behavioural sciences. NORFACE plays a key role in resolving major societal challenges by promoting research of the highest quality, sharing best practices among research funders, and especially by making international collaboration between social scientists in Europe possible. From challenges brought on by migration and inequality to preparing for the impact of an aging society, researchers in the social sciences in Europe look at the behaviour of individuals and groups and at the dynamics of European institutions and societies to understand and address these societal challenges.

NORFACE is a coordinated common action of national research funding agencies from (currently) 20 European countries and provides a framework and a vision for a durable multinational strategic partnership in research funding and practice, especially within the social sciences in Europe. NORFACE has successfully led two rounds of its Seminar Series, one pilot research programme and six transnational research programmes. The themes addressed by the programmes have included Migration in Europe, Welfare State Futures, Dynamics of Inequality, Democratic Governance, and Social and Cultural Dynamics in the Digital Age. All programmes have received funding from the EU through ERA-NET Co-fund, and based on the EU Commission requirements for the funding, have been evaluated by international evaluation panels.

Belmont Forum:

The [Belmont Forum](#) is a partnership of funding organisations, international science councils, and regional consortia, committed to the advancement of transdisciplinary science. Belmont Forum operations are

guided by the [Belmont Challenge](#), a vision document that encourages “international transdisciplinary research providing knowledge for understanding, mitigating, and adapting to global environmental change.” Forum members and partner organisations work collaboratively to meet this Challenge by issuing international calls for proposals, committing to best practices for open data access, and providing transdisciplinary training. To that end, the Belmont Forum is also working to enhance the broader capacity to conduct transnational environmental change research through its e-Infrastructure and Data Management initiative.

Scientist and stakeholder support is made possible through Collaborative Research Actions (CRAs), which are the Forum equivalent of a call for proposals. Since its establishment, the Belmont Forum successfully led 17 calls for proposals, supporting 99 projects and more than 1000 scientists and stakeholders, and representing over 40 countries from all continents. Themes addressed by CRAs have included Freshwater Security, Coastal Vulnerability, Food Security and Land Use Change, Climate Predictability and Inter-Regional Linkages, Biodiversity and Ecosystem Services, Arctic Observing and Science for Sustainability, and Mountains as Sentinels of Change.

1.2 T2S Objectives

The programme was based on the premise that sustainability research needs to be based on a far better understanding of how societal transformations come about and how – if at all – it can be initiated, fostered, accelerated, and steered towards ends that are at the same time ecologically sound, economically viable, and socially just. The T2S programme contributed to re-structuring the domain of sustainability research by putting the social sciences at the heart of interdisciplinary research on sustainability, making a change in scale and scope for research programming in this area.

The programme was structured around three research themes: 1) Governance of societal transformations to sustainability; 2) Economy and finance of transformations to sustainability; and 3) Well-being, quality of life, identity, and social and cultural values. Conceptual aspects of processes of transformation and methodological innovations are concurrent cross-cutting issues of the programme.

The primary objectives of the programme were:

1. To develop understanding of and promote research on transformations to sustainability which are of significant social, economic, and policy concern throughout the world and of great relevance to both academics and stakeholders.
2. To build capacity, overcome fragmentation, and have a lasting impact on both society and the research landscape by cultivating durable research collaboration across multiple borders, disciplinary boundaries, and with practitioners and societal partners. This includes facilitating the development of new research collaborations with parts of the world which are not often involved in large-scale international research efforts, notably low- and middle-income countries.

With combined funding of €11.5 million, 12 research projects were launched between July and December 2018 and were to run for 36 months. The programme was later granted an extension from the European Commission which allowed projects to be extended by between six and nine months to help manage Covid-19 related delays. The projects were concluded between March and September 2022.

1.3 Research projects

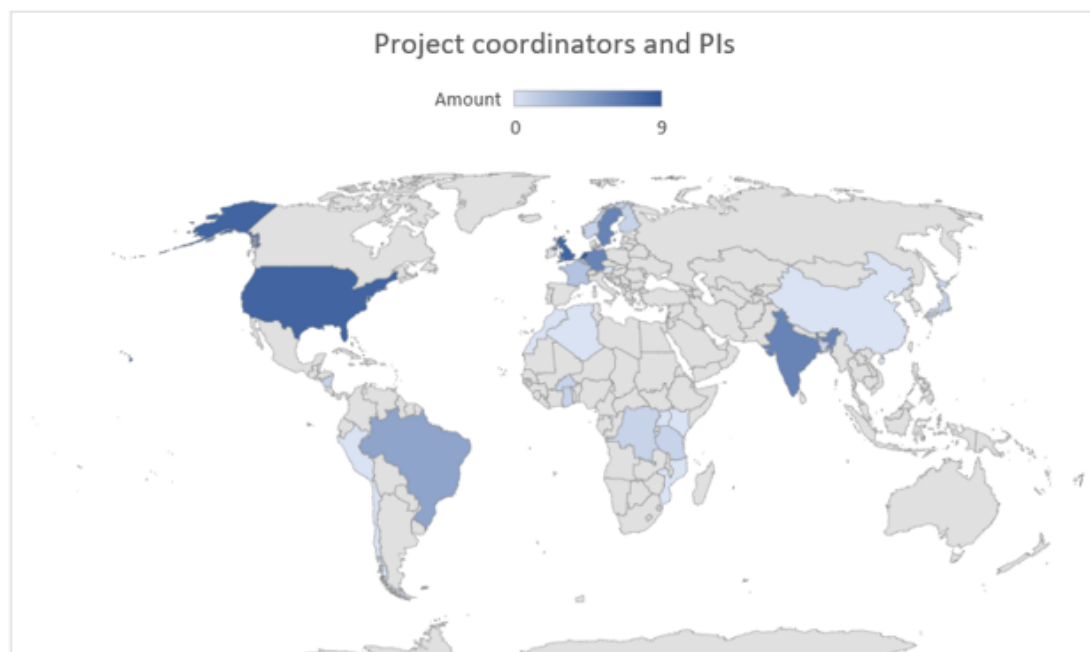
The twelve T2S research projects tackled a wide range of complex challenges from groundwater governance, artisanal and small-scale mining, urban flood risk and land registration to the role of migration and intellectual property rights in sustainability transitions. They conducted theoretically and methodologically innovative research in different locations across the globe facing pressing socio-ecological issues. The teams brought together researchers from a wide variety of countries, from Brazil to Sweden and from India to Burkina Faso, pooling and integrating knowledge and capabilities from around the world.

The ten most commonly reported disciplinary backgrounds for the project personnel were Environmental sciences (114 mentions), Development studies (108), Social and cultural anthropology (96), Human and social geography (72), Biology (68), Sociology (53), Management studies (47), Engineering (39), and Agricultural sciences (32). The number of different disciplines reported by the projects ranged between five and nineteen.

All funded project teams had relevant non-academic partners participating in the co-design, co-production and co-dissemination of research. Civil society and other stakeholders were often deeply implicated in the research, from problem-framing and objective-setting, through to communication and implementation of research findings. The knowledge produced by the research projects was to be of use not only to researchers but also to practitioners and policy makers across a multitude of sectors in their efforts to advance transformative change.

