

# Key figures of strategic research 2015-2019

13

themes

14

programmes

57

projects

some **260**  
million euros  
in research  
funding

## Solutions from science

### Strategic research

- ▶ research with societal relevance and impact
- ▶ excellent research
- ▶ solution-oriented research
- ▶ builds on dialogue between researchers and those who need research-based knowledge

### The strategic research council (SRC)

- ▶ proposes annually topical research themes to the Government
- ▶ launches research programmes based on the themes decided by the Government
- ▶ selects the projects to be funded based on societal relevance, impact and scientific quality
- ▶ monitors the funded projects and assesses their impact
- ▶ operates at the Academy of Finland

Read more and subscribe to our newsletter:



[strateginentutkimus.fi](mailto:strateginentutkimus.fi)



[@Akatemia\\_STN](https://twitter.com/Akatemia_STN)

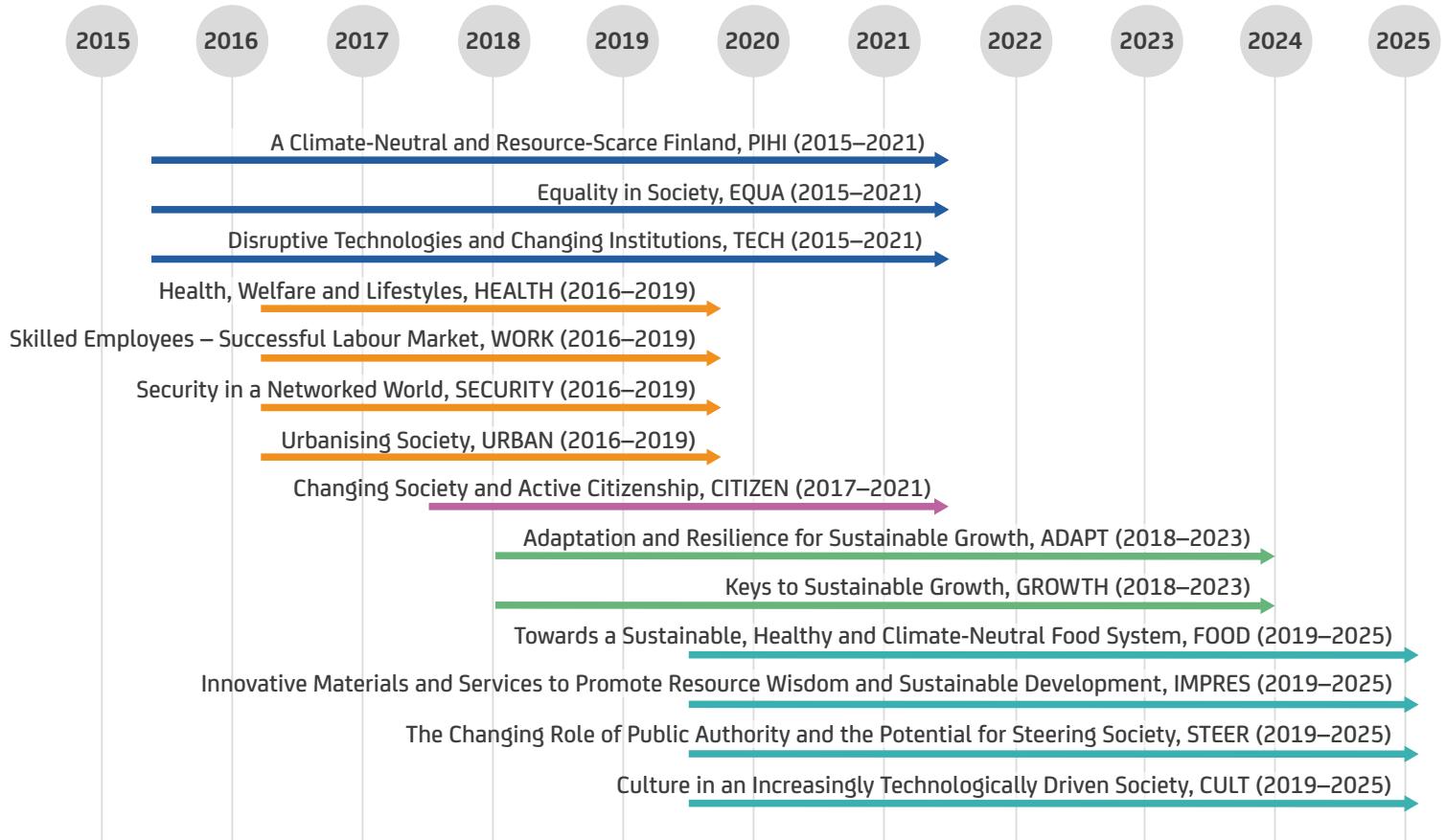
[#strategicresearch](https://twitter.com/Akatemia_STN)



strategicRESEARCH



# SRC programmes



# 1

Wicked problems can be tackled through experimentation and dialogue, supported by deeper understanding of uncertainties



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

**All efforts to deal with major societal questions from addressing climate change to reshaping social security face deep uncertainties with respect to the outcomes and effects. Societies can identify acceptable pathways of change by encouraging actors to understand and confront uncertainties through experimentation and dialogues.**

