

Addressing the Gender and Diversity Paradoxes in Innovation — Towards a More Inclusive Policy Design

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Inclusive innovation policies are defined as policies that aim to remove barriers to the participation of under-represented individuals, social groups, firms, sectors and regions in innovation, research, and entrepreneurship activities. Their goal is that all segments of society have opportunities to successfully participate in and benefit from innovation (Planes-Satorra & Paunov 2017, 6).

Inclusive innovation can be labelled as a value-based policy, but, as we argue in this paper, it's also a profitable policy and, above all, a basic prerequisite for sustainable and efficient transition. As many sources indicate, green transition is not only a technological change, but a societal one. In addition to the technical solutions, it requires that changes are made across all levels, from individual behaviour to macro-level systems of policy making and the economy. Without a diversity of people, disciplinary backgrounds and types of innovation, the green transition cannot be executed in an effective, profitable and sustainable way.

For the Nordic countries, inclusive innovation remains a challenge. Though the Nordic countries often dominate the various equality indicator rankings (e.g. [WEF's Global Gender Gap Index](#), top 4: Iceland, Finland, Norway and Sweden), significant vertical and horizontal gender segregation in education and working life remains. This variance is also clearly reflected in RDI activities, such as policy choices and focus areas chosen, as well as programme designs promoting green transition. The so-called Nordic Gender Paradox occurs when national ideals of gender equality do not reflect individual-level values and practices. Women are overrepresented in certain occupations, such as care work and teaching, while men are overrepresented in other occupations, such as engineering and technology.

This mismatch between the 'Nordic ideal' and the reality of everyday life practices was addressed in the AGDA project (Addressing the Gender and Diversity Paradoxes in Innovation – Towards a more Inclusive Policy design). The project was a networking project led by MDI, a Finnish consulting agency for regional development together with partners from three Nordic countries. In the project, we analysed policy documents and strategies, organised dialogues in Finland and Norway and co-created practical tools and narratives for more inclusive innovation policy.

The main findings of the AGDA-project are 1) inclusive innovation requires re-thinking of our explicit and implicit norms and utilising the whole societal potential and 2) successful inclusive innovation and diverse policy design enhance sustainable green transition.

KEYWORDS: Science, technology and Innovation (STI); Research, Development and innovation (RDI); Innovation policy; diversity; inclusion; gender; programme policy; policy design; path dependence

Introduction

Inclusive innovation and paradoxes behind it

Inclusive innovation policies are defined as policies that aim to remove barriers to the participation of under-represented individuals, social groups, firms, sectors and regions in innovation, research and entrepreneurship activities. Their goal is that all segments of society have opportunities to successfully participate in and benefit from innovation (Planes-Satorra & Paunov 2017, 6). This is a high contrast to the mainstream Nordic innovation field, mostly dominated by voices coming from business sciences, engineering and technology sectors.

Verna Myers has famously stated that “*Diversity is being invited to the party and inclusion is being asked to dance.*” In the context of innovation policy and funding diversity is the state where everyone is able to practise their competence in the RDI-field, but the inclusion comes when all voices, opinions and perspectives are truly taken into account as equals. Diversity can be defined widely as sources of difference between people and their actions. For the purposes of innovation policy, in this paper we distinguish diversity of people, disciplinary backgrounds as well as diversity of roles, positions and perspectives (Figure 1). These sources of diversity are interconnected, as e.g. disciplinary background correlates strongly with gender and team roles correlate with age, gender and background. Gender refers to socially constructed norms, behaviours and roles associated with women and men as contrast to sex, which refers to biological and physiological characteristics of men, women, and intersex persons¹.

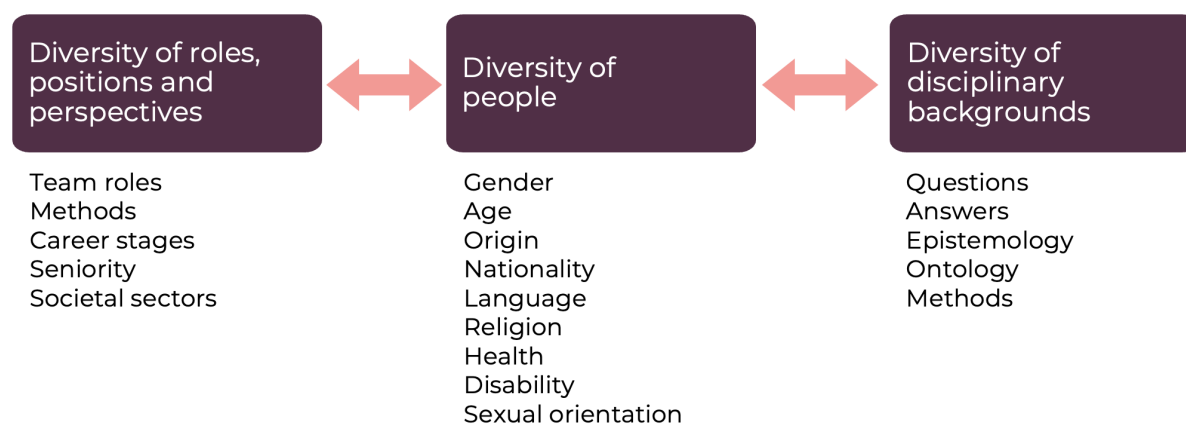


Figure 1. Elements of diversity to be taken into account in funding RDI.

