Report on *RECAST Seminar on Sustainability in Research*
Dalarna University
Dalarna Science Park
June 2, 2022

Report prepared by:
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Associate Professor Educational Work
Coordinator RECAST

Introduction

A full-day seminar on *Sustainability in Research* was organized by the *Research Collegium for the Advancement of Sustainability* (RECAST), Dalarna University (DU) on June 2, 2022 at Dalarna Science Park in Borlänge. The purpose of the seminar was to discuss and promote DU's goals and missions for sustainability in research and doctoral studies. Approximately 40 participants, including researchers, doctoral students and lecturers attended the seminar that is related to sustainability and Agenda 2030.

The seminar was moderated by Professor Dr. Jörgen Elbe, Pro Vice-Chancellor, Associate Professor Dr. Maria Jansdotter Samuelsson, Deputy Vice-Chancellor, Sustainability and External Relations, and Professor Dr. Tara Duncan, Tourism Studies at Dalarna University. The seminar program included two *panel discussions* and 5 research presentations. For the seminar program, see *Appendix 1*.

Professor Elbe welcomed the participants to the seminar, presented doctoral studies at DU, and informed about the activities of the Global Challenges University Alliance (GCUA) 2030. GCUA is a global learning forum for PhD students and the purpose of the platform is to equip PhD students with knowledge, tools, and networks necessary to conduct research that can contribute to sustainability. GCUA conducts webinars, courses, workshops, massive open online courses (MOOC), and mentorship programs. (For further information, see: https://www.slu.se/en/collaboration/international/slu-global/global-challenges-university-alliance/about-gcua/). Professor Elbe pointed out that DU has four PhD programs: Microdata analysis (2012), Care science (2017), Educational work (2017) and Energy systems in built environments (2021). Currently 55 doctoral students are enrolled. One of the goals and missions for sustainable development at DU 2020-2026 is that "…doctoral students should have the opportunity to reflect on the importance of their projects for long-term sustainable development through course elements in postgraduate courses or at seminars", see *Appendix 2.*

Associate Professor Dr. Maria Jansdotter Samuelsson started the session with a presentation about sustainability and the visions of DU. She mentioned that "through our education and research, we will contribute to a good society – one that is founded on democratic principles and that is socially, economically, and environmentally sustainable both for our own generation and for generations to come" (Research - Dalarna University (du.se)). She also talked about the *Climate Framework for Swedish Higher Education Institutions* and DU's *Goals of Sustainability 2021-2025*. Dr. Samuelsson emphasized the need for collaboration between education and research. She mentioned that it is important to engage universities and colleagues

to contribute to national and international commitments to reach the 1.5 C-target. The presentation can be found in *Appendix 3*.

Panel discussion I

The first panel discussion addressed how researchers at DU are encouraged to work with the "wicked problems" and how they conduct studies addressing sustainability in today's global environment – "if we see this as characterised by a post-COVID world where economic sustainability is seemingly prioritised over the social and environmental" (Professor Duncan). What strategies do the panelists think DU can adopt to ensure better university-wide or cross-school collaborations to develop (and apply for) research projects that addresses sustainability?

The panel discussion was chaired by Professor Tara Duncan. The panelists were: Professor Dr. Tarja Alatalo, Deputy Head of the School of Teacher Education, Associate Professor Dr. Ioanna Farsari, School of Culture and Society, and Professor Dr. Kenneth Carling, School of Information and Engineering.

According to the panelists, it is important that we look at sustainability issues from different perspectives and then go for solutions. The tension between local and global was also discussed since our local actions contribute to global sustainability. To make sustainability research more useful and to contribute to the society, the panelists suggested that:

- We should engage our community in co-designing research questions.
- It is essential to reach out with research results to society.
- We should consider language and platforms for sharing knowledge.
- Educational research is essential for society as teachers prepare today's children for tomorrow's challenges both locally and globally. Organize workshops and seminars for teachers to inform and share knowledge important to sustainability.
- It is essential to focus on research methodology. Transdisciplinary research involving stakeholders is needed but there is not an established research methodology for this. How to evaluate the quality of such research was pointed out.
- Research funding is required to enhance research activities at DU.
- Dissemination and communication strategies should be in place – not only scholarly publications but also to reach decision and policy makers. However, to ensure quality it is important to peer review results before dissemination.
- RECAST was mentioned as an excellent initiative. It needs to be more visible at DU and move to the next level – not only presenting research, but also facilitating the development of new research ideas. According to the panelists, there is a need for knowing each other's research and collaborate across the Schools of DU.

Panel discussion II

The second panel discussion was about S*ustainability in Doctoral Studies*, "Goals and Missions for Sustainable Development at Dalarna University 2021-2026" and GCUA 2030. The discussion was chaired by Professor Elbe and the panelists were: Professor Dr. Chris Bales, Director of Doctoral Studies in Energy Systems in the Built Environment, Professor Dr. Tarja

Alatalo, Deputy Head of the School of Teacher Education, Professor Dr. Yves Rybarczyk, Director of Doctoral Studies in Microdata Analysis, and Mr. Markus Falk Johansson, Doctoral Student in Health Sciences. Some of the major points from the discussion are mentioned below:

- Although all research programs at DU consider sustainability as crucial, it is not yet the core interest of all disciplines.
- It is important that all dimensions of sustainability are considered. Currently, more focus is given on ecological and economic dimensions of sustainability and less on the social dimension.
- University-wide research seminars on sustainability could be one way forward, for example the seminars organized by RECAST.
- Joint seminars across PhD programs would be beneficial and doctoral students may benefit from meeting senior researchers from other disciplines.
- Multicultural program with doctoral students and researchers from across the world was considered important.
- There is no specific course on sustainability provided in any of the PhD programs, but some students have taken courses at GCUA 2030 or other institutions. Disciplines can be too narrow to allow for addressing sustainability in a broad sense.
- Although courses do not focus on sustainability, individual PhD project often include sustainability.
- A central fund to support international mobility would be helpful.

Research presentations

Five research presentations were made during the seminar. The presenters were employed at DU's *School of Culture and Society*, *School of Health and Welfare*, *School of Language, Literatures and Learning*, and *School of Information and Engineering*. One of the presenters was employed at *the School of Nursing and Midwifery at the University of Plymouth, England,* and another was employed at *the research school at Mälardalen University*. The presenters showed how their research address the United Nations' (2015) Sustainable Development Goals (SDGs) to combat local and global challenges to "transform our world". Each presentation was followed by questions and a brief discussion. Summaries of the presentations are provided below:

- Dr. Johan Borg, Senior Lecturer in Medical Sciences, presented a paper titled *Assistive Technology – A Means to Achieve the Sustainable Development Goals*. It was based on his work on the "Global Report on Assistive Technology" for the World Health Organization, which was published by the WHO and UNICEF in May 2022. He was the Executive Editor of the report, which includes population studies from 35 countries and surveys with 70 responding countries. For further information, see *Appendix 4*.
- Ms. Jennie Aronsson, Doctoral Student, University of Plymouth and DU, and Professor Dr. Marie Elf, from Health Science at DU presented their paper on *Sustainability Education and Research at the School of Nursing and Midwifery at the University of Plymouth, England, and our Collaboration with Dalarna University*. They talked about how sustainability and climate change education have been embedded into the

curriculum. They shared some examples of the use of a variety of teaching styles and methodologies. More information can be found in *Appendix 5*.

- Mr. Ravi Dar, University Lecturer, Business Administration and Management, presented a paper on *Pricing for 55. A Corporate Governance and Choice Architecture Approach to GHG Emission Mitigation and the Circular Economy*. This is a concept paper presented at Neon 2021 Conference in Lillehammer, Norway. See *Appendix 6.*
- Ms. Sara Svensson, Doctoral Student at Mälardalen University, is included in a research project titled *Future Proof Cities* at DU. She presented a study titled *Planning for Reduced Segregation - A Study of Work and Organization within the Municipal Community Building Process*. Ms. Svensson described segregation as a process and condition. She mentioned that the purpose of her study is to create knowledge on the institutional conditions and organisation for work to reduce residential segregation in the municipal community planning process. For more information, see *Appendix 7*.
- Dr. David Gray, Senior Lecturer, School of Language, Literatures and Learning, presented a paper titled *'My Job Is to Take Care of You': Intergenerational Environmental Justice in Contemporary Fiction*. He talked about climate change, climate change criticism & "Cli-fi" and eco-criticism in literary studies. He mentioned that "Ecocriticism is a broad way for literary and cultural scholars to investigate the global ecological crisis through the intersection of literature, culture, and the physical environment." ("Ecocriticism", *Oxford Bibliographies*). See *Appendix 8* for details.

Wrap up and up-coming activities for RECAST

The wrap up session was conducted by Professor Elbe, Dr. Samuelsson, and Dr. F. Borg. The following issues were highlighted:

- RECAST must move to the next level to encourage and support research related to sustainability and Agenda 2030 at DU.
- Doctoral students should get the opportunity to present their studies at RECAST seminars along with researchers.
- Internal funding should be available to encourage interdisciplinary research to facilitate the development of new research across the Schools at DU.

The next RECAST seminar will be held on November 1, 2022, in Falun at DU. The preliminary theme is: Doctoral projects and sustainability. More information will be available in October.

Acknowledgements

Sincere gratitude to all presenters, moderators, panelists, and participants that made this seminar possible. Financial support for the RECAST seminar was provided by DU's Council for Sustainability. Special thanks to Lena Frölander, Conference Coordinator in Central Administration, Anna-Lena Berglund, University Lecturer in Industrial Economics, Johan Borg, Senior Lecturer in Medical Sciences, Anton Granholm, Lecturer in Medical Sciences, and the staff of Dalarna Science Park.

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Literatures and links

GCUA 2030: https://www.slu.se/en/collaboration/international/slu-global/global-challenges-university-alliance/about-gcua/

RECAST: https://www.du.se/en/about-du/this-is-dalarna-university/sustainable-development/recast/

Sustainable Development: https://www.du.se/sv/om-oss/hogskolan-dalarna/hallbar-utveckling/, accessed 2022-08-08.

United Nations. (2015). Transforming our world: the 2030 Agenda for Sustainable Development. United Nations. Retrieved from http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E, accessed 03-12-2015

Appendix 1: RECAST seminar program

Seminar on Sustainability in Research

Interdisciplinary research seminar on sustainability

Date and time:	2 June 2022, 08.30-15.55
Place:	Dalarna Science Park (Teknikdalen), Borlänge
Language:	English
Zoom:	Not available
Moderators:	Jörgen Elbe, Professor, Pro Vice-Chancellor, and Maria Jansdotter Samuelsson, Docent, Deputy Vice-Chancellor, Dalarna University

Time	**Topic or Activity**
08.05	Transport from Falun to Borlänge
08.30-08.45	Tea/Coffee
08.45-08.50	*Welcome and Introduction* by Jörgen Elbe and Farhana Borg
08.50-09.00	*Dalarna University's work with sustainability* by Maria Jansdotter Samuelsson
09.00-09.50	*Panel discussion of sustainability in research*," Goals and Missions for Sustainable Development at Dalarna University 2021-2026" Tarja Alatalo – Deputy Head of the School of Teacher Education, Research Ioanna Farsari – School of Culture and Society Kenneth Carling – School of Information and Engineering Discussant: Tara Duncan
09.50-10.00	Break
10.00-10.50	*Panel discussion of sustainability in doctoral studies*," Goals and Missions for Sustainable Development at Dalarna University 2021-2026" and GCUA 2030 Chris Bales – Director of Doctoral Studies in Energy Systems in the Built Environment Tarja Alatalo – Deputy Head of the School of Teacher Education, Research Yves Rybarczyk – Director of Doctoral Studies in Microdata Analysis Markus Falk Johansson – Doctoral Student in Health Sciences Discussant: Jörgen Elbe
10.50-11.00	Break
11.00-11.30	*Assistive technology – a means to achieve the Sustainable Development Goals* by Johan Borg
11.30-12.00	*Sustainability education and research at the School of Nursing and Midwifery at the University of Plymouth, England, and our collaboration with Dalarna University* by Jennie Aronsson and Marie Elf
12.00-13.00	Lunch at Dalarna Science Park
13.00-13.30	*Pricing for 55. A Corporate Governance and Choice Architecture Approach to GHG Emission Mitigation and the Circular Economy* by Ravi Dar
13.30-14.00	*Planning for reduced segregation - A study of work and organization within the municipal community building process* by Sara Svensson
14.00-14.05	Break
14.05-14.35	*'My Job Is to Take Care of You': Intergenerational Environmental Justice in Contemporary Fiction* by David Gray
14.40-15.25	*Wrap-up* by Jörgen Elbe, Maria Jansdotter Samuelsson, Farhana Borg
15.25	Refreshments
15.55	Transport from Borlänge to Falun

Co-ordinator: Farhana Borg, Dalarna University. Mail: fbr@du.se Tel: 023-778349

Appendix 2: Jörgen Elbe's Presentation

Sustainability in doctoral studies at DU

- Four programs:
  - Microdata analysis (2012)
  - Care sciences (2017)
  - Educational work (2017)
  - Energy systems in built environments (2021)
- 55 doctoral students

Sustainability in doctoral studies at DU

- The Swedish University Act:
  - “universities must promote a sustainable development which means that current and future generations will have a healthy and good environment, economic and social welfare and justice”.