Geographic and gender distribution of project personnel

Several participating funding organisations did not have the capacity to fund researchers from low- and middle-income countries or non-academic researchers or partners. Only the [International Science Council \(ISC\)](#) funding was aimed particularly at researchers based in the Global South, and a small number of other organisations could and did support researchers in third countries. As a consequence of national funding regulations, most of the project coordinators' institutions were in the Global North; one third of them (4) were in the United Kingdom, three in the Netherlands, two in Germany, one in the USA, one in Belgium, and one in India. Thus, only one of the twelve consortiums had its coordination in the Global South. The number of research personnel working in the programme was spread more equally between the Global South and the Global North, with 56% of project personnel in the Global North compared to 44% in the Global South.



Chat 1: Project coordinators' and PI's institutions

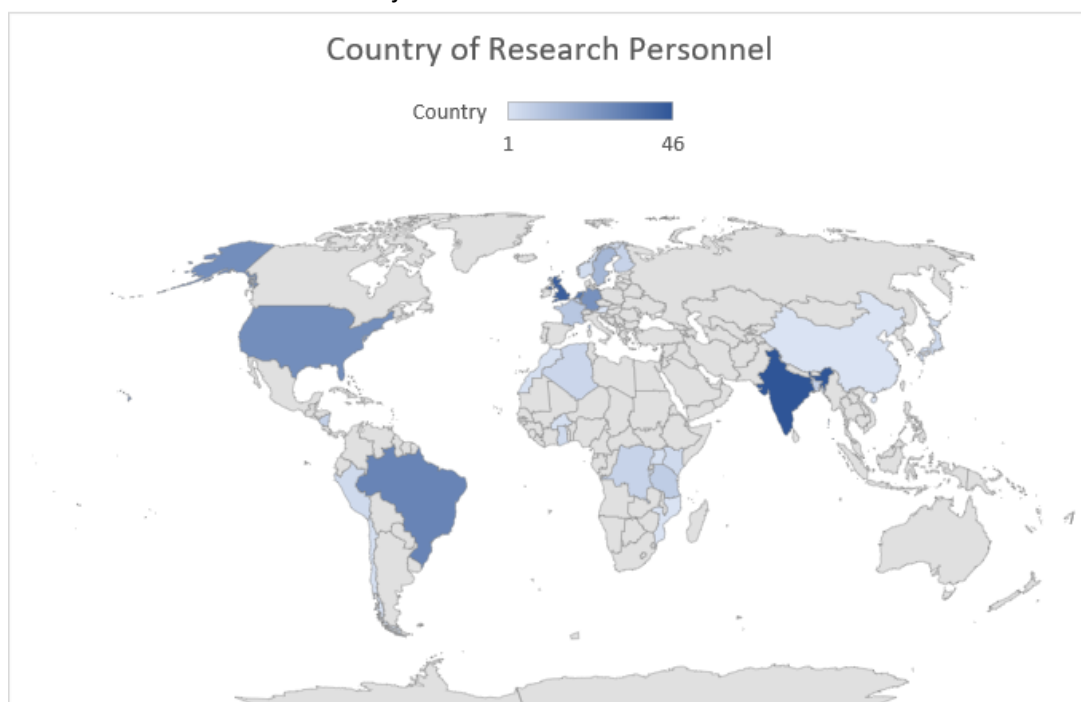


Chart 2: Project personnel institutions

Altogether, 304 persons were reported to have worked in different roles in the projects. The roles ranged from Project leaders (12) and PIs (49) to team members (124) and postdocs (22), and undergraduate (4) and graduate (33) students and collaborators (60). The gender balance between the personnel, whose gender was reported was 45% females and 54% males. For 40 persons, gender was not reported.

The highest number of project personnel per country was India, with 46 persons working in five different projects. The United Kingdom was a close second, with 43 persons working in eight of the projects, and the Netherlands with 36 researchers working in eight of the projects. The majority of research personnel in the Global South were in India. Researchers in Latin America worked in six different projects, with most researchers in Brazil (31), then Chile (2), Nicaragua (7) and Peru (4).

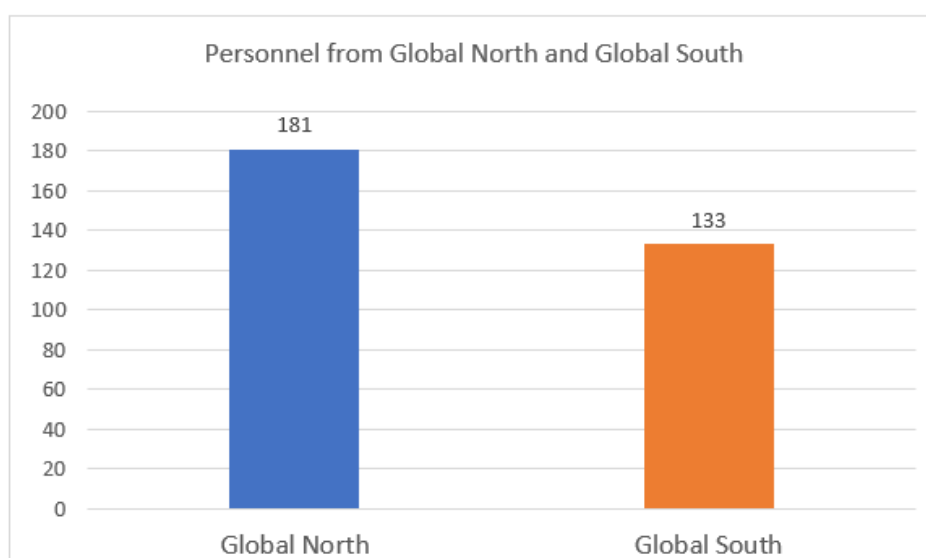


Chart 3: Project personnel from Global North and Global South

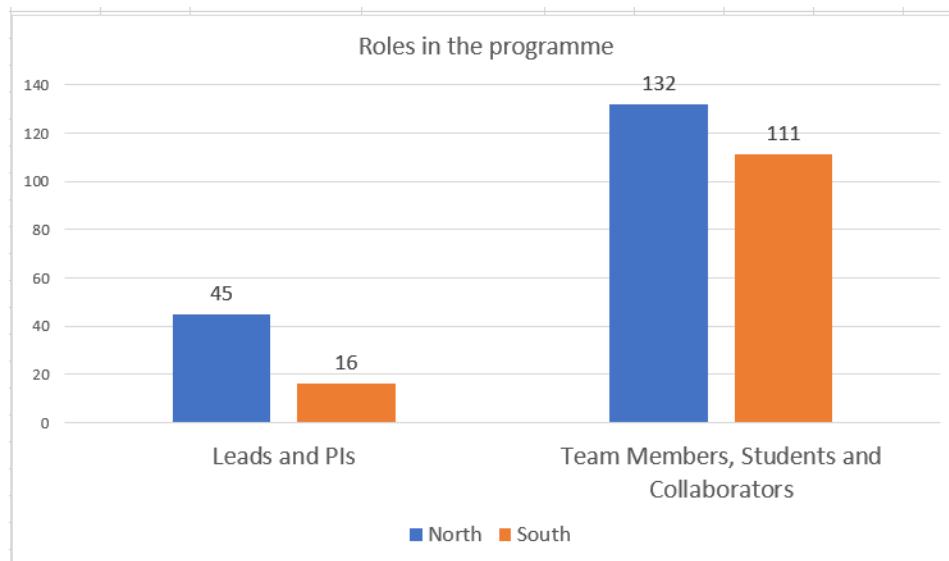


Chart 4: Project personnel roles

Besides research personnel, students were also involved in many of the T2S projects. The T2GS project had the highest number of graduate (45) and undergraduate students (63). The range of graduate and undergraduate students in the other projects ranged between 2-16 and between 0-9, respectively. The high number of primary and secondary school students participating in the programme stems from four projects, T2GS, TAPESTRY, TRUEPATH and Waterproofing Data, which together engaged 550 school children for various parts of their activities. Here again, T2GS was the outlier with a total of 265 students.