Across Europe and in the Nordic countries, funding organisations and the projects and activities they fund have increasingly focused on gender equality in their attempt to promote inclusive innovation. Notwithstanding this however, the field remains far from gender-balanced, inclusive or neutral. Gender equality plans are required by funding organisations on both the institutional and project levels; the criteria for diversity are addressed in the application phase with various practices and blueprints existing to facilitate this. Yet numerous indicators continue to reflect a lack of gender balance or inclusiveness. Research funding and its innovation outputs (e.g., patents, start-up activity and investments), continue to demonstrate patchy progress towards inclusion. The sustainability of the transition is not a technical issue, rather, it is a matter of inclusion and diversity, including whether consumer and citizen values and preferences are reflected in the innovations developed.

¹ WHO. Gender and health. Website https://www.who.int/health-topics/gender#tab=tab_1

It is however important here to emphasise that inclusive innovation is not just a value-based policy, but a basic prerequisite for sustainable and efficient transition. As many sources indicate, green transition is not only a technological change, but also a societal one. In addition to the technical solutions, it requires that changes are made across all levels, from individual behaviour to macro-level systems of policy making and the economy. Without a diversity of people, disciplinary backgrounds and types of innovation, the green transition cannot be executed in an effective, profitable and sustainable way.

The approach of this working paper highlights especially gender equality and the true inclusion of women in the RDI field. This is not the blindness of other sources of diversity or intersectionality but rather a practical way of investigating the phenomenon. Since gender is the most simple source of diversity and the gender data is the one most often collected and easiest to reach, it is used here to exemplify the inclusion requirements in terms of innovation. As societies we cannot simply claim that the gender equality issue has been solved when this is clearly not the case.

The Nordic Gender Paradox is a challenge for inclusive innovation

Nordic countries have plenty in common: history, political and legislative systems, industrial structure and above all the model of Nordic welfare state. But few know that they also share the Nordic gender equality paradox. Minelgaite, Sund and Stankeviciene (2020) argue that while the Nordic countries rank highly in gender equality, there is a gap between what societies aspire to and how individuals value gender equality. More succinctly, national aspirations do not necessarily reflect the reality of gender diversity occurring at the individual-level. Gender segregation in the labour market remains a persistent problem in the Nordic countries.

Nordic gender equality gap refers thus to the situation where the high level of equality on societal level contrasts with significant vertical and horizontal gender segregation in education and working life. While Iceland, Finland, and Norway are on top in the international comparisons, there are still notable patterns of gender difference – a horizontal gender segregation between disciplines, and a vertical gender segregation with few women in top positions.

Horizontal segregation refers to a phenomenon, where women and men tend to work in different sectors. Women are overrepresented in caring and service-related professions, such as healthcare and education, while men are overrepresented in construction and technology-related fields. For instance, in Norway, the distribution of occupations by gender is highly polarised, with male- or female-dominated fields accounting for 85% of the population's employment. Within these fields, approximately 75-80% of employees share the same sex². Horizontal segregation is partly due to traditional gender roles and stereotypes but also reflects the different levels of pay and prestige associated with different occupations. As these are enacted as preferences or selection criteria in e.g., career choices, recruitment and curricula of different fields of study. Horizontal segregation is a challenge for inclusive innovation, as the main disciplinary fields for traditional or mainstream innovation, so called STEM fields (Science, Technology, Engineering, and Mathematics), are strongly segregated.

Vertical segregation is clearly visible in figure 2, which represents the proportion of women and men in different stages of academic careers in Finnish universities. It shows the well-known 'scissor effect', where proportion of men and women change places during the career path.

² <https://www.norden.org/en/statistics/labour-market>

Proportion of women and men in universities' research and teaching staff and degrees