- The goals and missions for sustainable development at DU 2020-2026:
  - “…doctoral students should have the opportunity to reflect on the importance of their projects for long-term sustainable development through course elements in postgraduate courses or at seminars”.
- Global Challenges University Alliance, GCUA 2030
  - A global learning forum for PhD students
  - Webinars, courses, workshops, MOOC´s
  - Mentorship programs

Connecting PhD students worldwide to address the global challenges

BOKU
SLU
University of Hargeisa
Örebro University
Högskolan Dalarna
Makerere University
NUI Galway
University of Saskatchewan
Michigan State University
Universidad de Chile
香港大學 The University of Hong Kong
The University of Tennessee Knoxville
Jamaica College
Murdoch University
SRUC
Lincoln
UR
Nelson Mandela University

Appendix 3: Maria Jansdotter Samuelsson's presentation

Maria Jansdotter Samuelsson,
Deputy Vice Chancellor Sustainability and External Relations

Working for sustainability at Dalarna University

Sustainability and the Vision of Dalarna University

Working together with our students and partners, we will create pathways to new and existing knowledge that are open, accessible and inclusive.

The education we offer will increase the independence of students in both thought and action and in their ability to take active responsibility for their futures as professionals and members of society; further, we will have a supportive role in people´s learning and in their lifelong process of self-formation

Through our education and research, we will contribute to a good society- one that is founded on democratic principles and that is socially, economically and environmentally sustainable both for our own generation and for generations to come.

Sustainability and the Values of Dalarna University

We will be accessible and open in our views and actions both within the University and towards the world around us.

We will dare to try new ideas and to tackle complex issues.

We will serve as a critical and intellectual hub within society.

Climate Framework for Swedish Higher Education Institutions

- Aim of engaging universities and university colleges to contribute to national and international commitments to reach the 1.5 C-target.

- 38 institutions have signed

- Each institution should be prepared to work with education, research, collaboration, business travels and energy.

- *Goals of Sustainability 2021-2025, Dalarna University*

The yearly governmental directives to Swedish Universities and University Colleges (2022)

- Screening the pattern of business-related travels and invent strategies to lower the yearly amount of carbon emissions from such travels. Digital meetings could be an important part of such a strategy, taking recent pandemic experience into account.

- *Similar in the goals of sustainability for Dalarna University 2021-2025.*

Appendix 4: Johan Borg's presentation

DALARNA UNIVERSITY

RECAST Seminar on Sustainability in Research, 2 June 2022

Although I cannot move, and I have to speak through a computer, in my mind I am free.

Stephen Hawking

Assistive technology – a means to achieving the Sustainable Development Goals

Johan Borg, Senior lecturer in medical science focusing welfare technology

Photo: Illustrerad Vetenskap

Structure

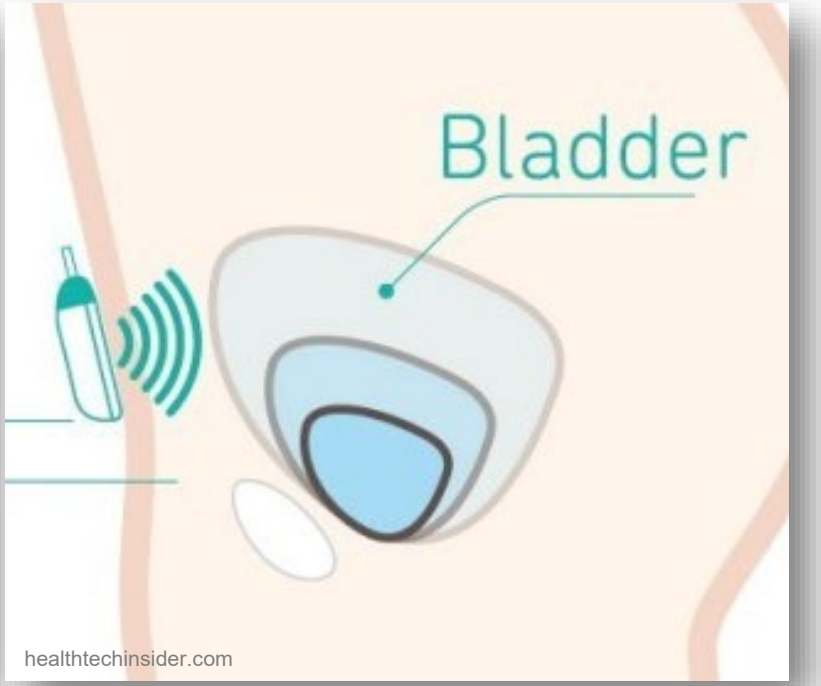
- What is assistive technology?
- How is assistive technology related to the Sustainable Development Goals?
- How is assistive technology promoted globally?
- What is the situation in Sweden?
- What is the situation globally?
- What are the recommendations for promoting assistive technology globally and consequently sustainability?

WHO definitions

An **assistive product** is any external product, especially produced or generally available, the primary purpose of which is to maintain or improve an individual's functioning and independence, and thereby promote their well-being. Assistive products are also used to prevent impairments and secondary health conditions.

hjelpemiddeldatabasen.no


abilia.com



healthtechinsider.com

WHO definitions

Assistive technology is the application of organized knowledge and skills related to assistive products, including systems and services.

Assistive products and the Sustainable Development Goals

HÖGSKOLAN DALARNA

Photos on Unsplash and by Kevin Evans

Assistive products and the Sustainable Development Goals

Tebbutt *et al. Globalization and Health* (2016) 12:79
DOI 10.1186/s12992-016-0220-6

Globalization and Health

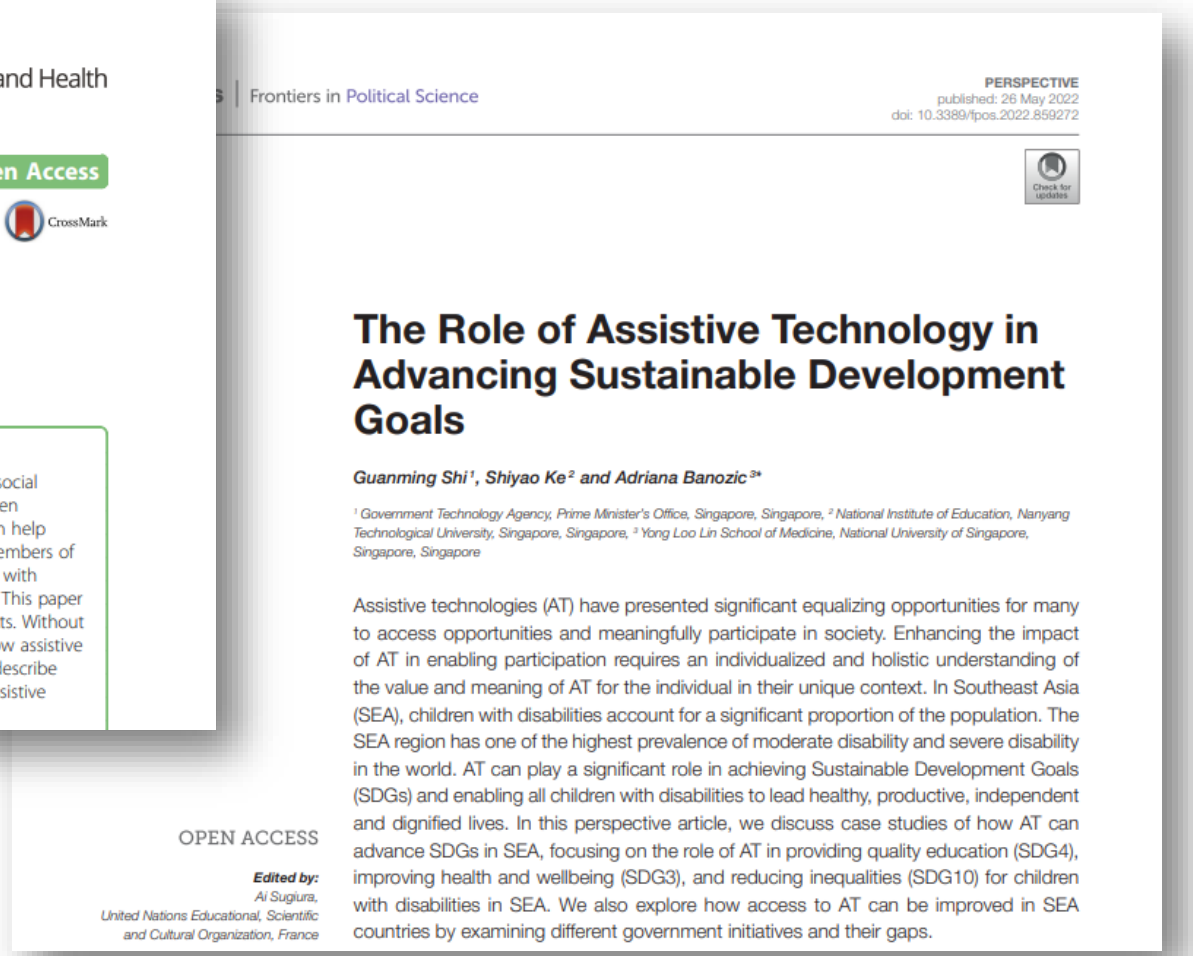
COMMENTARY Open Access

Assistive products and the Sustainable Development Goals (SDGs)

Emma Tebbutt[1], Rebecca Brodmann[1], Johan Borg[2], Malcolm MacLachlan[3,4,5*], Chapal Khasnabis[1] and Robert Horvath[6]

Abstract

The Sustainable Development Goals (SDGs) have placed great emphasis on the need for much greater social inclusion, and on making deliberate efforts to reach marginalized groups. People with disabilities are often marginalized through their lack of access to a range of services and opportunities. Assistive products can help people overcome impairments and barriers enabling them to be active, participating and productive members of society. Assistive products are vital for people with disabilities, frailty and chronic illnesses; and for those with mental health problems, and gradual cognitive and physical decline characteristic of aging populations. This paper illustrates how the achievement of each of the 17 SDGs can be facilitated by the use of assistive products. Without promoting the availability of assistive products the SDGs cannot be achieved equitably. We highlight how assistive products can be considered as both a mediator and a moderator of SDG achievement. We also briefly describe how the Global Cooperation on Assistive Technology (GATE) is working to promote greater access to assistive products on a global scale.



Frontiers in Political Science

PERSPECTIVE
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The Role of Assistive Technology in Advancing Sustainable Development Goals

Guanming Shi[1], Shiyao Ke[2] and Adriana Banozic[3]*

[1] Government Technology Agency, Prime Minister's Office, Singapore, Singapore, [2] National Institute of Education, Nanyang Technological University, Singapore, Singapore, [3] Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore

Assistive technologies (AT) have presented significant equalizing opportunities for many to access opportunities and meaningfully participate in society. Enhancing the impact of AT in enabling participation requires an individualized and holistic understanding of the value and meaning of AT for the individual in their unique context. In Southeast Asia (SEA), children with disabilities account for a significant proportion of the population. The SEA region has one of the highest prevalence of moderate disability and severe disability in the world. AT can play a significant role in achieving Sustainable Development Goals (SDGs) and enabling all children with disabilities to lead healthy, productive, independent and dignified lives. In this perspective article, we discuss case studies of how AT can advance SDGs in SEA, focusing on the role of AT in providing quality education (SDG4), improving health and wellbeing (SDG3), and reducing inequalities (SDG10) for children with disabilities in SEA. We also explore how access to AT can be improved in SEA countries by examining different government initiatives and their gaps.