2 Knowledge exchange and communication and production of knowledge

2.1 Knowledge exchange and communication

T2S knowledge exchange and communication (KEC) activities were oriented towards facilitating and supporting collaboration among T2S research projects; helping to build a global research community focusing on social transformations to sustainability; establishing an open resource base, stimulating learning, and supporting knowledge exchange among academic and practitioner communities, and towards developing strategic communication with target audiences. Underlying principles among these objectives were considerations of regional and gender diversity and minimising the carbon footprint of KEC activities. Cross-project collaboration and bottom-up activities led by involved researchers were at the core of realising the knowledge exchange and communication objectives. The focus of this work shifted during the pandemic to help the projects cope with the obstacles brought on by Covid-19 as well as to help them create and take advantage of new learning opportunities.

The ISC was in charge of organising and/or funding the majority of programme related meetings. Reflection workshops and cross-project meetings took place between major events and feedback was gathered to understand and support the needs of the projects better. Many events and activities were organised online after the Covid-19 pandemic began. Key KEC activities conducted for the T2S programme include the following:

- [Kick-off Meeting in Fukuoka in 2018](#)
- [Transformations Conference 2019](#) and its [preconference Transformation Laboratories as spaces for co-designing socio-ecological transformation](#)
- [Midterm Programme Meeting 2020 'The politics of transformative research'](#)
- [Sustainability Research and Innovation Congress in July 2022 in South Africa](#)

- [Final Meeting held in Paris, France, in November 2022.](#)

T2S outreach activities were for instance news and blogs from the projects that were posted on [T2S website](#). Other social media channels were used using the hashtag #Transform2Sustain. Altogether 75 blog posts produced by the projects have been shared on the programme website, including 24 original pieces. In September 2022, the ISC team published of a [set of short films](#) based on a selection of the projects as well as a longer conceptual film on transformations to sustainability. The same website hosts also Impact stories from each of the 12 projects. Furthermore, the ISC has organised multiple podcasts, webinars, and roundtable discussions throughout the programme, both in self-produced and external channels.

Presentations and non-academic written outputs

A vast majority of T2S projects reported giving numerous presentations at academic conferences, with an average of 24, and the most conference presentations held by TAPESTRY and Gold Matters at 52 each. Presentations that were given outside of conferences were the second most important means of communicating research results. These included, among others, invited presentations and talks at universities as well as public lectures intended for a general audience. Presentations were also given at symposiums and workshops.

The T2S projects used a wide variety of new media such as webinars in their dissemination efforts. A significant number of media (film/TV/video) outputs were produced (42) with all but three projects reporting these. Some of these were produced by the projects as part of their research work or stakeholder engagement activities while other media appearances resulted from the project personnel giving expert statements to institutions such as EU Home Affairs Sub-Committee, media such as CNN World, the Economist or The Quint, and various podcasts including EXALT, Ciudad Hub, and Climate-Resilient Cities. Perhaps this speaks to the effect of the Covid-19 pandemic as well as the fact that the programme’s stated goal was stakeholder engagement and visual media is an effective way to increase research impact.

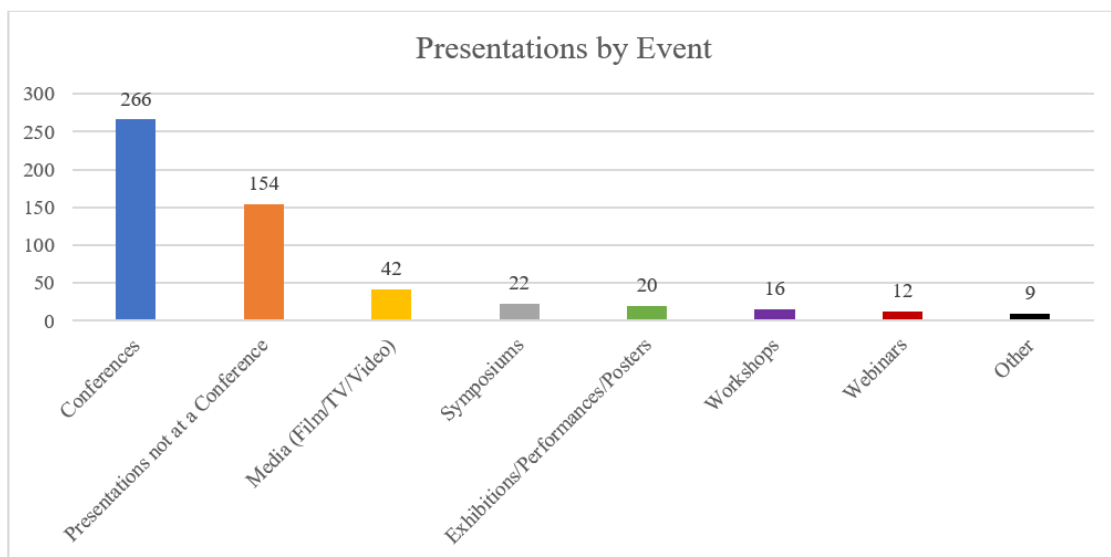


Chart 5: Presentations by event type

Written non-academic outputs totalled 266 with internet publications such as blog posts, opinion pieces, newsletters etc. taking a clear lead. Newspaper articles were another favoured form of stakeholder engagement, especially for the TAPESTRY project which reported altogether 46 of them. Other important forms of engaging and impacting particularly policymakers, government agencies, NGOs, and businesses included technical reports, working papers, and guidelines and policy recommendations. Other written work included a glossary, protocols, commissioned reports, or figures. Among the outlets for these non-academic written outputs were the webpages of the projects, the funders, and institutions of the project personnel. Furthermore, the projects disseminated their results to larger audiences though various NGOs (e.g.

Progressive International, Open Democracy, The International Centre for Climate Change and Development, International Organization for Migration) and media channels (e.g. Deccan Herald, Bangalore Mirror, Dhaka Tribune, The Guardian, or The Conversation).