- ▶ Simulation exercises address urgent decision-making during socio-environmental disruptions and accommodate conflicting long-term future developments. The simulations link research-based knowledge more closely to the governance of uncertain futures and strengthen the capabilities of policy-makers to prepare for and react to disruptions. **(WISE)**
- ▶ Along with co-created policy recommendations, transformative pathways identified in specifically designed transition arenas provide a base for navigation towards sustainability. **(SET, BlueAdapt)**
- ▶ Experimentation creates the base for wider system-level changes. Experimentation can also identify new opportunities for large and small enterprises to create jobs and support export of fair solutions to serious problems. **(BCDC Energy, EL-TRAN, SET)**

# 1



## More information



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

### WISE

Creative Adaptation to Wicked Socio-Environmental Disruptions

 [wiseproject.fi/en](https://wiseproject.fi/en)  [@wiseprojectfi](https://twitter.com/wiseprojectfi)

### SET

Smart Energy Transition

 [smartenergytransition.fi/en/front-page/](https://smartenergytransition.fi/en/front-page/)  [@SET\\_Project\\_FI](https://twitter.com/SET_Project_FI)

### BlueAdapt

Enhancing Adaptive Capacity for Sustainable Blue Growth

 [blueadapt.fi/en/project-info/](https://blueadapt.fi/en/project-info/)  [@BlueAdapt](https://twitter.com/BlueAdapt)

### BCDC Energy

Cloud Computing as an Enabler of Large Scale Variable Distributed Energy Solutions

 [bcdcenergia.fi/en/](https://bcdcenergia.fi/en/)  [@bcdcenergia](https://twitter.com/bcdcenergia)

### EL-TRAN

Transition to a Resource Efficient and Climate Neutral Electricity System

 [el-tran.fi/in-english/](https://el-tran.fi/in-english/)  [@Eltranteam](https://twitter.com/Eltranteam)



# 2

## Transition to circular economy is possible



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

**In circular economy, resources and materials are in long-term economic use while their negative environmental effects are minimised. Finland has promoted a circular economy nationally and globally and has been active in developing novel technological innovations for it. Strategic research shows that a transition to a circular economy requires a combination of technological solutions, digitalisation, open data, an enabling policy environment, and regulation.**

- ▶ Sustainable solutions, based on recyclable and biodegradable cellulose materials and new food delivery, consumption and recycling concepts are central in finding solutions to the plastic problem in food packaging. These solutions can only be commercialised if regulation, novel information and political guidance all support the same goals. **(Package-Heroes)**
- ▶ Residual drugs in sewage sludge are problematic for the safe circular economy. Analysis on the impacts of sewage sludge processing methods for residual drugs improve the acceptance of the sewage sludge use and enhance the recycling of the nutrients. **(SUDDEN)**
- ▶ Novel technological solutions, business models, cultural changes and new regulation act as catalysts for circular economy by creating preconditions for the radical changes needed in consumption and production. **(CICAT2025)**

# 2

## More information



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

### Package-Heroes

New packaging solutions for people, planet and business

 [packageheroes.fi/en/](https://packageheroes.fi/en/)  [@PackageHeroes](https://twitter.com/PackageHeroes)



### SUDDEN

Sustainable Drug Discovery and Development with End-of-Life Yield

 [sudden.fi/en/](https://sudden.fi/en/)  [@SUDDENresearch](https://twitter.com/SUDDENresearch)

### CICAT2025

Circular Economy Catalysts: From Innovation to Business Ecosystems

 [cicat2025.fi/en/](https://cicat2025.fi/en/)  [@CICAT2025](https://twitter.com/CICAT2025)



# 3

**Progressing urbanisation requires innovative solutions that simultaneously address social, climate and resource issues**



**CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY**

**Urbanisation is progressing rapidly throughout Europe and globally. The concept of fair transitions to more sustainable lifestyles is important in developing and reviving urban areas and institutions.**

- ▶ New tools and concepts help land use and city planning to design urban forms that enable low emission mobility. Infrastructures and low emission modes of transport are key. **(URMI, BEMINE, COMBAT/Pointcloud)**
- ▶ Smart technologies need to be developed and deployed by engaging citizens and by recognising the daily practices that ultimately affect the possibilities to reduce emissions. **(DAC, BCDC Energy)**
- ▶ Cities and urban areas are sites for social and technological experimentation at the grass-roots level. The experimentation empowers citizens and can highlight where policy development is needed to support innovative solutions. **(BCDC Energy, DAC, EL-TRAN, SET)**

# 3

## More information



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY



### URMI

Urbanization, Mobilities and Immigration

 [urmi.fi/en/](https://urmi.fi/en/)  [@URMI\\_team](https://twitter.com/URMI_team)



### BEMINE

Beyond MALPE coordination: Integrative Envisioning

 [bemine.fi/in-english/](https://bemine.fi/in-english/)  [@bemine\\_project](https://twitter.com/bemine_project)