OPEN ACCESS

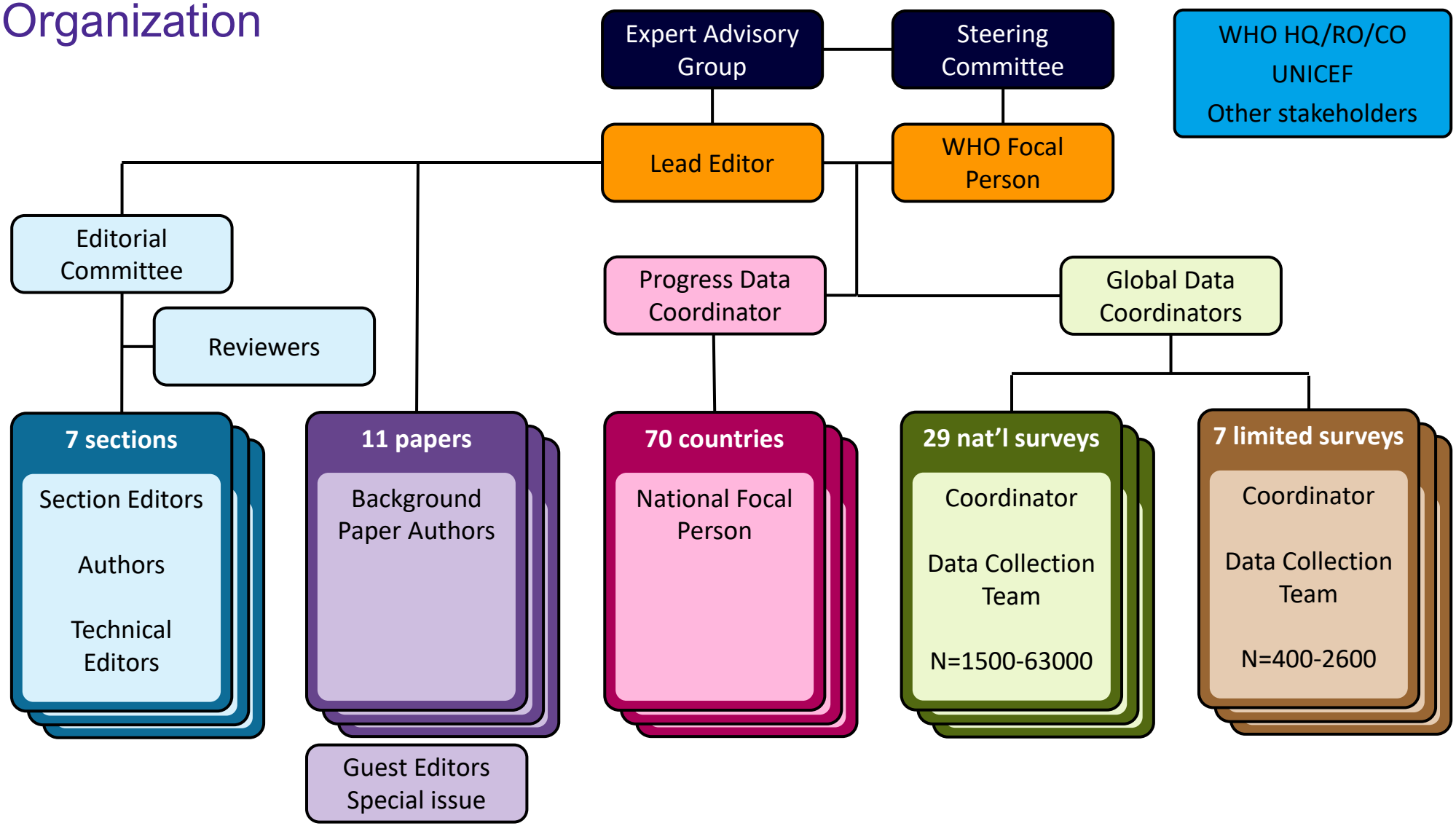
Edited by:
Ai Sugiura,
United Nations Educational, Scientific and Cultural Organization, France

Global report on assistive technology

- WHA Resolution 71.8 “Improving access to assistive technology”
- Support implementation of the UN Convention on the Rights of Persons with Disabilities and making universal health coverage inclusive

- Global consultation in Geneva 2019
- 6 Regional consultations online 2021
- Global consultation online 2021

Organization



Needs for, access to and use of assistive products in Sweden

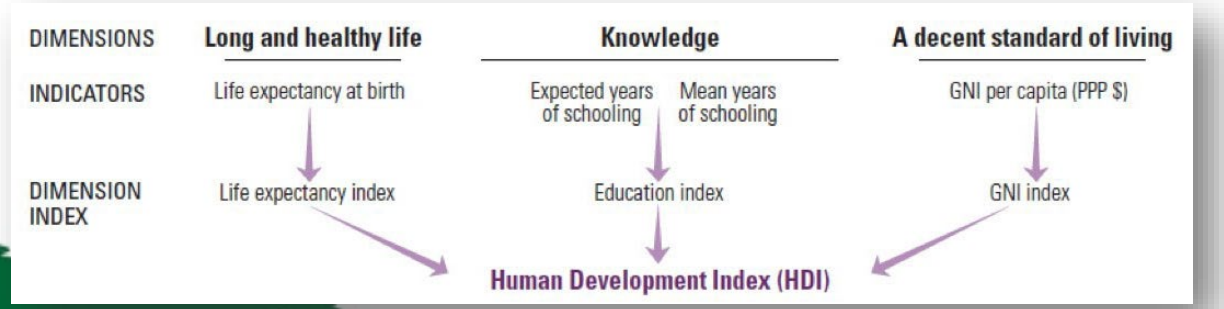
Indicator	Including spectacles	Excluding spectacles
Prevalence of need: ≥1 assistive product	68.9%	17.1%
Access	89.7%	83.2%
Prevalence of use: ≥1 assistive product	68.1%	15.8%
Prevalence of use: ≥2 assistive product	13.2%	3.9%
Prevalence of use: ≥3 assistive product	3.3%	1.3%

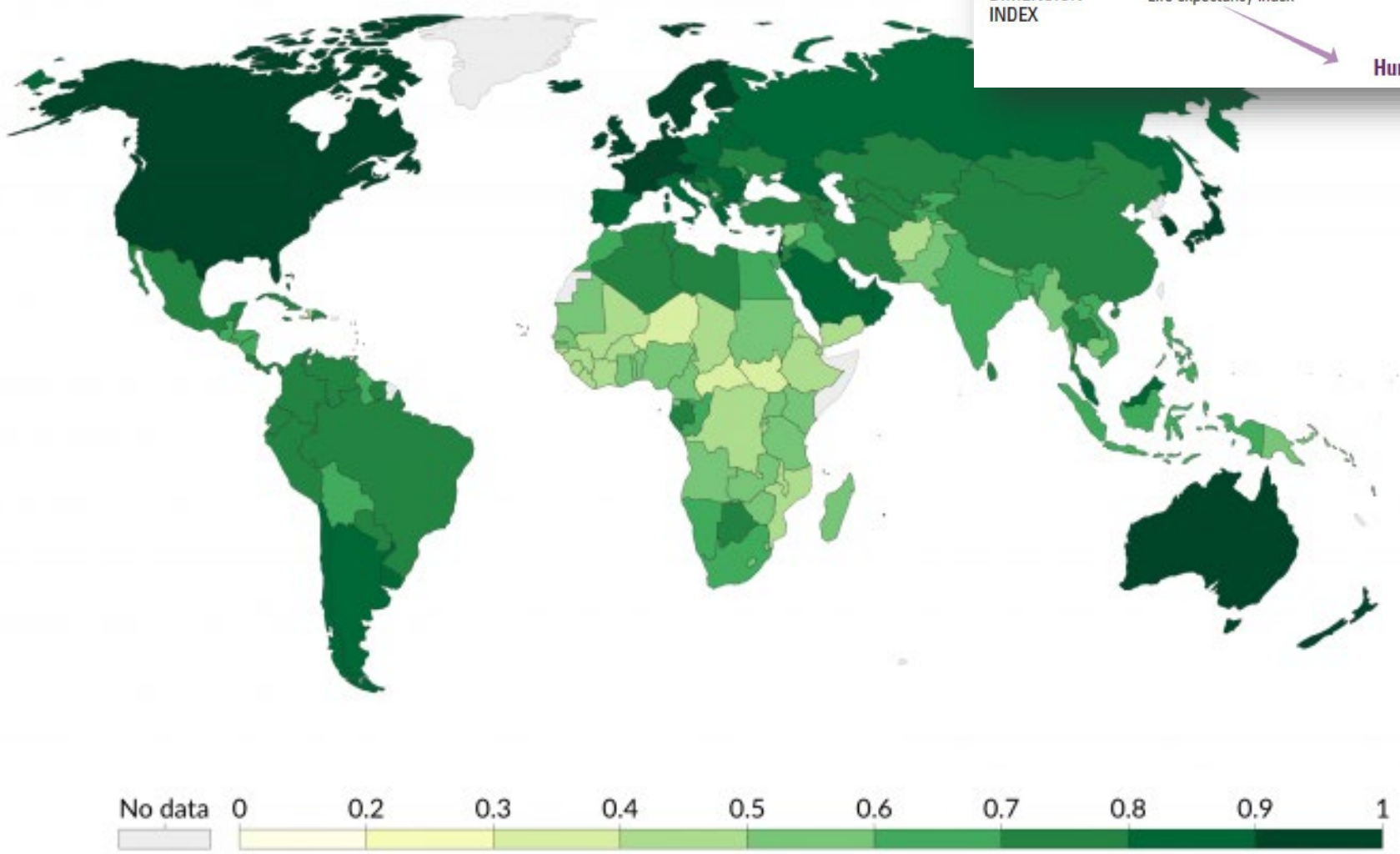
Access = the proportion of people with their need met among those with a need

Experiences of assistive technology in Sweden

- A large majority of the users were quite or very satisfied with their main assistive product (85%), assessment and training (92%), and maintenance (88%)
- Almost all found it mostly or completely suitable for their home (95%) and in public spaces (94%)
- A majority reported that it mostly or completely helped them to do what they wanted (74%)
- One in ten (10%) needed a new or to replace an assistive product
- Lack of motivation (19%), time (14%), affordability (8%) and delays (8%) were major reasons for unmet needs