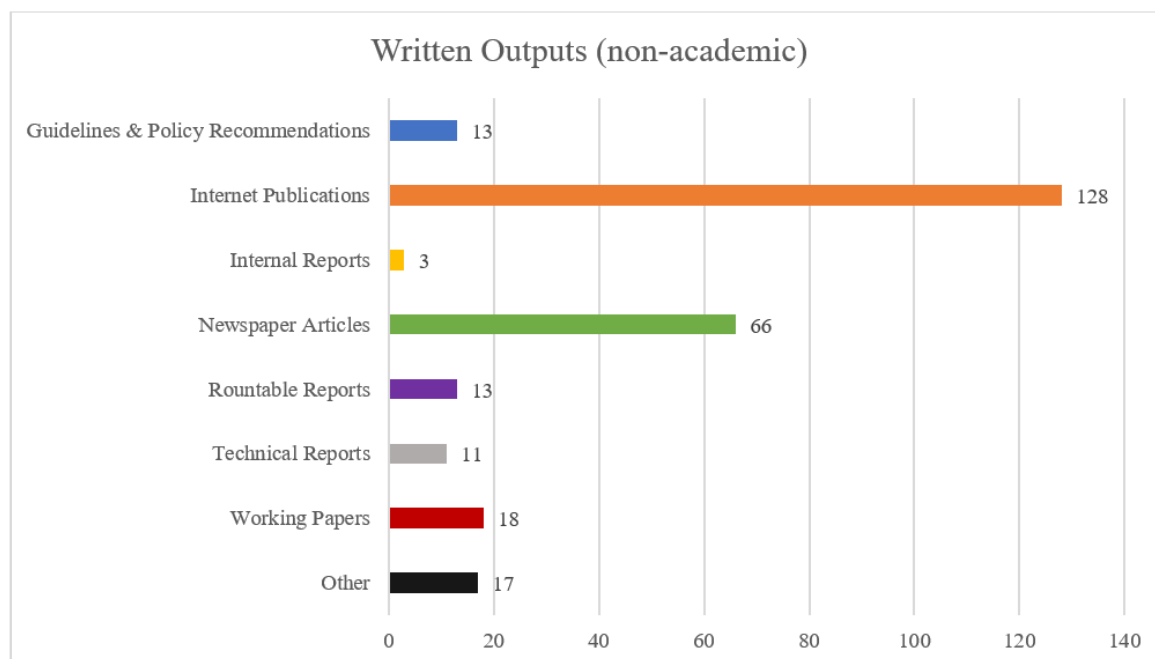


Chart 6: Non-academic written outputs

2.2 Production of knowledge

All projects produced a significant number of scientific publications in relevant journals in the field as well as books and book chapters. Journal articles were by far the most frequent type of academic publication with each project producing an average of 13,5 and a grand total of 161 articles published by the projects throughout the programme. All but three projects published journal articles in the double digits, with a notable outlier of an impressive 27 articles published by T2GS. The T2S programme produced 56 book chapters, with an average publication rate of five per project, with a notable exception of 19 chapters published by Gold Matters. Authored books and edited books were published by four projects, three projects reported articles in edited journal special issues, with one special issue edited by a project published and another forthcoming next year, and two projects mentioned scholarly edition publications. Three project members coordinated the publication of a special issue in [Current Opinion in Environmental Sustainability](#), which included contributions from eleven T2S projects, all available open access. In total, 235 academic publications were reported. Additionally, the ISC contributed a chapter on '[Advancing transdisciplinary research in the Global South](#)' to the [Handbook of Transdisciplinarity: Global Perspectives](#) from Elgar edited by Roderick Lawrence (2023), based largely on learning from the implementation of the T2S programme.

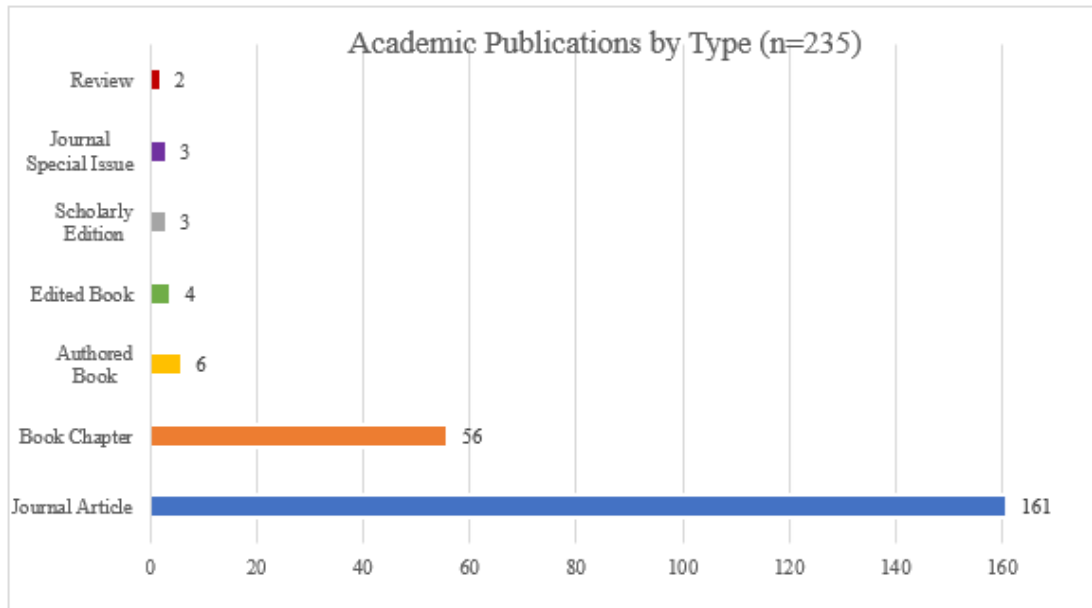


Chart 7: Academic publications by type

The T2S projects reported 23 different kinds of research innovations. These were categorised as methodologies, frameworks, datasets, models, and software. As such, they represent a major output from the programme as a whole, as all the projects reported at least two major research advances from their work. These range from new methodologies for large carnivore reintroduction habitat mapping combining geographical, historical and taxonomic data to a method for co-producing future pathways in periurban communities in cooperation with various stakeholders. These initiatives were also used in practice and tried on the ground level during the project.