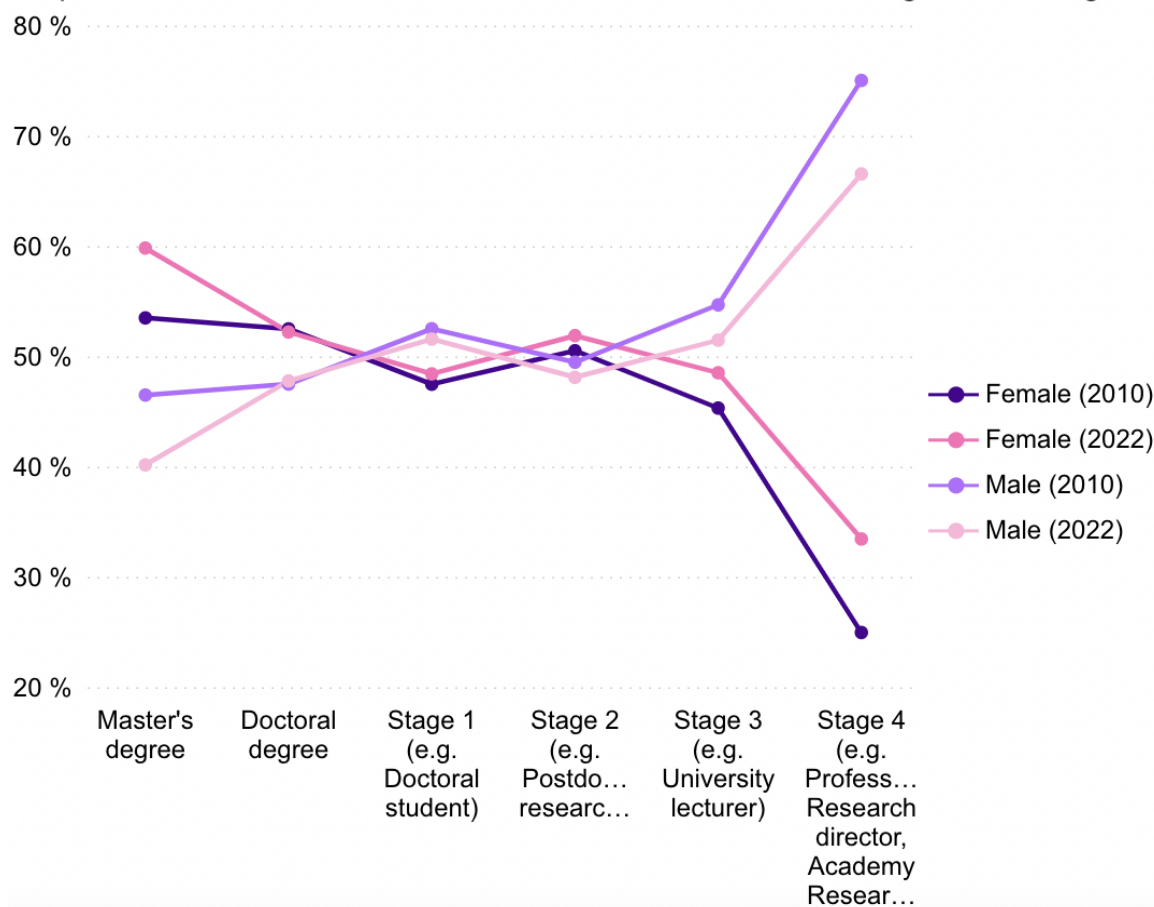


Figure 2. Source: https://research.fi/en/science-innovation-policy/science-research-figures/s2_7

Thus, for inclusive innovation to occur, vertical and horizontal understanding of gender equality is required. Gender segregation between disciplines and occupations, particularly in ICT where men are in the clear majority, represents one aspect of this Gender Paradox (Corneliussen, 2021). Yet we know from research that diversity is beneficial in terms of promoting innovation as well as for working environments and communities more generally. The green transition requires that a diverse range of people and opinions are found in all sectors of society and work-life. A situation where men dominate in the ICT sector and women in care work is unsustainable, for both sexes and for the labour market.

Data and methodology

The AGDA - *Addressing the gender and diversity paradoxes in innovation – towards a more inclusive policy design* -project has sought to bring into sharper focus the gender-paradox of innovation, especially in the area of green transition, while seeking to provide a knowledge base and a shared platform for co-creating better practices for inclusion, diversity and gender equality through processes of programme ideation, design and implementation.

What units of analysis are most appropriate to chart the gendered nature of RDI policy? In terms of strategic priorities, we analysed policy documents and strategies, whilst in implementation terms we would most likely choose programmes and projects and their concrete implications. Yet it is very difficult to access such data. There have however been a number of recent studies on gender and gender equality in programmes, projects and Research and Innovation Initiatives (e.g. [Gender STI](#))

We began with a document analysis which covered the Nordic countries' main funding organisation's strategies and guidelines related to equality and inclusion. As the project was mainly drafted as a development and networking exercise, our main focus throughout the data gathering and analysis period was on developing the narrative of inclusive innovation and green transition, primarily, its enabling factors and limitations. We tried to locate the possible nodes for a Nordic community of practice for inclusive innovation and identifying under which preconditions it could be a self-sustaining epistemic community in its own right.

From the outset we identified potential interviewees and approached them with an interview invitation. Most of the interviewees agreed to an interview, though some also declined. In some cases, the informants and stakeholders were also invited to participate in the Timeout dialogues. Most of the experts interviewed came from the innovation policy, academia or research funding areas. A valuable group of interviewees consisted of young researchers working in projects connected to the green transition. The interviews' focus was to deepen and broaden the picture of how people working with RDI feel about inclusion and diversity. Who should be considered responsible, where the inclusion work should take place and how to do it most effectively? During the project three Timeout Dialogues were organised the first during Tampere university's Geography Days, the second in Vaasa with the local stakeholders engaged in the energy sector innovation ecosystem and the third Online with the Norwegian research and innovation stakeholders of Vestlandsforskning,

Throughout the implementation process, the steering group played an important role in sharing information, knowledge and developing ideas to be taken forward. From the practitioner side, our partners included Milja Saari (PhD/Gender Studies) from the Strategic Research Academy of Finland and Annu Kotiranta (MSc Economics) from Business Finland, as well as Moa Persdotter from VINNOVA who acted as valuable collaboration partners in the steering group. We also interviewed representatives from the research and innovation funding organisations of the other Nordic countries (Norway and the Nordic bodies under the auspices of the Nordic council of ministers in particular). From the academic side, our partners included Hilde Corneliussen (Vestlandforskning, Norway), Tamar Melanie Heijstra (University of Iceland, Iceland) and Helka Kalliomaäki (University of Vaasa, Finland).