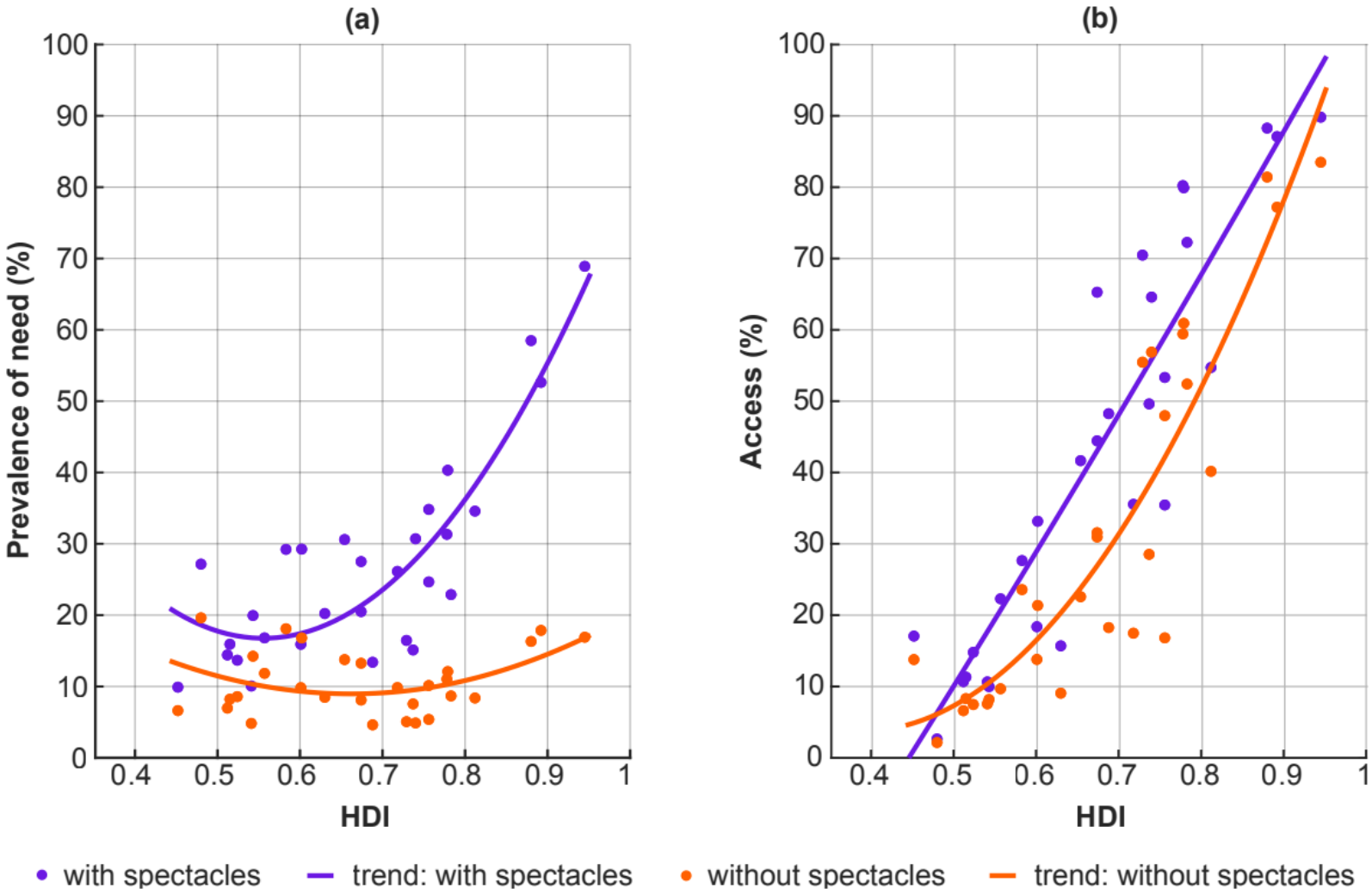
Human Development Index



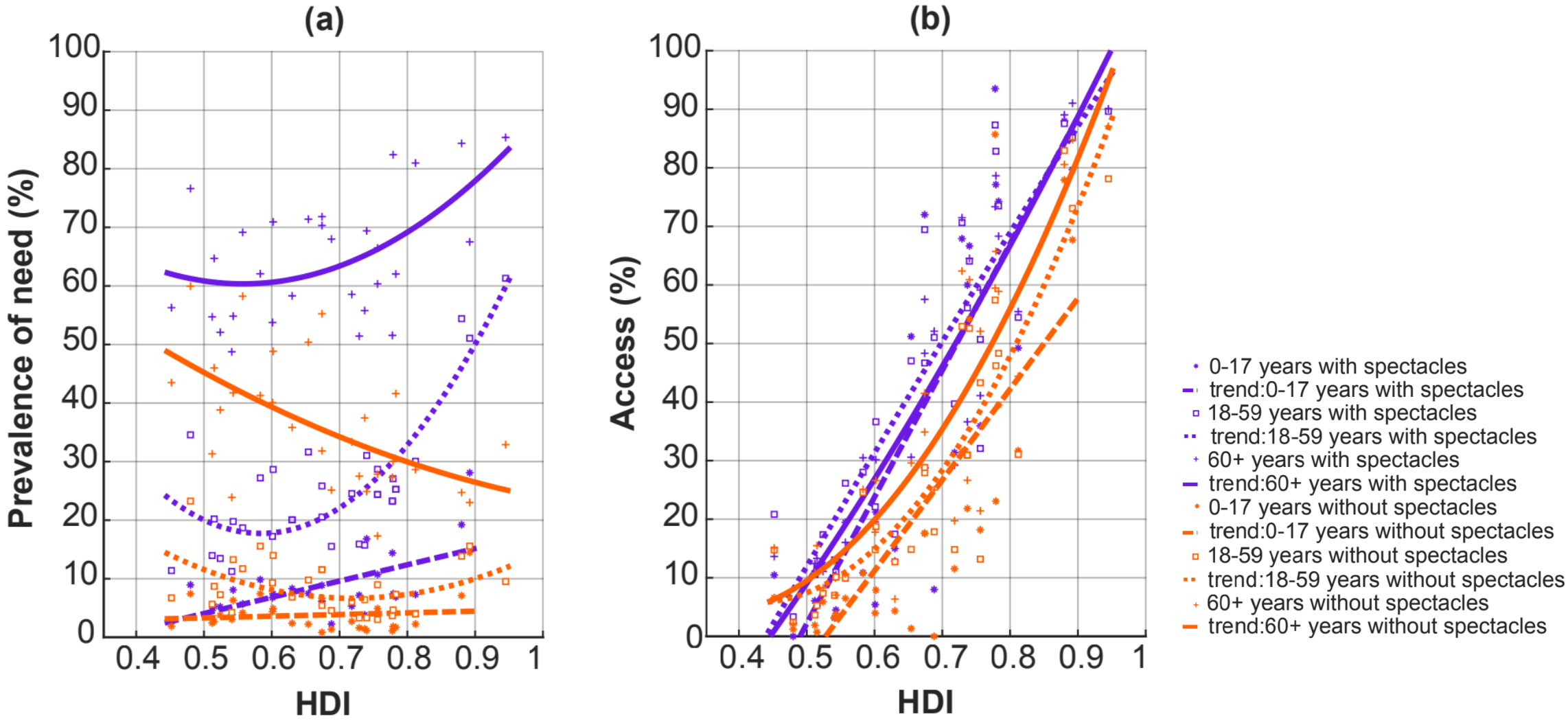


Sources: Human Development Index (HDI) | Human Development Reports (undp.org); ourworldindata.org

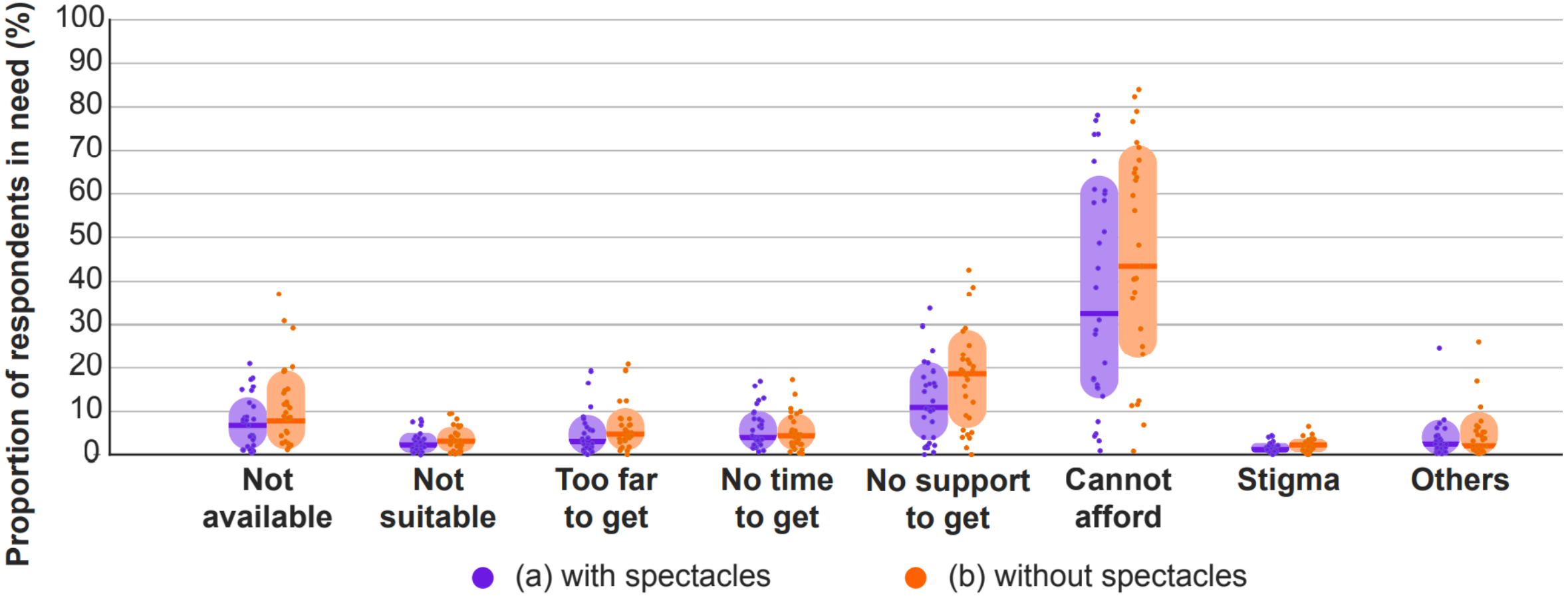
Need for and access to assistive products



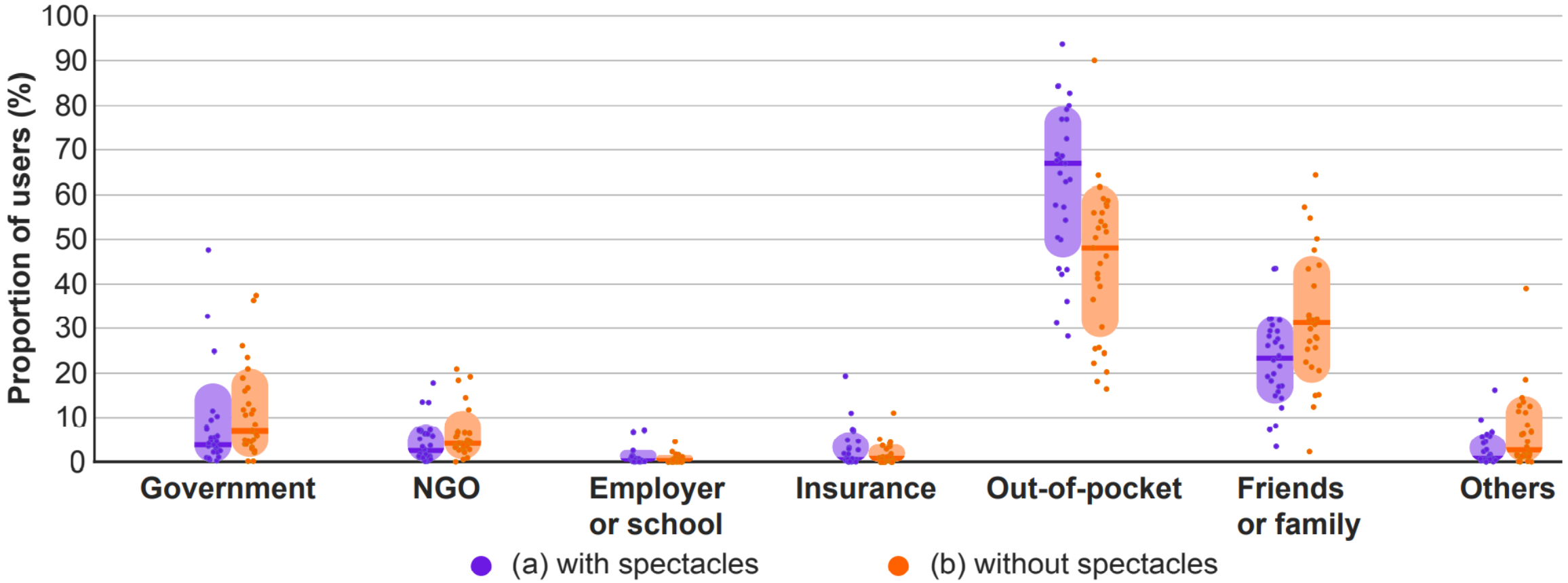
Need for and access to assistive products, by age



Barriers to assistive products

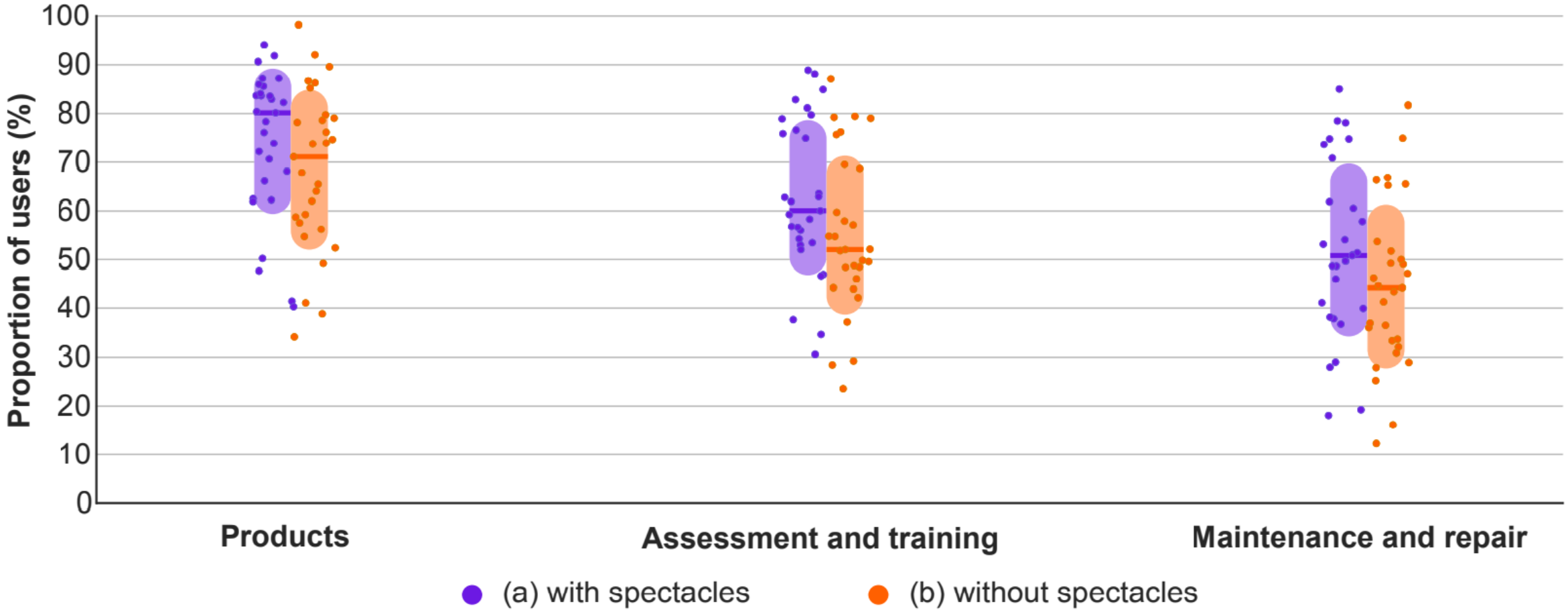


Funding for assistive products



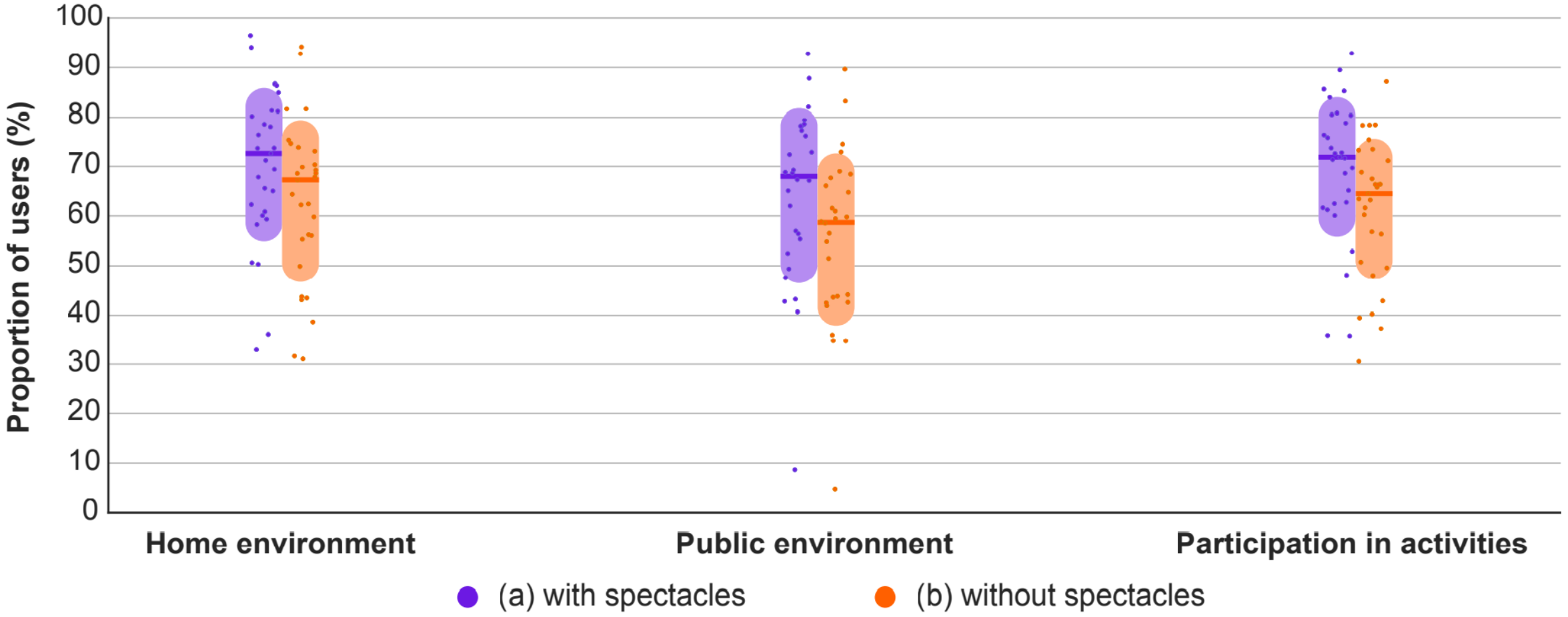
Satisfaction with assistive products and services