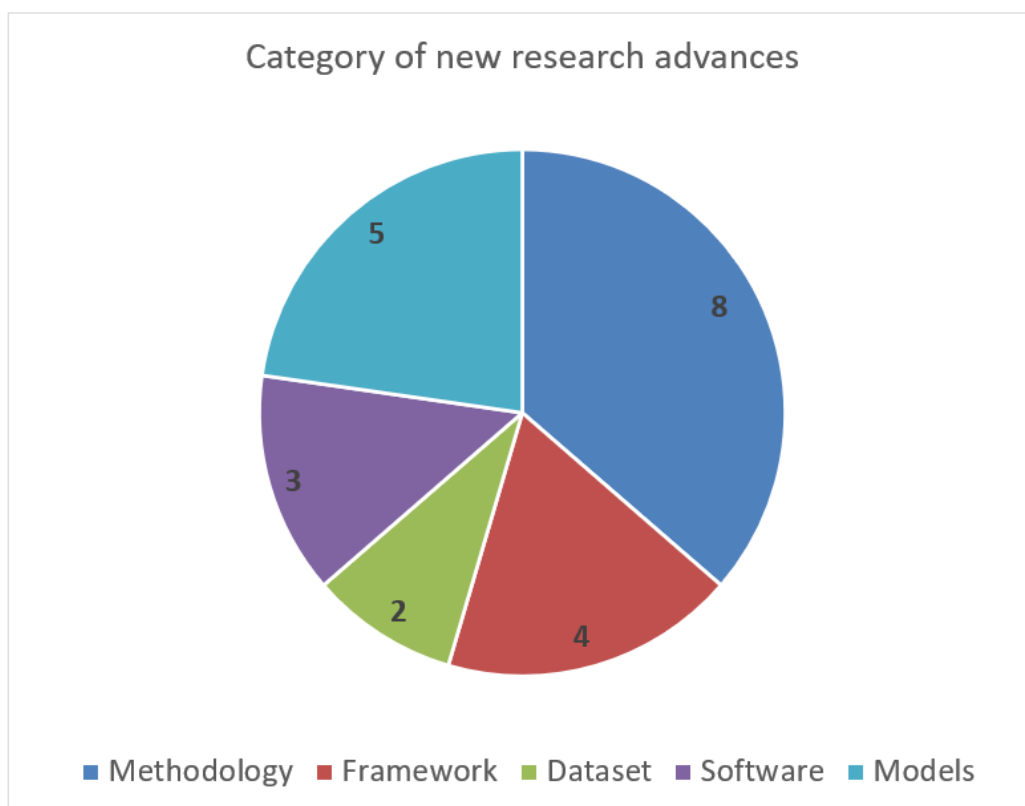


Chart 8: Research advances

All projects produced significant new knowledge of their respective fields of sciences. Besides the scientific contributions, the projects created impact on many other sectors of society and policymaking. Altogether T2S projects reported 97 outcomes, in the following 9 categories:

- Advancement of project sciences,
- Advancement of other knowledge,
- cultural effect,
- economic effect,
- policy effect,
- societal effect, and
- models and research methods.

2.3 Key project outcomes

Advancement of project sciences and other knowledge

AGENTS [AGENTS: Amazon Governance to Enable Transformation to Sustainability Project: Indiana University Bloomington](#)

The AGENTS project's contribution was to map and represent local initiatives in the Amazon, mostly in Brazil, with a few in Peru and Bolivia. It created a unique quantitative geospatial dataset, which described around 200 types of initiatives in over 900 locations and over 140 municipalities, including physical, biological, economic, and social data. The project identified a unique potential transnational outcome beyond its main discipline: the development of new techniques in satellite image analysis to capture complex small-scale production systems which would allow to scale up the mapping and contributions of agroforestry in the Amazon and other regions.

SecTenSusPeace [SecTenSusPeace: SECURING TENURE, SUSTAINABLE PEACE?](#)

The **SecTenSusPeace** project made a contribution in the scientific evidence base regarding land tenure securitisation, including a better understanding of stakeholder needs. The research highlighted the unexpected outcomes of land tenure registration in conflict affected settings, including elite capture and politicisation of interventions; but also fears and suspicions surrounding the interventions. The research increased awareness among policy makers and development practitioners of dynamics of land registration in conflict-affected settings.

TAPESTRY [TAPESTRY: Transformation as Praxis](#)

The **TAPESTRY** project fostered community-led and bottom-up transboundary engagements across research, policy and practice. They reported ingenious ways of engaging with stakeholders such as an ideation workshop, an interactive booth at a Seafood Festival, a Net filters initiative, a digital exhibition of archival photos, and a Photovoice exhibition, which helped initiate a dialogue with the local authorities. Crucially, it also helped in amplifying the voices of the marginalised communities. Transboundary discussions bridged India and Bangladesh in sharing knowledge and know-how on more sustainable practices on issues such as rainwater harvesting and fish farming.

Policy effects

CON-VIVA [Convivial Conservation – From Protection to Connection](#)

The CON-VIVA project created policy impact on the national and transnational level. The concept of Convivial Conservation as well as ideas produced by the project were picked up by the Swedish International Development Cooperation Agency (SIDA) to use as part of the Swedish strategy for regional development cooperation in Sub-Saharan Africa. SIDA also advocated for a convivial conservation approach at the Convention on Biological Diversity in October 2021. A project member was engaged as a specialist at an EU

dialogue event, and their input on the EU's Biodiversa funding stream was used for informing EU funding priorities as well as EU policy-maker perspectives.

Gold Matters [Gold Matters: Sustainability Transformations in Artisanal and Small-scale Gold Mining](#)

The Gold Matters project has produced policy effect by providing coaching for national representatives (e.g., ambassadors) and set up policy dialogues with representatives of governments and ministries in African countries, officials in international organisations including the United Nations Environment Programme, ECA, the World Bank and the African Development Bank. It has furthermore engaged in capacity building through its educational material and provided advice on health and security as well as environment related issues at subnational, national, and transnational level.

GoST [GoST: Governance of Sociotechnical Transformations](#)

Two PIs of the GoST project were appointed as lead experts of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) assessment of transformative change. This gives them a unique means to link T2S and policy advice, as IPBES aims at targeting a broad range of actors across sectors and scales. Furthermore, project PI Sheila Jasanoff, from Harvard University, received the Holberg Prize – considered the Nobel prize for social sciences and the humanities – for her outstanding achievements in the field of science studies, bringing new visibility to the project and programme.

MISTY [MISTY: Migration, Transformation and Sustainability](#)

The results of the Misty project have been communicated widely through academic publications, interactions with UN processes such as the Global Compact on Migration and the Framework Convention on Climate Change, as well as with policy stakeholders in multiple countries. The project was instrumental in the process which led to, in 2021, the Government of Bangladesh adopting a ground-breaking proactive and comprehensive displacement management strategy, that sets out a realistic rights-based framework for internally displaced people.

T2GS [T2GS: Transformations to Groundwater Sustainability](#)

The T2GS project showcased policy effects on a national and subnational level. Knowledge on groundwater governance in Tanzania gained through the project fed into a review of the national water policy, commissioned by the Tanzanian government and executed by T2GS team member. This led to specific recommendations for adapting the Tanzanian National Water Policy in the field of groundwater. Findings related to the case of Randullabad village, India, were shared with the governing council of Randullabad that strengthened the existing groundwater management protocols under the village's Participatory Groundwater Management program.

Tools and methods

H2O -T2S [H2O – T2S in Urban Fringe Areas](#)

The H2O–T2S project created a methodological innovation contributing particularly to institutional economics and urban geography. The COVID-19 pandemic acted as an accelerator to modify its methods and tools, resulting in a novel application of the Adaptive Pathways method for periurban contexts. Through a creative process of close collaboration between project partners, two stages of the method have been completed in three cities in India, Pune, Kolkata and Hyderabad. It has supported stakeholders to visualise future scenarios and ways to think of pathways towards these ideal futures. Sharing of research results was done through short videos made from visualisations and other graphic tools to present findings translated to the local language of the respective project village.

IPACST [IPACST: Intellectual Property in Sustainability Transitions](#)

The IPACST project created an open access Business Toolkit, which businesses can use to reflect on how they use their IP assets and give tools to use those assets to increase their sustainability impact rather than just concentrate on protecting their competitive advantage. The project also engaged a wide range of policy

makers to broaden the basis for developing, designing and evaluating IPR-related policy support instruments. Furthermore, they engaged patent offices, such as EPO, UKIPO, USPTO, EUIPO, and the European Patent Office, to stimulate more progressive thinking about what patent offices should be doing to better support sustainability transitions.