How to avoid a gender-blind innovation policy?

MESSAGE 1: Increasing workplace diversity is actually a good business decision and should be seen as an investment.

Research has already for decades shown that there are positive correlations between diversity and increased employee performance. [A recent McKinsey report](#) showed that companies in the top quartile for racial/ethnic and gender diversity were respectively 35 and 15 percent more likely to have financial returns above their respective national industry medians. In the U.S., for every 10 percent increase in racial and ethnic diversity amongst leadership, earnings rose 0.8 percent. (McKinsey 2020, p. 18)

The benefits and even direct need for diversity even in the term of gender hasn't been a concern of innovation policies in the Nordic countries, though. The argument that the Nordics have achieved gender equality and that it is now time to address other aspects of diversity, needs to be challenged. According to *Unconventional Ventures*, in the Nordics, of all the capital deployed during 2021, the share for all-women

funding teams share was 1.1%, whereas all-men teams were allocated 88.2% and mixed teams 10.7% ([The Funding Report](#)). These numbers clearly do not reflect the Nordic ideal where gender equality has already been achieved.

Work to enhance inclusion and diversity in RDI is being done in the national funding organisations (e.g. for all public organisations in [Norway, Equality Action Plan for the Research Council of Norway](#), [Business Finland, Academy of Finland Equality and Non-discrimination Plan](#), [Vinnova's Gender Mainstreaming Plan, Strategy for Gender Equality at the Swedish Research Council](#)). These plans do not however provide the solution to the promotion of true inclusion in everyday life. Nevertheless, these gender equality plans (GEP) can improve data collection and encourage organisations to publish their gender statistics under the public pressure of determining whether the plans work or not.

It is clear that single funding organisations are not sufficient to change the mindset(s) of the Nordic countries and their research and innovation sector(s) towards a more inclusive policy for innovation and research. As such, the role of networks and communities of practice was highlighted throughout the data gathering process and during the dialogues. The Nordic funding organisations and the Nordic Council of Ministers are also active in this area (e.g. [Nordic Task Force for Diversity](#)), though it should be noted that the mainstreaming inclusive innovation is still far from being achieved. In addition, the Finnish partners and funding bodies are not always equally visible or present in these networks as their Nordic counterparts. This may, in part, be due to the lack of research resources and competencies but is most likely an issue of prioritisation and policy.

MESSAGE 2: Implicit norms and structural disadvantages derive from previous innovation policies and therefore policies need to be redesigned.

The roots of the Nordic gender paradox do not lie in direct discriminatory practices or legislation, but in the implicit norms and structural disadvantages derived from the long history of innovation as a tool of economic policy. Addressing these norms and the structural disadvantages they create is difficult because they are manifest as privileges for others. This makes these historical norms difficult to identify and thus to alter. Privilege, in short, is an unearned advantage embedded in implicit and explicit norms and structures. The existence of such privileges make the ability to influence policy making, being granted funding or benefitting from the results easier for some and harder for others.

Implicit norms restricting inclusive innovation on a personal level include things like representation, namely, the norms that 'define' a qualified applicant or a good project idea. A person with education in humanities or with an immigrant background may find the written or pictorial representation distancing or have difficulty in recognising whether their idea is suitable for the call. Implicit norms also regulate an individual's propensity to take risks or their interest in seeking to commercialise their ideas. Implicit norms are not only to be found to apply to the applicant but also to reviewers. As several researchers have shown, VC funding has many gender biases in both private and governmental funding (see e.g., Malmström et al. 2017). These biases reveal implicit norms in e.g., language, rhetoric, disciplinary and even the investor's personal interest in the funded theme.

While these structural disadvantages are constructed in other spheres of society, they are reflected in innovation policies. The main structural disadvantage is embedded in the horizontal gender segregation in education and working life. STEM-sectors are dominant in innovation funding beneficiaries. As men are overrepresented in regards to STEM sector employees and entrepreneurs, this creates a structural disadvantage for the entire female population to gain access to innovation funding. This presents a significant disparity, particularly when comparing the business enterprise and government sectors (as

shown in Figures 3 and 4). In the government sector, nearly 50% of researchers are women, while in the business enterprise sector, the percentage drops to approximately 15-35%, with Finland performing particularly poorly.