5-point Likert scale: Quite/Very

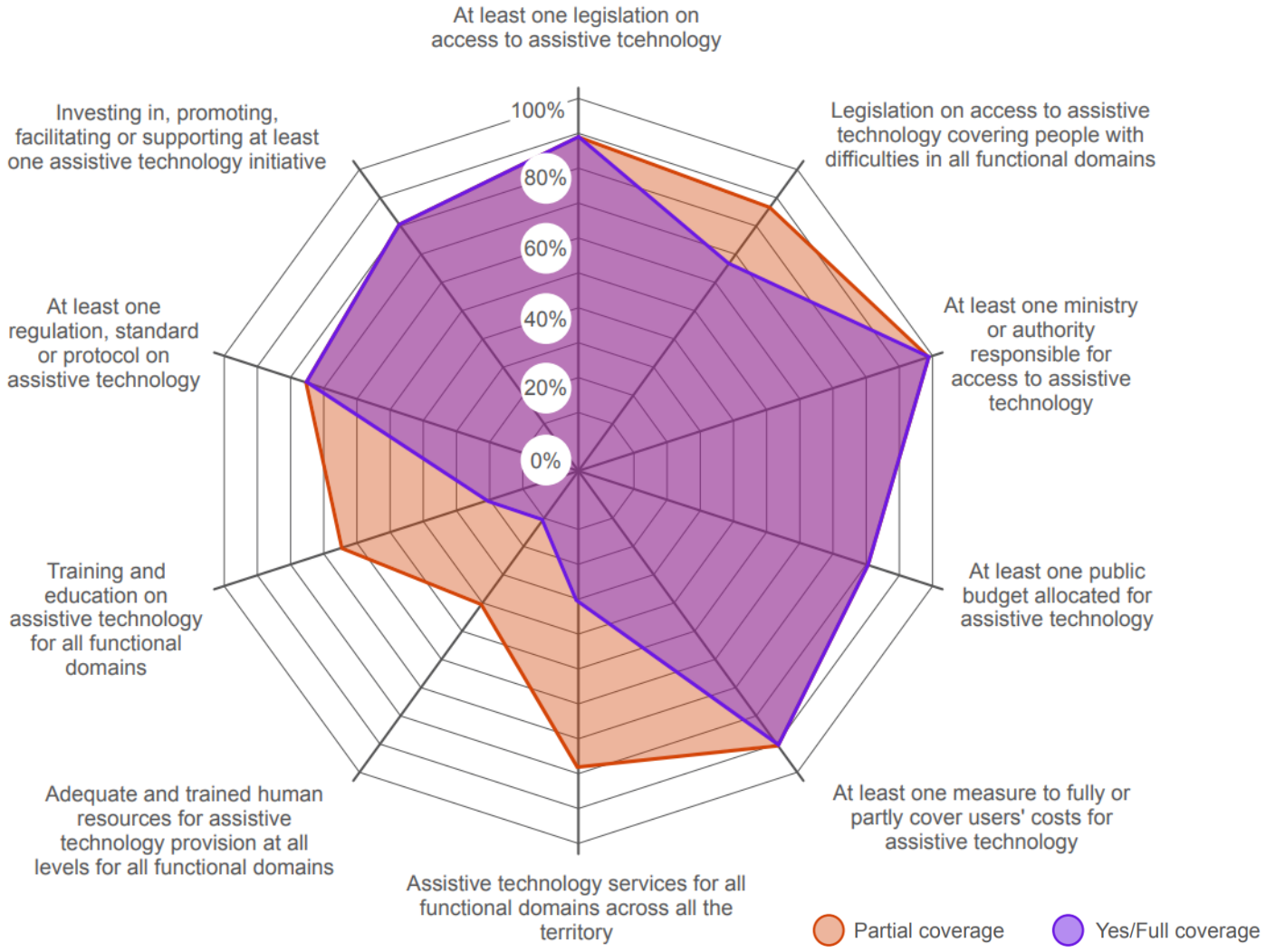


Satisfaction with suitability, use and assistance

5-point Likert scale: Mostly/Completely



Assistive technology system preparedness



Relation between system preparedness and access – manuscript

- **Objective:** To explore the relation between assistive technology system features and access to assistive technology.
- **Method:** Assistive technology system preparedness data and self-reported survey data on assistive technology from 20 countries were analysed using orthogonal partial least squares (OPLS).
- **Results:** After controlling for Human Development Index (HDI), the access was primarily associated with the proportion of districts with services (R^2 = 64 % including spectacles; R^2 = 71% excluding spectacles).

Recommendations for improving access to assistive technology (SDG 3)

1. Improve access to assistive technology within **all** key development **sectors**
2. Ensure that assistive products are **safe, effective and affordable**
3. Enlarge, diversify and improve **workforce** capacity
4. Actively involve **users** of assistive technology and their families
5. Increase public **awareness** and combat stigma
6. Invest in **data** and evidence-based **policy**
7. Invest in **research, innovation** and an enabling **ecosystem**
8. Develop and invest in enabling **environments**
9. Include assistive technology in **humanitarian responses**
10. Provide technical and economic assistance through **international cooperation** to support national efforts

Using assistive products to raise awareness about sustainability

DALARNA UNIVERSITY

I'm just a child who has never grown up. I still keep asking these "how" and "why" questions. Occasionally, I find an answer.

Stephen Hawking

Thank you for your attention!

Johan Borg, jog@du.se

Photo: Illustrerad Vetenskap

Appendix 5: Jennie Aronsson and Marie Elf's presentation

SUSTAINABILITY EDUCATION AND RESEARCH IN NURSING EDUCATION

Jennie Aronsson and Marie Elf

UNIVERSITY OF PLYMOUTH
School of Nursing and Midwifery

HÖGSKOLAN DALARNA

(UN, 2015)

United Nations sustainable development goals include

- good health and wellbeing
- reduced inequality
- quality education
- environmental protection

SUSTAINABILITY EDUCATION IN NURSING - UNIVERSITY OF PLYMOUTH

- Climate change the most urgent public health threat of the 21st century (Costello *et al.*, 2009).
- The International Council of Nursing (2018) calls for nurses to build climate resilient health systems and embed sustainability in nursing practice and education.
- The University of Plymouth have embedded sustainability and climate change into the curriculum, with the intention of motivating students to address sustainability in practice (Goodman, 2011)
- Using the NurSus project (www.nursus.eu), we employ a variety of teaching styles and methodologies.

WHAT WORKS?

Facilitators

- Strong drivers amongst the lecturing team
- Support from Head of School/management
- Nursing School Commitment (Health Care Without Harm, 2021)
- Wider university support
- Emergent research and policy initiatives
- A desire to work with, and support our students/alumni
- International collaborations

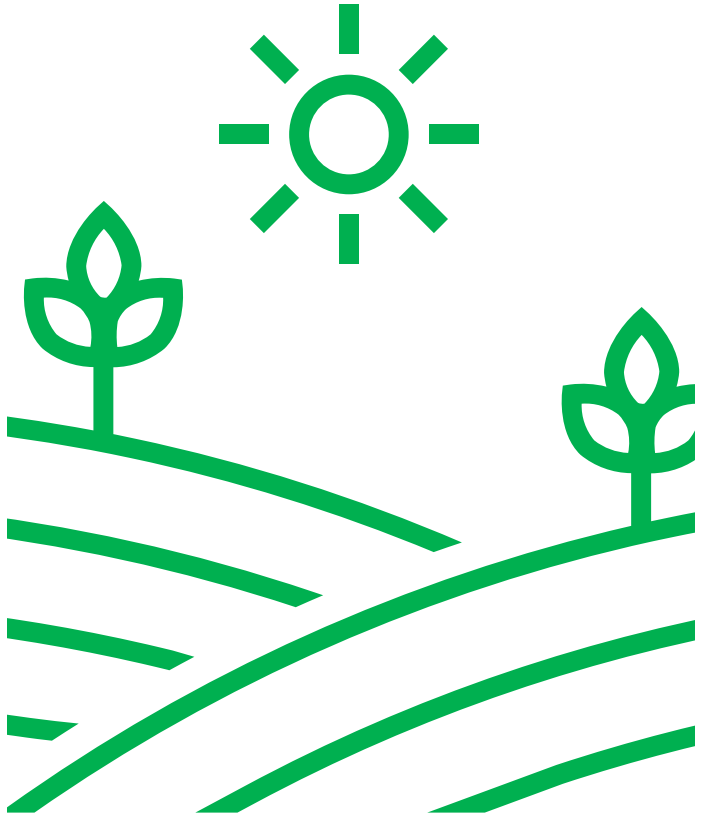
…but there are challenges too!

SUSTAINABILITY EDUCATION IN NURSING - DALARNA UNIVERSITY

Nursing curriculum have several learning goals and activities on sustainability and how climate change impact health

Pharmacology

Describe how drugs affect the environment and discuss how administration can be more sustainable from an environmental perspective.

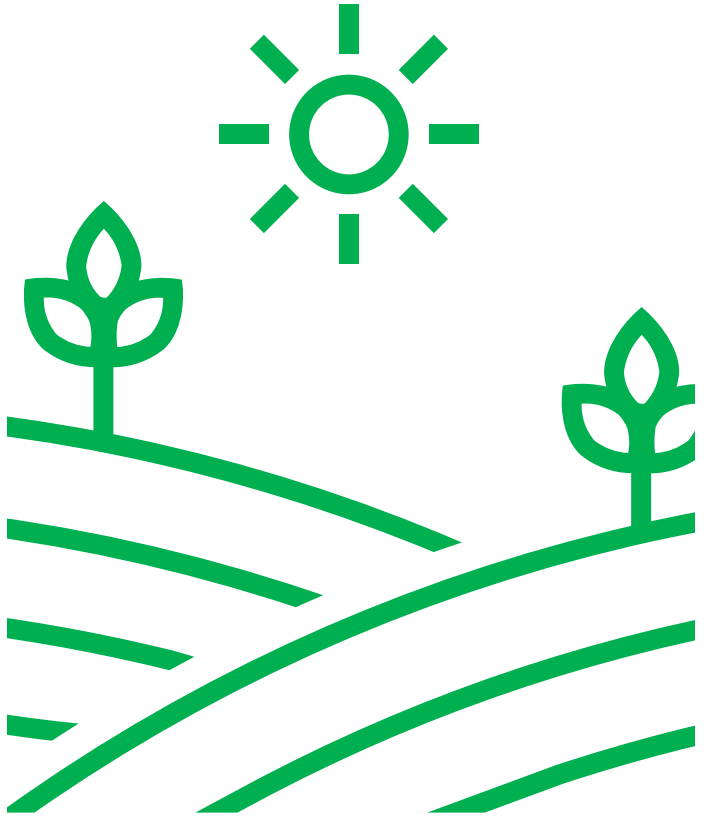


SUSTAINABILITY EDUCATION IN NURSING - DALARNA UNIVERSITY

Human health and society

Describe the global sustainability goals and the national public health goals from an individual, family, social and multicultural perspective.

Describe the consequences of current climate change based on the concepts of ecological, economic and social sustainability as part of sustainable development.