TRUEPATH [TRUEPATH: Transforming unsustainable pathways in agricultural frontiers](#)

The **TRUEPATH project** used so called 'Diplomados', or 'Territorial Development Participatory Courses', which included participatory training modules for local actors, engaging altogether 30 participants from 19 different communities, and 12 different organisations and NGOs. In a co-creating training, the participants produced knowledge on development pathways and reflected on issues such as development, territory, power relations, livelihood strategies and value chains. The project helped one of its partners, Financiera Fondo de Desarrollo Local (FDL) - Nitlapan, considered internationally as one of the 'champions' of Green Microfinance, to compete in the 2019 European Microfinance Award, helping the team reach the competition finals.

Waterproofing Data [Waterproofing Data: Engaging stakeholders in sustainable flood risk governance for urban resilience](#)

The **Waterproofing Data project** created a citizen-science mobile app and a Guide for School Teachers for both community members and disaster risk management professionals to support flood resilience and prevention activities as well as to provide educational tools. The application collects data on rainfalls and flood risks from citizens, providing knowledge to communities and regions that otherwise would have scarce access to this type of information. The approach has empowered local users, among them school students, thus helping to democratise knowledge production. The Brazilian National Centre for Disaster Monitoring and Early Warning (CEMADEN) has adopted and institutionalised the application. Furthermore, the State Secretariat of the Environment in the state of Acre has confirmed that it will use the maps produced to support disaster response planning in future.

3 Final evaluation objectives and results

3.1 Final evaluation objectives and evaluation panel members

The T2S programme had its final evaluation in autumn 2022. The final evaluation aimed to consider the extent to which the programme had delivered on its objectives. The evaluation also aimed to identify the achievements of the programme as a whole; draw out lessons for future research programming; produce insights for transnational programming relevant to the funding partners; and demonstrate the added value of international as opposed to national funding schemes. The final evaluation considered all dimensions of the programme, as formulated in the objectives of the programme. The evaluation also considered two issues that were particularly important to the T2S funding consortium, namely gender and regional diversity. The evaluation results are based on written feedback from the final evaluation panel members. Chapter 4 of this report is a synthesis of these contributions composed by AKA and ESRC.

Panel members comprised:

- [Paul Cary – University of Lille](#)
- [Holly Hapke – University of California, Irvine](#)
- [Jouni Paavola – University of Leeds](#)
- [Zarina Patel - University of Cape Town](#)
- [Flurina Schneider – Institute for Social-Ecological Research and Goethe University Frankfurt](#)

3.2 Contributions to science and knowledge about transformations to sustainability

The panel was asked to consider how (and whether) the programme had enhanced understanding of transformations to sustainability and how it had promoted such research.

The panel considered that the programme had produced high-quality scientific outcomes, and that this was largely due to the formative position given to the social sciences and humanities in the call. The transdisciplinary nature of the programme allowed for new avenues of research in the field of transformations in sustainability and therefore led to deepened understandings both locally and globally. The empirical data of the projects also evidences the new research questions that transdisciplinarity allows. Interviews conducted by the panel demonstrated that the projects had engaged deeply and meaningfully with the concept of transformations and made great advancements in its theoretical and conceptual debates.

For the panel, the programme also showed the apparent evolution of research in the field of transformations to sustainability. It noted the focus shifting from socio-technical innovations and the sustainability of ecosystems in the 1980s, to the deepening understanding of the societal influences on transformations to sustainability, and controversies inherent in the field. This evolution has gone hand-in-hand with a shift in the power balance between favoured research approaches, from an overemphasis on the natural and technical sciences to a more transdisciplinary focus to include the social sciences and humanities and beyond. Being part of this change was noted to be a success of the T2S programme.

Considering that one major aim for NORFACE and the Belmont Forum was to demonstrate the importance of giving leadership roles to social sciences in sustainability projects, the programme has been a major success. This is evidenced not only by the numerous outputs, methods, and models produced by the projects but in the number of research proposals received at the initial call for projects, which shows the needs and interests of the research community for such a shift in focus. Today, the panel suggests that the T2S is well-known within academic circles and the scientific community at large, which speaks to the success of the programme in terms of dissemination and crossing disciplinary borders.

Another important achievement of the programme in this regard, according to the panel, was the large variety of relevant issues the projects engaged with – ranging from migration to intellectual property rights to governance and data, for example. The projects noted that this allowed for deeper engagement with the concept of transformations and led to new innovative ways to examine the concept both theoretically and in practice and on different scales. As such, the panel agreed that overall, “the programme generated new catalytic and analytic knowledge outcomes, understandings, and meanings that contribute to understanding of transformations to sustainability.” The panel was especially impressed with the transdisciplinary and non-scientific outputs (e.g., video).

The challenges endured during the Covid-19 pandemic showed the projects’ resilience and adaptability to unforeseen circumstances. While not all initial project goals could be achieved as planned, some projects succeeded in taking the experiences of the crisis as a learning opportunity to think differently about transformations (in time of major disruption). For example, it became clear that projects with strong local partners with extensive networks managed to implement project activities also during times when international travel was not possible. The programme helped to mitigate challenges created by the Covid-19 pandemic by providing no-cost extensions and running inter-project workshops. Other challenges the panel took note of involved typical research limitations such as unexpected costs and underestimation of timeframes.

Capacity building and durable collaboration

The panel was also asked to evaluate the role of the programme in capacity building and in cultivating durable research collaboration across multiple borders (including across low- and high-income countries), disciplinary boundaries, and with practitioners and societal partners.

The panel noted the inter- and transdisciplinary collaborations as the most important capacity-building mechanism of the programme. The projects involved stakeholders and placed emphasis on such collaborations in both the designing and implementation of research. The project representatives interviewed by the panel highlighted “the uniqueness of the programme in supporting these kinds of collaborations as a key factor attracting them and enabling them to take their plans forward.” Although it is too early to state with certainty whether collaborations and created networks are durable, there is some evidence pointing to it, the panel noted. However, the panel also recognised the limited impact the programme had in terms of fostering academic leadership of international research from the Global South. By favouring already established researchers from predominantly the Global North and not adequately supporting PhD students, the panel felt this aspect to be lacking.

Indeed, the panel strongly expressed that whilst the programme and projects emphasised North–South collaboration, the extent to which lasting research networks and international perspectives contributing to new concepts, methodologies, or insights were created, remained unclear. Because most project leads were from the Global North and research was mostly conducted in the Global South, the panel noted “it is unclear how this dynamic is being critically engaged within projects in ways that shift traditional extractive research practices from the North on the South.” It was furthermore pointed out that the reporting framework did not make visible how intra-project processes of balancing the North-South dynamics were tackled. The reporting mechanism as a whole was noted to not properly give evidence on how the inter- and transdisciplinary engagements on the project or programme level succeeded. The panel concluded that the very existence of a programme on transformations to sustainability, which placed North–South collaboration at its heart, and which involved a number of countries from the Global South and Global North, speaks to the significance and success of global collaborations.