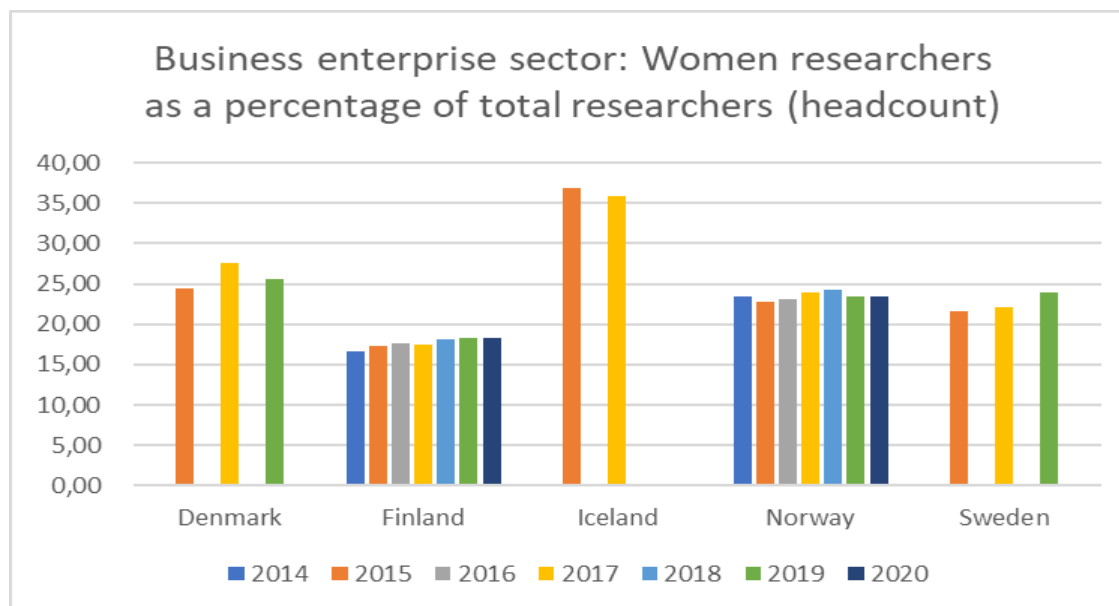


Figure 3. Source: OECD / Eurostat, Main Science and Technology Indicators, https://stats.oecd.org/OECDStat_Metadata/ShowMetadata.ashx?Dataset=MSTI_PUB&ShowOnWeb=true&Lang=en

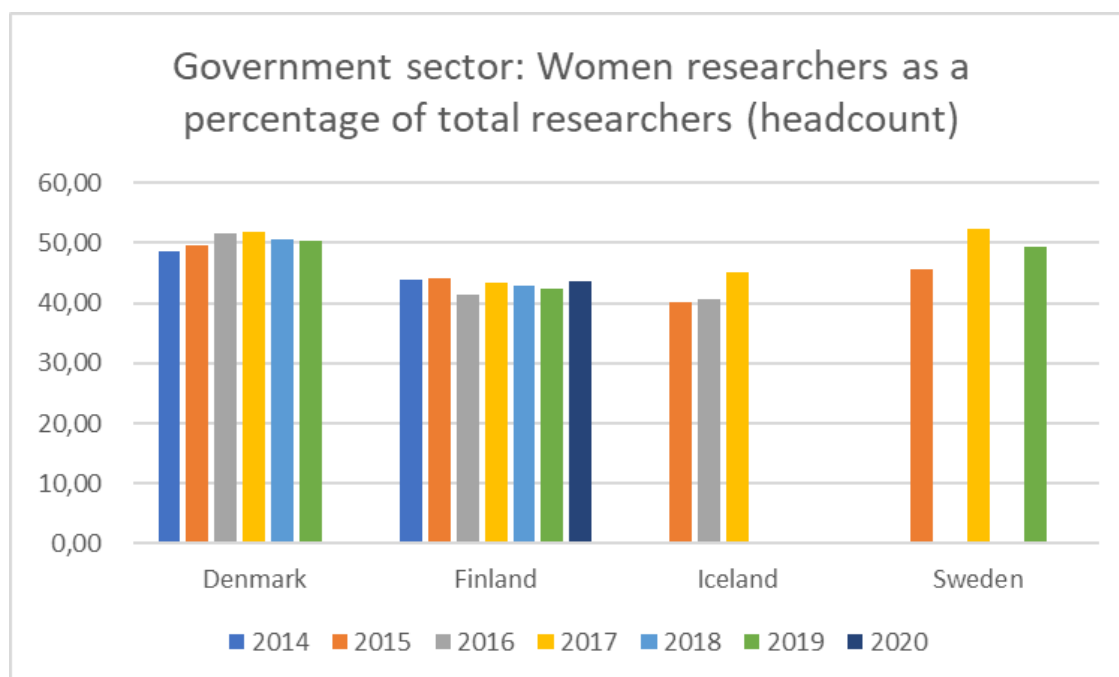


Figure 4. Source: OECD / Eurostat, Main Science and Technology Indicators, https://stats.oecd.org/OECDStat_Metadata/ShowMetadata.ashx?Dataset=MSTI_PUB&ShowOnWeb=true&Lang=en

On industry level innovation policies can favour large corporations and established industries that can e.g. utilise the incentives more effectively, benefit from their existing resources and established networks of knowledge and power in different phases of innovation. Innovation policies favour urban areas with better access to networks, clusters and wider market of skilled labour. Other industry-related disadvantages

include, for example, differences in the ability to protect IPR-rights and thus earn from the result of an innovation process and ability to scale the innovation. Industry-related characteristics become gendered through the segregation of education and employment.