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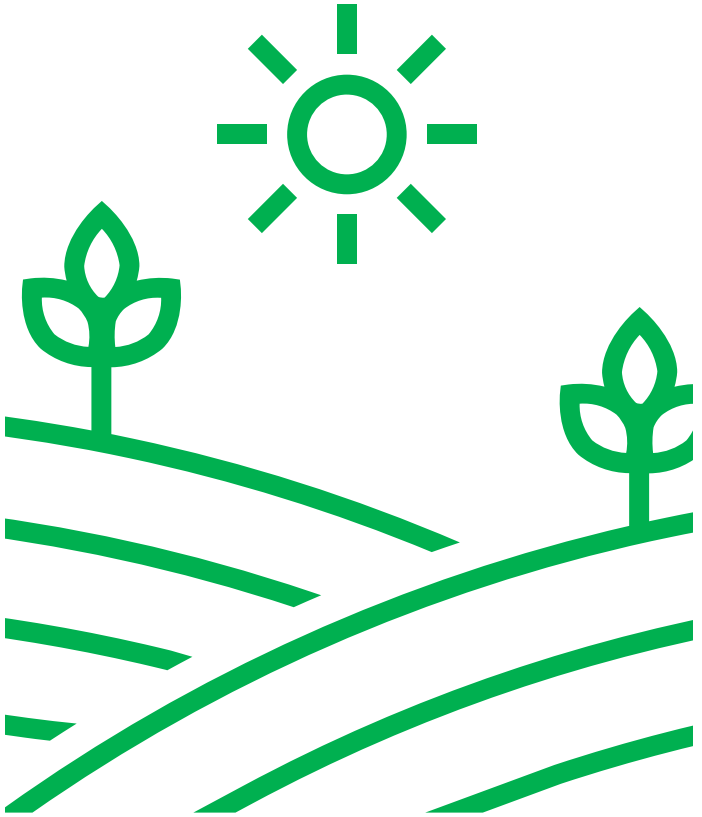
What is needed:

Go from knowledge learning goals to more skills and acting goals and activates

Student active and collaborative learning activities



Consensus Statement

AMEE Consensus Statement: Planetary health and education for sustainable healthcare

Emily Shaw, Sarah Walpole, Michelle McLean, Carmen Alvarez-Nieto, Stefi Barna, Kate Bazin,

...show all

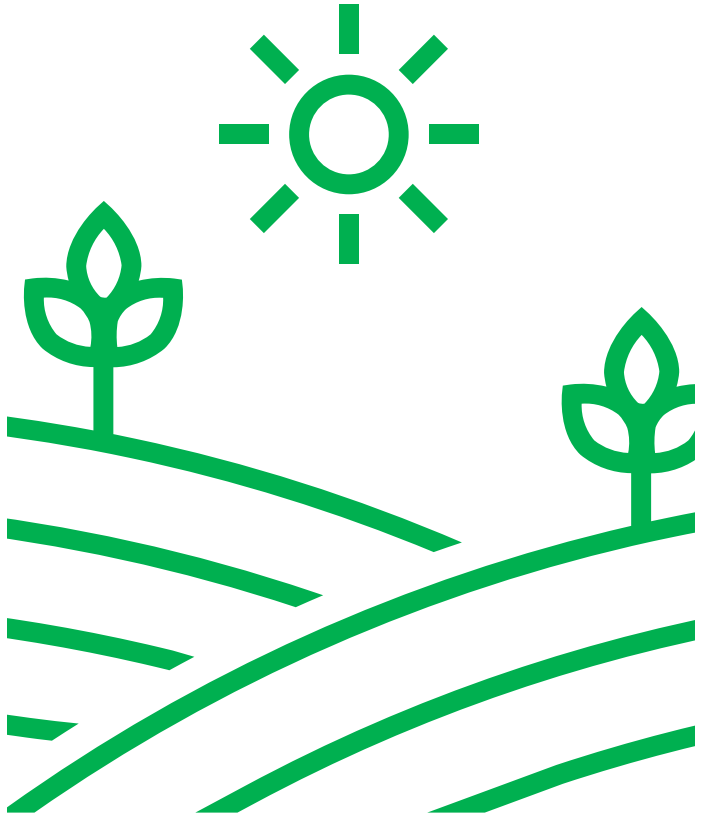
Pages 272-286 | Published online: 19 Feb 2021

SUSTAINABILITY EDUCATION IN NURSING - DALARNA UNIVERSITY

Research activities:

Following students' knowledge and attitudes towards sustainability and climate changes with SANS and interviews (2018-)

Collaborating with international groups – comparing and contrasting



MEASURING KNOWLEDGE AND ATTITUES

SANS

- The 'Sustainability Attitudes in Nursing Survey' (SANS_2) questionnaire (Richardson *et al*., 2014; Richardson *et al*., 2016).

- Research demonstrates greater awareness of the importance of sustainability and an increased ability to act as change agents at clinical placements (Richardson *et al*., 2019; Aronsson *et al*., 2020).

SANS – SUSTAINABILITY ATTITUDES IN NURSING QUESTIONNAIRE STATEMENTS:

- Climate change is an important issue for nursing
- Issues about climate change should be included in the nursing curriculum
- Sustainability is an important issue for nursing
- Sustainability should be included in the nursing and midwifery curriculum
- I apply sustainability principles at home

Richardson et al. (2016)

SOME RECENT RESEARCH

A Swedish qualitative study of student nurses' perceptions of climate change and sustainability.

- Students had a negative view of the future of humanity
- Students expressed that nurses are important actors in the work towards a sustainable society and healthcare system, but need more education (Anåker *et al.* 2021)

An international, multisite study quantitatively investigating nursing students' attitudes towards and awareness of climate change and sustainability and its inclusion in nurse education. Seven universities across 5 countries.

- Students held positive attitudes towards climate change and sustainability being included in their curriculum.
- No differences were found for SANS_2 Total scores among universities (Alvarez-Nieto *et al*. 2021)

A cross-national study qualitatively exploring nursing students' ability to challenge unsustainable practice in England and Sweden.

- Students in both countries identified lack of confidence as the main barrier to challenging unsustainable practice, followed by a resistance to change in practice.
- English students predominantly changed their own behaviour or influenced practice of others; Swedish students either changed their own behaviour or their own attitudes to sustainability (Aronsson *et al*. 2022)

INTERNATIONAL COLLABORATION

- Cross-European collaboration between universities with similar interests and expertise
- Creating, advancing and disseminating knowledge
- Research
- Teaching exchange
- Presentations in research groups and seminars

NURSING STUDENTS' AND EDUCATORS' UNDERSTANDING OF SUSTAINABILITY, CLIMATE CHANGE AND PLANETARY HEALTH: A CROSS-NATIONAL EXPLORATORY STUDY

Integrative review

- Systematic review of literature
- Research question:

  What is the awareness of and attitudes towards sustainability and climate change from the perspective of nursing students and educators?
- 26 primary studies included – only 5 are qualitative

Empirical study in two countries

- Interview-based
- To explore how nursing students and educators perceive the role of nurses in relation to the climate crisis and planetary health
- To explore the cultural underpinnings of such understanding
- To explore the motivators and barriers to action towards sustainability in personal and professional life

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School of Nursing and Midwifery

HÖGSKOLAN DALARNA

REFERENCES

- Richardson, J., Grose, J., Doman, M. and Kelsey, J. (2014) 'The use of evidence-informed sustainability scenarios in the nursing curriculum: development and evaluation of teaching methods', *Nurse Education Today*, 34, p. 490-93.
- Richardson J et al (2016) 'Including sustainability issues in nurse education: a comparative study of first year student nurses' attitudes in four European countries', *Nurse Education Today,* 37, pp.15-20.
- Jennie Aronsson, Anna Anåker, Marie Elf, Janet Richardson. Sustainability in clinical practice: a cross-national comparative study of nursing students," (JNE-2021-224R2, Research Brief), has been accepted for publication in the Journal of Nursing Education.
- Aronsson, J., Nichols, A., Warwick, P., & Elf, M. (2022). Awareness and attitudes towards sustainability and climate change amongst students and educators in nursing: A systematic integrative review protocol. Nursing Open, 9(1), 839-844.
- Álvarez-Nieto, C., Richardson, J., Navarro-Perán, M. Á., Tutticci, N., Huss, N., Elf, M., ... & López-Medina, I. M. (2022). Nursing students' attitudes towards climate change and sustainability: A cross-sectional multisite study. Nurse education today, 108, 105185.
- Anåker, A., Spante, M., & Elf, M. (2021). Nursing students' perception of climate change and sustainability actions–A mismatched discourse: A qualitative, descriptive exploratory study. Nurse Education Today, 105, 105028.
- McKimm, Judy, Redvers, Nicole, El Omrani, Omnia, Parkes, Margot W, Elf, Marie, Woollard, Robert (2020). Education for sustainable healthcare: Leadership to get from here to there. In: Medical teacher. Vol. 42, no 10, p. 1123-1127

REFERENCES

- Anna Anåker, Maria Nilsson, Åsa Rocklöv, Marie Elf. Nurses' perceptions of climate and environmental issues: A qualitative study. Journal of Advanced Nursing. Article first published online: 24 MAR 2015. DOI: 10.1111/jan.1 2655
- Shaw, E., Walpole, S., McLean, M., Alvarez-Nieto, C., Barna, S., Bazin, K., ... & Woollard, R. (2021). AMEE consensus statement: planetary health and education for sustainable healthcare. *Medical teacher*, *43*(3), 272-286.

Appendix 6: Ravi Dar's presentation

Pricing for 55. A Corporate Governance and Choice Architecture Approach to GHG Emission Mitigation and the Circular Economy

Project group: Ravi Dar, Asif Huq & Klas Sundberg

Un-sustainability

A reality that needs all and everyones' efforts to reverse

Global Projections and Records

- Crude oil: record demand by 2026 (104 million barrels per day)
- CO2 emissions: record levels 2018-2021, expected to rise (36.4 billion metric tons in 2021)
- CO2 concentration in atmosphere: record level in 2021 (416 ”parts per million)

- Projected cost of carbon offset per ton CO2 in 2030: 224 dollars
- Present cost of carbon offset per ton
  - in compliance markets (California 31 dollars, EU 83 euros)
  - in volutary markets: Aviation 4.8 dollars, Nature-based 11 dollars
- (sources: Statista & carboncredits.com)

Fit for 55

- European Union Green Deal
- 55% drop of GHG emissions by 2030
- The legislative and regulative structure to support/make possible a changed emission situation

- Increasing awareness among businesses. Referenced in annual reports and websites (SCA, SSAB, and more)
- But how can corporations and public agencies prepare to be fit for 55?

What is ”fit”?

- Fit:
  - Adjusted
  - Right shape (reactive)
  - Efficiency
  - Effectiveness?
  - Innovation?
  - Competitive?

- Fit
  - Ability
  - Great shape (proactive)
  - Efficiency
  - Effectiveness
  - Innovation
  - Competitive

Corporate Governance

- Governing the relationships with all stakeholders
- The organization can design a choice architecture in order to create financial decision making logics that correspond with non-financial strategies and objectives.
- Accounting for internal purposes has the freedom to count at will.
- Pricing internal resources and services allows strategic management

Managing through Accounting (Sustainability)

- Management Accounting
  - Traditionally focused on competitive business
  - Expanding into stakeholder analysis and interaction (Sustainability metrics)
  - Multiple operative goals (Triple bottom line)

- Strategic Management Accounting
  - Changing accounting practices
  - Changing measures and metrics
  - ”Immanent logic” (Chia and MacKay 2007)
  - Circular economy/Embedded economics

Management by Objectives (targets) and/or by Pricing?

Top Management Objectives and Decisions

- Strategy from above
- Objectives set, implementation left to operative levels
- Evaluation based on targets met or missed
- Emission volumes, major projects

Carbon Pricing in Choice Architecture

- Design in order to achieve changes
- The everyday of organizational and business choices
- Green Design (Sunstein & Reisch 2014)
- Internal pricing and standard costs

(Formal) Project Efforts

- Formas application Spring 2020:
  - Initial contacts with Energiintelligent Dalarna
  - Presentation, internal seminar HDa
  - Following regional collaboration; both industry and regional organization (Energiintelligent Dalarna): Rejected

- Participation at Neon 2021 conference in Lillehammar in November 2021, presented a concept paper *Pricing for 55: Can Corporate Climate Strategies be Implemented through Internal Pricing in Choice Architectures?*

Present Project Efforts

- Participation in book project with colleagues from Regnskapsklynge Norge and Inland Norway University on the Circular Economy and Financial Accounting. The chapter we are involved with is on management accounting and its relationship to both financial accounting and the circular economy.

Formas application 2022

Klimatomställning genom strategisk ekonomistyrning. Design i beslutssituationer för att minska växthusgasutsläpp och att utveckla den cirkulära ekonomin.

Climate Action through Corporate Governance and Strategic Management Accounting. A Choice Architecture Approach to Pricing for GHG Emission Mitigation and the Circular Economy

The Research application

- Proposed project components:
  - Literature review focused on the best practices of carbon calculations, estimations, pricing, and controlling mechanisms from the academic literature and from industry practices
  - Common practices of the above in the wider Swedish industry identifiable through annual sustainability reporting and similar sources.
  - Action research with case companies with an aim to provide in-depth analysis of the management practices and improve the common practices of carbon calculations, estimations, pricing, and controlling mechanisms.
  - Comparison of practices of the private sector with those of the public sector and create a platform to share the best-practices of the two sectors.