The panel similarly held consensus that the overall impact on fostering early career researchers was rather limited. Many projects produced bachelors’ and masters’ theses, which is not insignificant, but only one PhD thesis was funded through the programme, since some funders have restrictions around funding doctoral research through such programmes. It was suggested that the project duration of only three years might not allow for doctoral research. The panel made note that this incurred “a particular loss to the low-income country partners for whom research capacity is a tangible issue.” Numerous postdocs were employed, however. Still, involving undergraduate and graduate students is an important result as it “underlines the fact that the research teams interact directly with the training courses in the universities concerned.” Thus, the projects could raise awareness of the issues and more easily disseminate results within their universities.

Covid-19 was mentioned to have severely limited face-to-face interactions. The panel indicated that projects were thus limited in their ability to build capacity. Nonetheless, the projects were able to make the situation into a learning opportunity and fostered inter-project learning via e.g., newsletters and virtual workshops.

Other noteworthy observations the panel made in this section were that many project researchers had acquired new opportunities to further their research after this programme and that exchanges between projects were viewed extremely positively. One last observation is that the sheer number of both scholarly and non-scholarly outputs produced by the projects “speaks to knowledge exchange with the wider community of sustainability researchers.”

3.3. Programme implementation and coordination, including knowledge exchange and communication activities

Compared to national programmes, the panel considered that running T2S as a transnational programme provided considerable added value. This is because the environmental challenges facing the world are transnational problems, meaning progress towards understanding and addressing them cannot be accomplished by national programmes alone. Transnational programmes are “critical to foster international understandings of the complexity and multiplicity of approaches required to address global sustainability transformations”. In the case of T2S, bringing together NORFACE and Belmont Forum broadened the range and number of potential partners for such international collaboration, and this was further expanded by the

participation of ISC which could fund low- and lower-middle-income countries, which is critical for deep knowledge generation, equity and legitimacy. In T2S “engaging with diverse localities is required to foster sustainability transformations.” The panel further noted that funding projects through a transnational programme contributed to “significant decompartmentalisation” between teams, by allowing simultaneous funding in several countries and not simply the movement of teams to foreign sites.

The panel considered that the programme has manifested both strengths and weaknesses in its planning, coordination, and implementation. The complexity of the programme structure, which included 13 funding agencies representing 12 countries, operating in two international networks, the International Science Council with funding from the Swedish International Development Cooperation Agency (Sida) and the European Commission, meant that the programme had at its disposal a considerable pool of expertise and experience to draw from. On the other side, since all partners came into the programme with their own policies and rules that had to be accommodated, this led in some areas to limited or no flexibility. The panel noted that despite the funding organisations’ different rules and practices complicating programme collaboration, the programme was able to adapt to the challenges and collaboration was successful.

Two issues with rigidity were identified. The first was the reporting system, which was considered not to be very user-friendly. Reporting requirements were considered laborious and unnecessarily demanding for the project leaders. The panel also considered that the logframe matrix developed for the programme was not a useful guide for the projects and could thus not realise its full potential. A simplified version of a reporting frame was therefore suggested.

The second regarded constraints in terms of extensions and alternative uses of funds. A particular case in point is Covid-19: the pandemic necessitated modifications in research plans, while the projects would have gained from even greater flexibility. Nevertheless, the panel concluded that the programme managed to adapt and support the adaptation of its projects to the challenges created by the pandemic.

Another issue raised by the panel in terms of planning, coordination, and implementation was the lack of a Scientific Programme Coordinator. It was stated that coordination would very likely have been stronger if there had been additional resources for this. The limited funding for coordination was noted to have undermined and compromised the ability of the programme coordinators to work effectively with the projects. On the other hand, the panel found, the capacity of the International Science Council to mobilise partners needs to be acknowledged. The ISC was commended for its expertise in team building and in the dissemination of results, which were found impressive by the panel, and also acknowledged in the individual final reports of the research projects.

The panel highlighted the positive responses from the projects regarding the role of programme-level activities and fostering joint learning across projects. The panel acknowledged that the knowledge exchange and communication activities showcased the programme well and clearly brought added value. The panel noted that the efforts were even more commendable in the context of the challenges posed by the Covid-19 pandemic to interaction, meetings, knowledge exchange, and communication activities. Despite these challenges, the panel concluded that the programme, which funded a “diverse portfolio of exciting and successful research projects” was well-planned, coordinated, and managed, thereby also acknowledging the high level of professionalism, commitment, and dedication of programme personnel.

The panel noted that the fundamental differences between the Belmont Forum and NORFACE networks were not fully appreciated until well into the implementation process. One central lesson on this front is that programme planning is needed in navigating between different participating agencies and networks from the very outset of the programme. Identifying potentials and creating mechanisms for flexibility at the outset would also likely facilitate future endeavours. A further point with regard to lessons learned was that there should be some reflection on the consequences of the chosen funding criteria, which sometimes lead to under-representation of countries that are nevertheless central to contemporary sustainability issues.

The Monitoring, Evaluation, and Learning framework was deemed satisfactory, but the panel noted with regret that it was not well adapted to the general evaluation of the programme. It was noted that the projects reported data in such detail that it hindered the evaluators from gaining a wider understanding of

the general dynamics of the projects. The somewhat rigid and mechanistic reporting system was not helpful to capture the more emergent and cross-cutting aspects and achievements of the programme.

3.4 Engagement, dissemination, and Impact

Panellists were asked to share how stakeholders were engaged in the programme, how effectively results were disseminated to stakeholders and a wider audience, and what impact on policy and practice was gained, if any.

The panel's findings were qualified by the well-known difficulty in identifying and ascribing impact to short-term research programmes. Three years is insufficient to make impact, and the evaluation process took place while the programme was still wrapping up.

Nevertheless, the panel was able to form the opinion that: 1) impact at project level was significant; 2) impact and dissemination at programme level was limited; and 3) Covid-19 brought unforeseen challenges to dissemination and stakeholder engagement. All agreed that the projects and the programme as a whole had succeeded in bringing social scientific knowledge on transformations to sustainability to the attention of stakeholders and the academic community.

1. The levels of impact at project level are significant

While all projects reported inclusion of and collaboration with broad sets of stakeholders, it was not clear to what extent (transformative) impacts have been achieved. The panel agreed, however, that the projects had had significant effects in transformations research and the sectors involved in the research process. It was clear that the programme had provided a platform to promote research on transformations to sustainability. There was deep engagement with the concept of transformations, and the empirical evidence from the projects has served to advance theoretical and conceptual debates and understandings of transformation in a range of contexts, thus making a distinctive contribution to knowledge and practice. The theoretical and empirical research conducted led to innovation in the nature of the research questions being asked. Project leads identified as two significant long-term gains the value of partner and stakeholder engagement that will extend beyond project life cycles as well as the value of the findings of the research for informing future projects. The panel noted that while the projects reported mostly positive research collaborations, "evidence for assessing the durability of research collaboration" was nonetheless limited.

Many projects involved stakeholders already in the co-designing stage of the research as well as in co-producing it. Half of the projects reported having provided information or training to government agencies, local communities, NGOs, or businesses either as part of their research methods (e.g. during workshops) or afterwards (e.g. through publications). Some for example engaged policymakers and reported local and national governments having adopted new policies as a direct result of said engagement. Some projects reported to have created bridges between local initiatives, NGOs and businesses. Others reported on increased levels of awareness of societal issues among local communities. In terms of policy effects, the outcomes clearly ranged from "raised awareness" to "changed policy".