Moreover, despite all the lofty objectives and goals contained in EU directives and national legislation, practical questions relating to physical and virtual accessibility, language barriers or working permits also still exist. Thus, inclusive innovation requires a re-thinking of these explicit and implicit norms and practices in a variety of ways.

Innovation policy in its renewed more transformative and mission-driven form offers a great opportunity to do better

As with most other things, also in terms of inclusive innovation, the Nordics are not a uniform group. Finland is clearly lagging behind its key benchmarks, e.g., Sweden and Norway when considering diversity in R&D policy. The equality programme of Norway's Research Council (Policy for gender balance and gender perspectives in research) states that "...gender equality, equal status and equal rights are the basic values of Norwegian society which is one of Norway's biggest competitive strengths in the international arena, economically, culturally and politically. It is paradoxical that we have not yet achieved gender equality in the areas of research and innovation, which are nevertheless the most significant drivers of change in our society".

The Academy of Finland also has a well formulated [equality and non-discrimination policy](#) under the umbrella of Responsible Science, where ensuring a balanced representation of the sexes (e.g. in the composition of decision-making bodies, among beneficiaries and measures aimed at achieving a more even gender distribution in research groups' managerial roles) is also referred to, as well as, eliminating and preventing structural inequality, actively supporting the gender perspective and promoting non-discrimination in research and network cooperation.

The evaluation of the Academy of Finland concluded that "the imbalance of R&D activities related to equality reflects the inequality and imbalance of society more than the imbalance of the Academy of Finland's own processes.:

There is however an imbalance in the application rate, with more men than women applying in each year over the analysed period. Based on the 2021 SheFigures (up to the year 2018), this imbalance broadly reflects a gender imbalance in the Finnish researcher population more broadly. In other words, gender inequalities are reproduced rather than created at the Academy. Policies operating directly on the gender balance in the research performing organisations are therefore needed, as well as incentives by the Academy as a funding organisation to encourage gender equality and diversity. The Ministry of Education and Culture should therefore consider whether it would be useful to intervene at the Academy, something which would have an indirect – but nonetheless potentially important – effect on the academic gender balance (Arnold et al. 2022, p. 76).

The Finnish funding organisations thus face certain structural disadvantages. The effective segregation of the educational sector in Finland is so strong that in the comparative analysis of the European Equality Institute EIGE, Finland gained the second weakest score in the EU in 2022, when it comes to segregation. Such a social imbalance naturally puts both organisations and individuals in a difficult position, especially

when drafting or implementing RDI policy that has transformative ambitions. The level of inequality existing in society and in its structures should not be replicated in the research and innovation community, rather RDI policy should be drafted as an exception, setting an example by ensuring a diverse and equal RDI policy. Perhaps then this impact could also leach back into other areas of policy and society.

In Business Finland's evaluation (2021), the need for more extensive cooperation and partnerships in order to better respond to societal challenges was highlighted. The assessment also noted that the most significant societal upheavals often open up opportunities for advances in productivity and competitiveness. The diversity of the knowledge-base could provide some answers to these challenges.

As Tarmo Lemola, a long-time expert on Finnish innovation policy, has stated, research, development and innovation activities in Finland have never had uniform or compatible goals, criteria or operating principles, nor recommendations or requirements for the implementation of evaluations and the utilisation of results (see Lemola 2022).

On the 1st of March 2023, the Finnish government published its long-awaited report from the Parliamentary Group on Research, Development and Innovation policy (Prime Minister's Office 2023). The report identified the same connection between productivity and the utilisation of research and innovation in the national economy. It stated also that there is a clear interdependence between education, research, innovation and the success of companies (Criscuolo et al. 2021), while also identifying the R&D activities' connection to other intangible investments, such as reforming work processes, human capital, digitalisation and intellectual property rights, though there was no connection made between inclusion and diversity and productivity. Yet no reference was made to diversity, inclusion, gender or equality. This may be an opportunity lost. As Finland aims to raise its R&D funding to 4 % of GDP in the situation of labour shortage and simultaneously falling educational attainment, there is a direct need for wider and thus more diverse pool of R&D personnel, but it has not been noted in Finnish discussion.

Although innovation policy emphasis vary between the Nordic countries, the Finnish example highlights the challenges of inclusive innovation. Policies are separated to a high degree and their crossovers are hard to think: gender diversity may be a question of social policy and ethnic diversity a question in labour policy, but innovation policy remains largely intact of questions of gender or other forms of diversity. By operating in the same way as before and with the same entities as before, nothing new will be born, even if the amount of RDI-funding increases. A substantive reform potential that our society offers for the development of a diverse RDI policy and more inclusive innovation isn't noticed or appreciated.

How to ensure sustainable transition through inclusive innovation?

Acknowledging the gendered nature of green transition

In the green transition context, economic sustainability is not the only objective of innovation. To achieve sustainable and inclusive innovation, there is clearly a need to dissolve the implicit norms and structural disadvantages inherited from the previous decades of innovation policy.