Appendix 7: Sara Svensson's presentation

THE GLOBAL GOALS
For Sustainable Development

TARGET 10.1

REDUCE INCOME INEQUALITIES

By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.

TARGET 10.2

PROMOTE UNIVERSAL SOCIAL, ECONOMIC AND POLITICAL INCLUSION

By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

TARGET 11.1

SAFE AND AFFORDABLE HOUSING

By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

TARGET 11.3

INCLUSIVE AND SUSTAINABLE URBANIZATION

By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

TARGET 16.6

DEVELOP EFFECTIVE, ACCOUNTABLE AND TRANSPARENT INSTITUTIONS

Develop effective, accountable and transparent institutions at all levels.

DALARNA UNIVERSITY

Agenda

- Project background
- Research idea and design
- Sub study 1
  - Research questions
  - Methods
  - Preliminary results

My background

- Bachelor's degree in Human Geography, spatial planning, Karlstad University
- Master´s degree in Human Geography, spatial planning, Uppsala University
- Worked as a spatial/urban planner in Gothenburg and Värmland

What is spatial/physical/urban/regional planning?

This Act contains provisions on the planning of land and water areas, and on construction. The purpose of the provisions is, with regard to the freedom of the individual, to promote societal progress with equal and proper living conditions and a clean and sustainable habitat, for people in to day's society and for future generations.

Planning and Building Act (2010:900) Section 1

Municipal community building process – Sve: Samhällsbyggnadsprocessen

Project background

Industrial PhD student

Research school: Future Proof Cities

PhD student at Mälardalen University, Work Life science

Employed at Borlänge Kommuns Förvaltnings AB

- Works at the Municipal Planning Department at Borlänge municipality

Supervisors:

- Susanna Toivanen, Professor Sociology Mälardalen University
- Roland Ahlstrand, Professor Work Science Dalarna University
- Tina Forsberg, Associate Professor Work Science Dalarna University
- Tony Svensson, Senior Lecturer Construction technology Dalarna University

Mentor:

- Louise Nordström, manager Department of Land and Physical Planning, Municipality of Borlänge

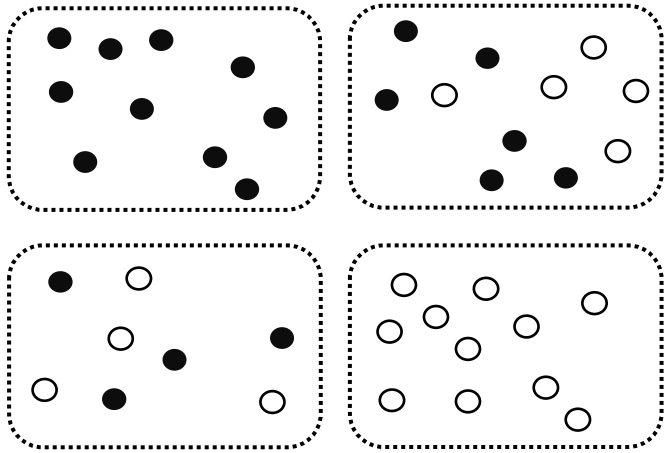
The problem

- Growing inequality (Scarpa, 2016)
  - Income (Liang, 2021)
  - Health (White et al., 2016)
  - Education (Trumberg & Urban, 2020)
  - Employment (Hedberg & Tammaru, 2012)
- Differences between residential areas
  - Neighbourhood effects (Musterd & Andersson, 2006)
  - Polarization (Grundström & Molina, 2016)

Research idea

Segregation as process and condition

- Segregation = ”division”
  - Demographic segregation
  - Socioeconomic segregation
  - Ethnical segregation
- Segregation on different arenas
  - Work places
  - Schools
  - Residential areas



Andersson, R., & Holmqvist, E. (2019). *Grannskapseffekter, politik och planering för minskad boendesegregation - Underlagsrapport till Jämlikhetskommissionen*. Uppsala: Jämlikhetskommissionen

Research on residential segregation

Process – causes	Effects	Policy/measures
Economic inequality	Growing inequality	Area based projects
Development housing market	Health differences	General welfare
Urban form	Stigmatization	Social mixing – tenure mix
Discrimination	Polarization	Urban design
Stigmatization		
Preferences (push and pull)		

Andersson, R., & Holmqvist, E. (2019). *Grannskapseffekter, politik och planering för minskad boendesegregation - Underlagsrapport till Jämlikhetskommissionen*. Uppsala: Jämlikhetskommissionen

Research idea

Public administration – Three perspectives

- The municipality as an organisation
  - Bureaucracy of today – fragmentation meet coordination (Montin, 2006)

- The municipality as an institution
  - Institutional logics (Freidland & Alford, 1991)
  - Multiple institutional logics (Fred et.al. 2020).

- Planning practice
  - Changed welfare regime and housing market (Holmqvist & Turner, 2014)
  - Neoliberal turn, governance and communicative planning (Gunder, 2010)

Aim and research question

Develop knowledge on the institutional conditions and organisation for work to reduce residential segregation in the municipal community planning process.

- How does Borlänge municipality work with issues related to residential segregation in the municipal community planning process?
- How is this work affected by institutional and organisational settings?

Research design

- Single case study
  - Look close enough to learn (Flyvberg 2006)
- Four sub studies

Focus	Analytical unit	Prel. time table
1: Framing the work	The organisation	2021-2022
2: The urban development project Jakobsdalen	The project	2021-2024
3: The planner	The professionals	2023
4: Dialogue	The task	2024

Project background

Being a part of the studied organisation – challenges and possibilities

Critical insider researcher (Johansson, 2008)

- Disensus (in contrast to consensus) is okay and even desirable!
- Transparency
- Trust and respect
- Closeness and planned distance
- Documentation and reflection
- Analytical height – critical theory

Current sub study

Framing the work to reduce segregation

Aim: Examine what the work to reduce segregation entails and how it is organised in the community building process in Borlänge municipality

Q1: What does the work to reduce segregation within the municipal community building process consist of? How is this work organised?

Q2:What hinders and enables work to reduce segregation within the municipal community building process?

Method

- Document studies
- Semi structured interviews
  - Officials involved with municipal community planning in different phases
  - Specialist social sustainability
  - Managers
  - Politicians
- Qualitative content analysis in Nvivo
  - Abduction & retroduction – Critical realism (Fletcher, 2017)

Current sub study

Preliminary results

Ideas about what the work could or should be from interviews:

- Proactive planning (Equal access to…)
- Dialogue in different forms
- Create a mix of people
- Design based on knowledge of social aspects
- Develop internal work procedures
- Compensating measures
- Reactive planning (contrast to proactive!)

Hindrance:
Lack of strategy and coordination
The characteristics of the planners
Economy and annual budget
Lack of knowledge
Symptoms of inequality itself

Enabler:
Personal commitment
National policy
Dialogue

Parallel institutional logics?

”We can´t do much about social aspects in planning”	”All we do in planning is related to social aspects”
Municipality = An organisation	Municipality = A geography
”Us and them”	”Us”
Control	Develop

To be continued…

Contribution to sustainability research

- Deep general understanding of one single case – to reduce the gap of practice and academic knowledge.
- Direct use – reflection upon decisions along the way

References

Andersson, R., & Holmqvist, E. (2019). *Grannskapseffekter, politik och planering för minskad boendesegregation - Underlagsrapport till Jämlikhetskommissionen*. Uppsala: Jämlikhetskommissionen

Fletcher, A. J. (2017). "Applying critical realism in qualitative research: methodology meets method." International journal of social research methodology **20**(2): 181-194.

Flyvbjerg, B. (2006). "Five Misunderstandings About Case-Study Research." Qualitative Inquiry **12**: 219-245.

Fred, M., et al. (2020). "Local government projectification in practice - a multiple institutional logic perspective." Local government studies 46(3): 351-370.

Friedland, R. and R. Alford (1991). "Bringing Society Back In: Symbols, Practices, and Institutional Contradictions."

Grundström, K. and I. Molina (2016). "From Folkhem to lifestyle housing in Sweden: segregation and urban form, 1930s–2010s." International Journal of Housing Policy 16(3): 316-336.

Gunder, M. (2010). "Planning as the ideology of (neoliberal) space." Planning theory (London, England) 9(4): 298-314.

Hedberg, C. and T. Tammaru (2012). "'Neighbourhood Effects' and 'City Effects': The Entry of Newly Arrived Immigrants into the Labour Market." Urban Studies 50(6): 1165-1182.

Holmqvist, E. and L. M. Turner (2014). "Swedish welfare state and housing markets: under economic and political pressure." Journal of Housing and the Built Environment **29**(2): 237-254.

Liang, C.-Y. (2021) Inkomstojämlikhet och Boendesegregation. SNS Analys **71**,

Montin, S. (2006). "Between Fragmentation and Coordination." Public Management: An International Journal of Research and Theory 2(1): 1-24.

Musterd, S. and R. Andersson (2006). "Employment, Social Mobility and Neighbourhood Effects: The Case of Sweden." International Journal of Urban and Regional Research 30(1): 120-140.

Scarpa, S. (2016). "Looking beyond the neighbourhood: income inequality and residential segregation in Swedish metropolitan areas, 1991-2010." Urban geography **37**(7): 963-984.

Trumberg, A., & Urban, S. (2020). School Choice and Its Long-Term Impact on Social Mobility in Sweden. Scandinavian Journal of Educational Research

White, J. S., et al. (2016). "Long-term effects of neighbourhood deprivation on diabetes risk: quasi-experimental evidence from a refugee dispersal policy in Sweden." The lancet. Diabetes & endocrinology **4**(6): 517.

DALARNA UNIVERSITY

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Appendix 8: David Gray's presentation

‘My Job Is to Take Care of You’: Intergenerational Environmental Justice in Contemporary Fiction

David Gray, English

HÖGSKOLAN DALARNA

Literature, literary studies and climate change

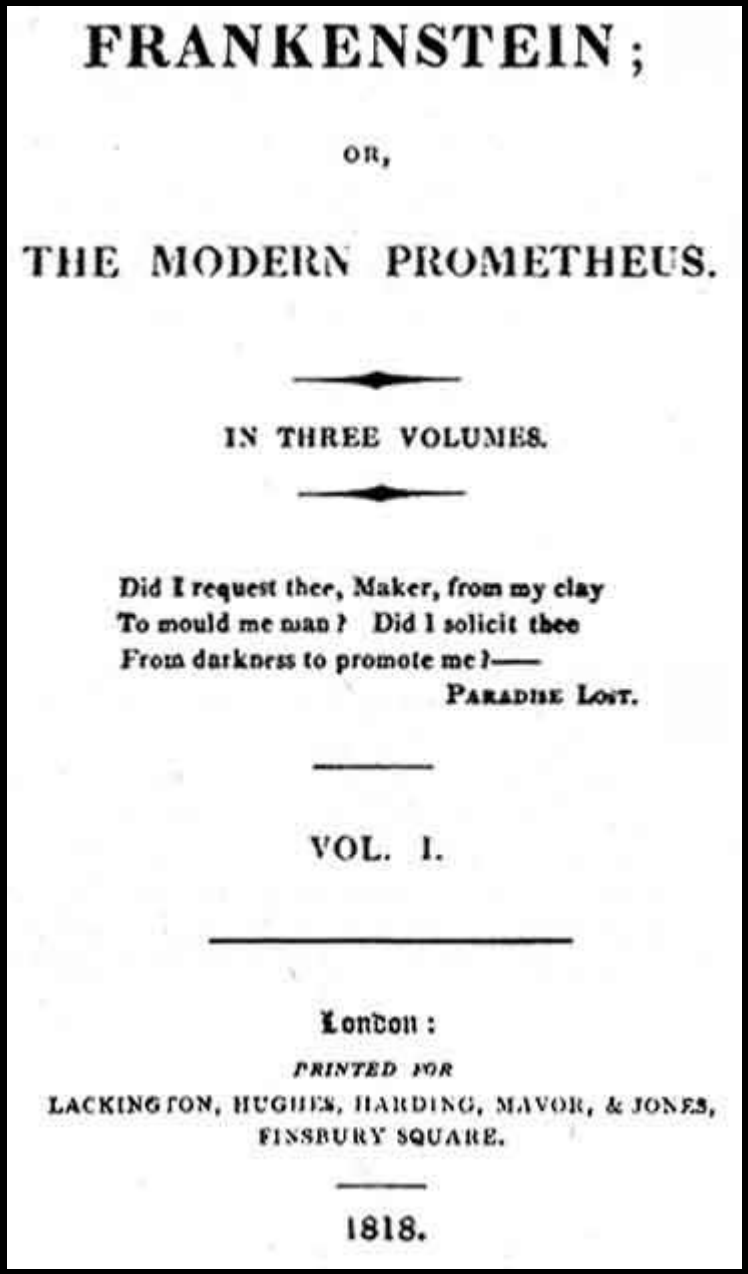
- Literary Studies – ecocriticism
- Climate change, climate-change criticism & “Cli-fi”
- Intergenerational environmental justice in contemporary fiction – have we cared enough?