Regarding outcomes reported by the projects, the panel nonetheless pointed out that the reporting system may not give the full picture of the achieved impacts or their characteristics, because the projects were given a rigid framework for providing the data. It was suggested that instead of a ready template, it might be more beneficial to ask the projects to evidence their impact "in a more narrative form".

Panellists also highlighted the innovative and ambitious ways in which stakeholders were involved and how research was disseminated by the projects, e.g., via arts-based communication. Dissemination that explicitly engaged policy makers (at the local and global levels) seemed however to be absent or at best limited. The sheer volume of both academic and non-academic outputs also speaks to the level of impact the projects had. Because academic outputs can be more easily measured, the panel agreed that the projects have been particularly successful in communicating and disseminating the obtained results to the (social) scientific community. Other types of dissemination and impact are less easily measured, and ascribing impact in general is difficult. Moreover, the panel agreed that it is too early to determine impact as adopted policies

have not yet been ongoing for very long and raising awareness is a long-term process. There is, nonetheless, evidence to suggest that “notable progress on this front” has been made at programme level.

2. Dissemination and impact at programme level was limited

The programme, the panel agreed, supported the projects in dissemination efforts well. Through the production of videos and short films, capacity-building workshops, and special issues, among others, the programme helped disseminate research results to scientific communities. The website was cited as useful in this regard. One of the interviewees indicated that the programme would have a long-lasting impact on global policy development, specifically highlighting the input from project members to the global ‘assessments’ of the Intergovernmental Panel on Climate Change (IPCC) and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Stakeholders were not directly engaged or targeted at the programme level, aside from a mailing list. However, because stakeholder engagement was a major criterion in the selection of projects for the programme, the panel agreed that “the programme achieved its objectives.” The transdisciplinary requirement for stakeholder/research user inclusion no doubt contributed to the high volume of public dissemination of findings/benefits beyond academic outputs.

3. Covid-19-related complications

Dissemination and impact were complicated due to the Covid-19 pandemic, which significantly limited in-person activities and transferred stakeholder engagement into the virtual world. This forced projects to reorganise their stakeholder and dissemination activities significantly, which brought on many practical difficulties. The projects had to scale down their stakeholder engagement, which on the other hand then enhanced the quality of the interactions. One of the results of the Covid-19 crisis was that the political context became less responsive due to the multiple overlapping crises, which consequently led to fewer possibilities to achieve impact.

4 Recommendations for T2S follow-up activities and future calls

The external final evaluation panel had a host of recommendations for both follow-up activities of the T2S programme as well as how a possible new one should be organised. Similar suggestions were made by the T2S researchers, some funders and others involved in the programme.

The suggestions for follow-up activities for the T2S programme consisted of the following five actions:

- Maintaining an open access database for future results of the twelve projects
- Finding ways to support these projects and the established collaborations amongst researchers
- Keeping the T2S website live and maintained, and maximising the dissemination of the project outputs
- Establishing a (quarterly) newsletter on the projects’ follow-up.
- Organising a meeting of the partners in two years’ time to take stock of the research carried out.

The recommendations around the design of another programme centred around coordination, reporting, capacity building, funding structure and evaluation. The issues that the potential partners to a new call should address in designing and executing a new program can be categorised under five overarching topics (fundable costs, reporting and evaluation, project duration, application and review process as well as co-funding models):

Funding structure

One of the major concerns in the midterm evaluation was the lack of resources to appoint a dedicated scientific programme coordinator (SPC) with the task of bringing together researchers from within and

outside the programme to increase its networking, capacity building, and impact. The final evaluation panel noted that the lack of the SPC had undermined and compromised the ability of the programme coordinators to work effectively with the projects. The synthesis learning study was considered a good pragmatic step, but one that could not fully close the gap left by the absence of an SPC. It was also noted that the study was conducted only towards the end of the programme rather than positioned to inform and support activities as they unfolded. If funding is not available for an SPC, it could be worth discussing how to enable funding for a synthesis function (budget- and personnel-wise).

The question of an SPC or a synthesis function is closely connected to facilitating outreach activities, which are necessary in the work toward impact. In T2S this role was taken over by ISC and added much to the development of the T2S community, resulting in a number of joint publications, workshops, training, etc.

Other items that were non-fundable costs in the current call, but that were mentioned as having potential for added value of a new project, included the possibility to fund non-resident researchers and mechanisms to support greater Global South project leadership and geographic balance in partnerships as well as allowing for the inclusion of PhD training as part of the programme.

Call and project duration

The relatively short response time built into the call for proposals was noted to have favoured teams that were already established. One suggestion would be to have seed-money available before the call opens to facilitate new partnership formation and co-design processes with research users/stakeholders and as a means of allowing for new types of collaborations and partnerships to give impetus for genuinely new collaborations. Transdisciplinary work was noted to require longer learning and capacity building time, because researchers coming from different backgrounds need to allow time for creating trust and joint understanding. A transdisciplinary project should ideally take 4-7 years to flourish.

Application and review process

The overall responsibility for the coordination and technical organisation of the Call was held by the T2S Coordination Office located at the Netherlands Organisation for Scientific Research (NWO) and National Science Foundation (NSF, USA). The programme office was responsible for the process through which the partners together formulated a joint call text that was published on both Belmont Forum and NORFACE websites. The application and review processes were managed through the Belmont Forum online application portal, Belmont Forum Grant Operations (BFgo). More specifically, Belmont Forum oversaw the design of the proposal form and application submission through their online platform along with the creation and distribution of the review process guidelines. The Coordination Office handled the recruitment of the panel of experts in cooperation with the project partners. The BFgo portal was also used for the reporting of the projects. The cooperation between the partners in the coordination and technical organisation of the Call ensured a streamlined, international review process, which could be an inspiration for the organisation of a new call. There were, however, some issues with the platform, which are reflected upon in more detail below.

Programme and project reporting and evaluation

An overarching suggestion was that project reporting and programme evaluation should be streamlined and aligned. The reporting system used for T2S was considered not to be user-friendly. Reporting requirements were laborious, rigid and mechanistic along with being unnecessarily demanding for the project leaders. The evaluation panel considered that the logframe matrix was not a useful guide for the projects to realise their full potential. The reporting mechanism as a whole was deemed to not properly give evidence on how the inter- and transdisciplinary engagements on the project or programme level succeeded.

One of the major limitations of the BFgo system was the lack of flexibility to adapt to the specific selection and monitoring framework employed by T2S. The standard BFgo reporting format and system did not align with the aims and objectives of the call (and related indicators). Furthermore, the accessibility of the information was a problem, as the system created very long pdf documents with a not very accessible layout. The recommendation for the organisation of a future call would be to have an integrated approach to

monitoring that starts with programme design where monitoring needs and format are already fine-tuned, and to ensure user-friendliness of the documents that need to be assessed by external evaluators.

Co-funding model

NORFACE has previously employed a host of different co-funding models in its joint calls. The T2S programme used the mixed mode funding model, where the call budget was partially spent as a real common pot and partially a virtual common pot. The benefit of this model was that it allowed for the available funding to be used for the highest quality proposals, irrespective of nationality or place of residence. More specifically, the funding model ensured that the selection of proposals could follow the joint ranking list determined by the evaluation panel rather than national funding contributions.