According to a study published by the Nordic Council of Ministers in 2022, green transition is a gendered phenomenon. Firstly, consumption is very much gendered. For example, food and transport, and that in consumption the impact of men as a group on the climate is greater than that of women as a group. Secondly, there should also be attention to whose work it is to innovate and make the green transition: traffic planners, vehicle manufacturers, food producers, energy companies, the fashion industry, etc., influence the climate impact in their spheres. Thirdly, decision-makers in green transition are often

economists and engineering professionals, both professions dominated by men with specific educational emphasis, thinking models and learned focuses on e.g., the goals and possible solutions of societal problems. (Nordic Council of Ministers 2022). It has even been proposed that measures to green transition have a focus that has been assessed as affecting men's consumption habits and containing technological solutions that interest men (Paavola et al., 2021).

In order to be successful, green transition needs to break gender segregation in decision making, labour market as well as consumption and lifestyles (Nordic Council of Ministers 2022). This demands also more diverse and inclusive innovation policy. As there needs to be a transition among all kinds of people in all kinds of societies and all kinds of cultures it is hard to see how this could be achieved with a very limited group of people, disciplines and enterprises.

A simplified typology of non-inclusive and inclusive innovation in green transition (table 1) highlights the varying effects of inclusiveness. It does not limit to the diversity of the RDI personnel, but also to e.g. the time scale, monetary profit and societal impact.

Table 1. Green transition at a crossroads — policy implications.

	Non-Inclusive Innovation	Inclusive Innovation
Substantive Definition	Mainly technically perceived, dominated by the energy sector	Seen as a multi-faceted and multi-disciplinary field, leaving room for social innovation, wellbeing, arts and culture
Diversity	Weak	Strong
Segregation	Strong, “women’s jobs” in the health and care sectors, “men jobs” in ICT, energy and manufacturing	Working to overcome labour market segregation, providing role models and training and career paths to different people
Time Perspective for Planning	Short-term, budget year or government term	Long term, over one government term
Societal Stability	Weak, considering innovation and social cohesion as separate, disparate areas of policy	Strong, cross-sectoral perspectives required when implications and policy impacts are considered for the planet. Ecology, economy and human activity are perceived as one.
Monetary Profits	More directly measurable, higher short term business profit, higher risks	Both business and societal profit, long term profits, lower risks, lower short-term business profits

Identifying and spreading the word about positive examples paves the way to inclusive innovation

Positive progress in terms of individual actions, projects and initiatives is being made across the system, especially in research organisations. The University of Oulu, for example, recently recruited its first [diversity expert](#) and similar positions are being created, to increase the visibility and the awareness of this topic and its importance on the organisational and societal agenda. Among other things, research organisations

themselves are increasingly active in promoting and training for diversity. VTT, for instance, is part of the [INKLUSIIV network](#) and implements diversity training for its personnel.

The questions below (Figure 5) show what aspects are followed by VINNOVA in their funding decisions. Though the visualisation is not in the form of a cycle, it demonstrated beautifully the various steps in the project (or programme) cycle, from ideation (e.g. were both men's and women's needs taken into account when the idea was formulated, do relevant gender perspectives exist and have they been taken into account), to implementation (e.g. are both women and men involved in the project groups, do they have the same influence and the same opportunity to be heard) and impact (e.g. are the results accessible to both women and men, are the gender impacts taken into account in the follow-up?).



Figure 5. VINNOVA's model for the following of gender perspectives in project funding.

The issue of gender is referred to and questions are raised in application forms, in order to raise the applicants' awareness of diversity. In VINNOVA's ongoing application on circularity for instance, it is stated that "Many problems, results and solutions can seem to be gender-neutral, but they still affect women and men differently. How do you intend to take this into account in this project and how can it affect the project's effects? Describe how the project team is composed regarding gender distribution, but also the distribution of power and influence between men and women. Describe how equality aspects have been integrated into the project. Describe equality aspects (gender and gender perspective) that can be important to take into consideration in relation to the project's field of study, solutions, and effects."³

All this is part of the ongoing work on inclusive innovation and diversity. It does not yet represent the mainstream of research and innovation while its effects and impacts remain very difficult to judge. It is not clear what the impact of various activities is on the career development of individuals, the culture of organisations or in dealing with the gender paradox, or even how effective the various policy initiatives are.⁴

³ <https://www.vinnova.se/m/fordonsstrategisk-forskning-och-innovation/ansokan/>

⁴ <https://kjonnsforskning.no/en/2021/02/fewer-gender-equality-measures-academia-finland-norway-and-sweden>

In our version of the 'privilege walk', i.e., 'privilege tour' we have tried to put ourselves in the place of an applicant for research and innovation funding and asked, is the potential for such funding equally available to all of us and if not, what aspects of privilege exist? You can access the 'tour' with its questions online [here](#).

Apart from practices and tools raising the questions of inclusion and norms, there is also a need for numerical data. Data represents an important part of our knowledge and awareness of what constitutes RDI or STI policy and its preconditions. The Finnish funding organisations differ from their Nordic partners (e.g. [Norway](#)) in that they do not provide gender specific data on applications and funding.