John Constable oil painting, 'Weymouth Bay with Approaching Storm' in 1816. (Courtesy Victoria and Albert Museum, London)

“The year without a summer” - 1816

Lord Byron, “Darkness”, 1816

They fell and faded—and the crackling trunks
Extinguish'd with a crash—and all was black.
The brows of men by the despairing light
Wore an unearthly aspect, as by fits
The flashes fell upon them; some lay down
And hid their eyes and wept; and some did rest
Their chins upon their clenched hands, and smil'd;
And others hurried to and fro, and fed
Their funeral piles with fuel, and look'd up
With mad disquietude on the dull sky,
The pall of a past world; and then again
With curses cast them down upon the dust,
And gnash'd their teeth and howl'd: the wild birds shriek'd
And, terrified, did flutter on the ground,



FRANKENSTEIN;

OR,

THE MODERN PROMETHEUS.

IN THREE VOLUMES.

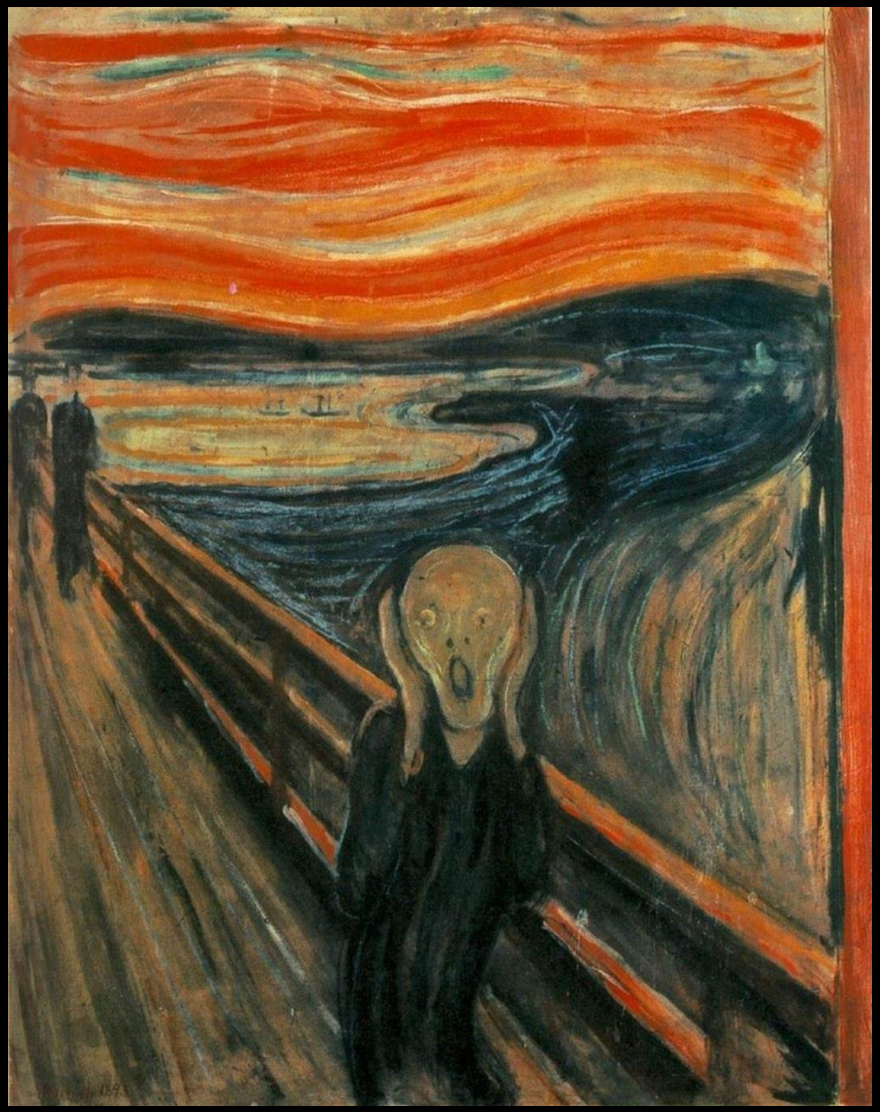
Did I request thee, Maker, from my clay
To mould me man? Did I solicit thee
From darkness to promote me?—
PARADISE LOST.

VOL. I.

London:
PRINTED FOR
LACKINGTON, HUGHES, HARDING, MAVOR, & JONES,
FINSBURY SQUARE.

1818.

Mary Shelley’s *Frankenstein* (1818)



The Scream (1893), an expressionist painting by Edvard Munch.

Origins: “Living with the Weather”

- Lord Bryon’s post-apocalyptic poem “Darkness” (1816)
- Mary Shelley’s *Frankenstein* (1818)
- John Constable

- Kuhnian-paradigm shift:
  - “Cold War Criticism is dying, Global Warming Criticism is about to be born”. (Bate, “Living with the Weather”, 1996).
- “Ecocriticism is a broad way for literary and cultural scholars to investigate the global ecological crisis through the intersection of literature, culture, and the physical environment.” (“Ecocriticism”, *Oxford Bibliographies*)

"Ecocriticism". In *obo* in Literary and Critical Theory. 31 May. 2022. https://www.oxfordbibliographies.com/view/document/obo-9780190221911/obo-9780190221911-0014.xml .

Literature and Climate Change

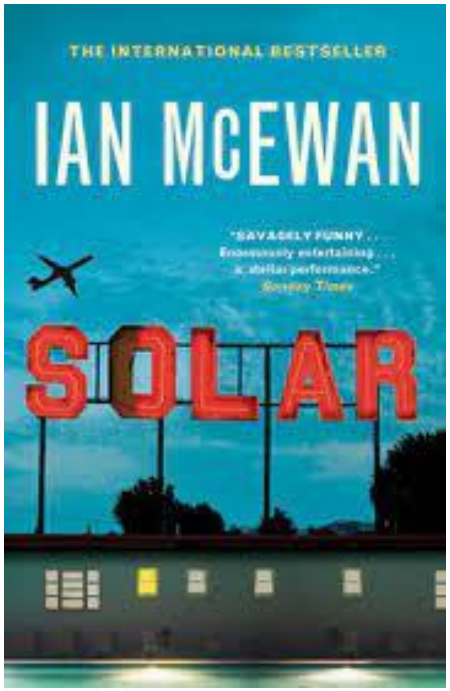
- Apocalyptic narratives
- Post-apocalyptic
- Dystopian fiction

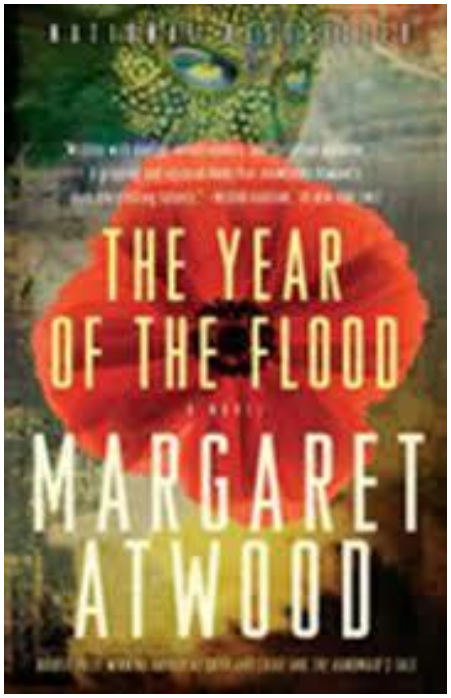
20th Century fiction

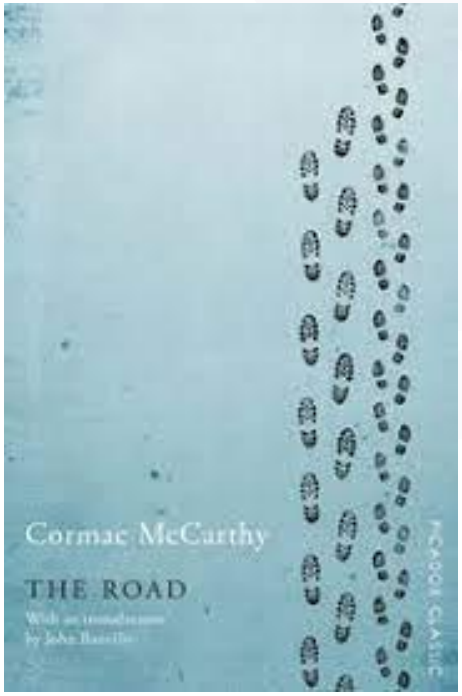
- Science fiction
  - Nuclear war, zombies, aliens, pandemics, terraforming
- Speculative fiction
  - Future history

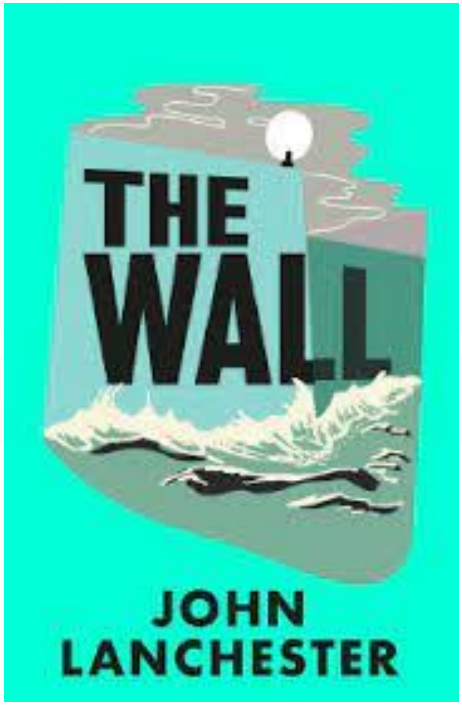
- 20th Century environmentalism
- Threat of Nuclear War
- Global Warming of the Planet
- Climate change scenarios (IPCC)

Climate Change Fiction (Cli-fi)









Margaret Atwood, *Oryx and Crake* (2003)
Kim Stanley Robinson, *Fifty Degrees Below* (2005)
Cormac McCarthy, *The Road* (2006)
Jeanette Winterson, *The Stone Gods* (2007)
Paolo Bacigalupi, *The Windup Girl* (2009)
Ian McEwan, *Solar* (2010)
John Lanchester, *The Wall* (2019)

HÖGSKOLAN DALARNA

Intergenerational Justice

Intergenerational justice: “moral considerations should guide those currently alive in relating to both past and future people” (Intergenerational Justice, 2021).

Our Common Future (1987): “meet the needs of the present without compromising the ability of future generations to meet their own needs” (p. 43).

Have we cared enough?

…at the heart of climate-change discourse resides an anxiety about whether we have cared enough, not just about and for each other and the planet but about and for the future. It is, furthermore, children who—not unproblematically—serve as shorthand for the future and therefore as a particularly emotive marker of the problem of climate change.

[…] environmental responsibility for the future as a question of one's responsibility for one's children

(Johns-Putra 2016, p. 520; 524)

The Road, 2009

Children-as-future

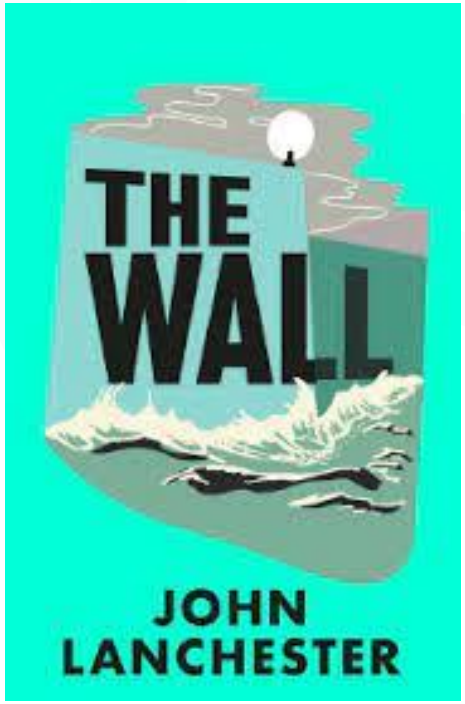
- James Hansen's *Storms of my Grandchildren* (2009)
- Barack Obama's speech at the United Nations Climate Change Conference COP21 (2015)
- AL Gore, *An Inconvenient Truth* (2006)
- Leonardo DiCaprio, *Before the Flood* (2016)
- Emmanuel Macron, speech to Congress, Capitol Hill, 2018
- Greta Thunberg, speech to the United Nations at the Climate Change COP24 conference (2018)

Generation Z - “Greta Generation”

Maybe they will ask why you didn’t do anything while there still was time to act. You say you love your children above all else, and yet you are stealing their future in front of their very eyes. (Thunberg, 2018)

John Lanchester's *The Wall* (2019)

None of us can talk to our parents. By 'us' I mean my generation, people born after the Change. […] Everyone knows what the problem is. The diagnosis isn't hard - the diagnosis isn't even controversial. It's guilt: mass guilt, generational guilt. The olds feel they irretrievably fucked up the world, then allowed us to be born into it. You know what? It's true. That's exactly what they did. They know it, we know it. Everybody knows it. (Lanchester 2019, p. 55)



In the UK, around seven in 10 of all generations surveyed say climate change, biodiversity loss and other environmental issues are big enough problems that they justify significant changes to people's lifestyles, with the oldest generation surveyed – Baby Boomers (74%) – slightly more likely than the others to feel this way. (Duffy 2021)

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