Conclusions and recommendations

Our exploration of the Nordic innovation and policy environment started from Finland and its path dependent development of Research and Development, and it is a unique situation, with only limited relevance to the other Nordic countries. On the other hand, the examples of the other Nordic countries can be an inspiration for the Finnish case. Finnish innovation policy has been dominated by and geared towards the needs and interests of the dominant industrial sectors, especially the technology industry. We can find inspiration and peer learning from our Nordic neighbours, in particular from Sweden, as we may need to verify our approach to innovation in the current era, however. Other Nordic countries (e.g., Norway) have a lot in common with Finland, e.g., in terms of the need to support a more diverse and less gender-biased Science, Technology, Engineering and Maths (STEM) sector development.

The reason for verification lies in the renewed focus for sustainable green transition, which in turn requires inclusive innovation. This has the potential to change both policy design, focus and planning instruments, through transformative social and service innovation for instance.

Inclusive innovation requires diversity, re-thinking of our explicit and implicit norms and utilising the whole societal potential. Inclusive innovation can help to reformulate and re-design innovation policy, but the impact can also work in the opposite direction, i.e., innovation policy in its renewed form (better suited for the green transition etc.) can foster more inclusion.

We need better policy design which responds to the needs and demands in the communities of practice / epistemic communities. The policy cycle can provide us with better tools for navigating the tumultuous sea of innovation in the changing circumstances. Making data available, focusing on inclusion and diversity and building networks and communities in a goal-oriented and systematic manner are all part of the reformulation process.

The question however remains in terms of how to ensure that people at various stages of the funding and programme cycle (from ideation groups and background memo drafters to review panels and evaluators) have sufficient inclusion competence. Training and awareness-raising of programme designers and other personnel about gender, inclusion and diversity is important, as is making such that training events and capacity-building exercises are simple and easily accessible while ensuring that each participant realises that "this is my responsibility", "I do this", "I make choices".

In addition, while recruitment should foster diversity, Vinnova, for instance, cannot engage in specific calls for certain groups, so the inclusion element here needs to be dealt with in a different way. Inclusion is not only about the diversity of people but also about diversity among disciplines and research and innovation topics.

The existence of a high level of segregation is seemingly taken for granted as is the suggestion that we, cannot do anything about it. Here we are generally dealing with technocratic and number-oriented organisations; organisations which rarely support diversity. At present, there is clearly insufficient political pressure to take diversity and inclusion into account in these organisations. Overall, the RDI field needs more capability, knowledge, awareness and training.

Inclusive innovation requires the re-thinking of explicit and implicit norms and practices in a variety of ways. This however also demands capacity-building within the innovation policy making community.

Steering and policy-making needs to be addressed in all its stages, from competence-building to planning tools as well as organisational working practices, forms and rules for networks, cooperation, regulation, and legislation.

We have focused mainly on the gender aspects of diversity here, simply because it is the easiest case to understand and address. Data is often gathered in terms of gender, though it may not be used, and most indicators can be divided accordingly. In terms of knowledge and awareness, we have also felt that if we fail to recognise even the gender norm which nevertheless applies to half the population, we simply cannot even begin to develop inclusion further.

Figure 6. The sea chart for mainstream RDI policy.



In order to be able to sail the sea of diverse and multiple potentials, such as green transition or the multiple perspectives offered by the SDGs, we need to think, act and design policies and the programmes and projects that implement them, differently. This would also offer us the possibility of perceiving the opportunities of innovation more broadly and be open to innovation in areas and sectors not so commonly associated with traditional RDI or innovation policy (from services to design, arts or culture) and appreciate different scales (from local, small-scale activities to more broadly scalable services with larger market potential, e.g., through digitalisation).

This transition from the green transition through the digital one and onwards to inclusion would allow us to be more versatile and use more varied business potentials and skills.

HOW could this be achieved?

1) Re-thinking the green transition in order to turn it into an asset in triple transition. It is the possibility of change that the need to find new paths and solutions offers us. We need to take this opportunity seriously.

2) Policy design should be more in line with what people understand and what appeals to them (decision-makers, policy-makers, practitioners, researchers and innovators). If the policy-makers want to see euro figures and Social Return on Investment (SROI), this is what we should give them. More work needs to be done on measuring the positive impact and effect of inclusion and diversity, or the cost of non-inclusion.

3) Innovation policy and research and innovation instruments need to be more in line with human-centric design. This kind of orientation is also more in line with inclusion and diversity. In addition, the ideation could benefit from being exposed to a more versatile set of ideas, backgrounds and experiences.

4) Strengthening networks and epistemic communities. Creating meeting places and ways of engaging in dialogue across sectors (e.g., gender experts meeting innovation experts, or those working with digitalisation with those working with human skills and empathy).

5) Strengthening capabilities and skills relating to implementation and trusting those in charge of implementation to make smart choices is a good strategy. This is so particularly if they have the full potential of networks and peer communities at their disposal and the tools and resources to turn inclusive innovation into reality.

6) Measurement, conceptualisation and piloting all need to address the question of inclusion and its implications.

Data is required to raise awareness and to show results and impacts.

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More information

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