### COMBAT/Pointcloud

Competence-Based Growth Through Integrated Disruptive Technologies

 [pointcloud.fi/in-english/](https://pointcloud.fi/in-english/)  [@pointcloudfi](https://twitter.com/pointcloudfi)

### DAC

Dwellers in Agile Cities

 [agilecities.fi/en/](https://agilecities.fi/en/)  [@agile\\_dweller](https://twitter.com/agile_dweller)

### BCDC Energy

Cloud Computing as an Enabler of Large Scale Variable Distributed Energy Solutions

 [bcdcennergia.fi/en/](https://bcdcennergia.fi/en/)  [bcdcennergia](https://twitter.com/bcdcennergia)

### EL-TRAN

Transition to a Resource Efficient and Climate Neutral Electricity System

 [el-tran.fi/in-english/](https://el-tran.fi/in-english/)  [@Eltranteam](https://twitter.com/Eltranteam)

### SET

Smart Energy Transition

 [smartenergytransition.fi/en/front-page/](https://smartenergytransition.fi/en/front-page/)  [@SET\\_Project\\_FI](https://twitter.com/SET_Project_FI)





# 4

Land use and land-use change play increasingly important roles in mitigating climate change, and are also highly significant for biodiversity



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

The 2019 IPCC Special Report on Climate Change and Land highlights the importance of land and land use not only for climate change mitigation but also for the preservation of biodiversity, adaptation to climate change and the production of food. Land use and land-use change cannot be approached from a single perspective. Strategic research highlights how different aspects can be brought together to support sustainable solutions.

- ▶ Regulatory tools are being developed to simultaneously increase carbon sequestration as well as carbon stocks in forests and products in order to ensure diverse and sustainable use of forests for human needs and the conservation of biodiversity. **(Forbio, SOMPA, IBC-Carbon)**
- ▶ Geographical information is used in new land-use planning tools that support the balancing of different objectives in forest management, including the preservation of biodiversity and ecosystem services. **(IBC-Carbon, COMBAT/Pointcloud)**
- ▶ By optimising the water management of peatland forests their greenhouse gas (GHG) emissions can be reduced while maintaining the good growth of the trees. Novel agricultural practices (i.e. paludiculture) are needed in order to reduce high GHG emissions of croplands on peat soils. **(SOMPA)**
- ▶ New crop species and other protein sources such as mushrooms and insects can improve food and nutrition security and create new business opportunities. **(ScenoProt)**

# 4

## More information



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

### FORBIO

Sustainable, Climate-Neutral and Resource-Efficient Forest-Based Bioeconomy

 [uef.fi/en/web/forbio](https://uef.fi/en/web/forbio)  [@FORBIOproject](https://twitter.com/FORBIOproject)

### SOMPA

Novel Soil Management Practices - Key for Sustainable Bioeconomy and Climate Change Mitigation

 [luke.fi/sompa/en/](https://luke.fi/sompa/en/)  [@stnSOMPA](https://twitter.com/stnSOMPA)

### IBC-Carbon

Integrated Biodiversity Conservation and Carbon Sequestration in the Changing Environment

 [ibccarbon.fi/en-US](https://ibccarbon.fi/en-US)  [@IBCCarbon](https://twitter.com/IBCCarbon)

### COMBAT/Pointcloud

Competence-Based Growth Through Integrated Disruptive Technologies

 [pointcloud.fi/in-english/](https://pointcloud.fi/in-english/)  [@pointcloudfi](https://twitter.com/pointcloudfi)

### ScenoProt

Novel Protein Sources for Food Security and Climate

 [luke.fi/scenoprot/en/](https://luke.fi/scenoprot/en/)  [@scenoprot](https://twitter.com/scenoprot)



# 5

## A blue economy can contribute to a sustainable reduction of the carbon footprint



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

**The sea and inland waters provide possibilities for generating low carbon renewable energy and food as well as other ecosystem services that facilitate the transition to a resource efficient low-carbon economy.**

- ▶ Research examining the impacts of climate change are necessary for marine spatial planning that aims at maintaining ecosystem services supporting the sustainable use of the sea. **(SmartSea)**
- ▶ New concepts of off-shore platforms can become a base for delivering energy and other services for a low carbon economy. **(SmartSea)**
- ▶ Aquaculture and the development of food from fish species that currently are little exploited can significantly reduce the carbon footprint of food consumption. **(SmartSea)**

# 5

## More information



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

### SmartSea

Gulf of Bothnia as Resource for Sustainable Growth



[smartsea.fmi.fi/](https://smartsea.fmi.fi/)



[@SmartSeaProject](https://twitter.com/SmartSeaProject)



# 6

## Energy security and flexibility require rethinking in energy systems largely based on renewable energy sources



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

**The transition to low carbon energy is progressing fast, but it creates new technical, political, social and economic challenges for the energy system. Strategic research highlights possible and necessary transition pathways towards increasing energy security and affordable energy.**

- ▶ New information and communication technologies make it possible to increase flexibility in energy consumption and to manage storage of heat and electricity effectively. Flexible switching between heat and electricity facilitate a large share of intermittent energy production in the system. **(BCDC Energy, EL-TRAN, SET)**
- ▶ By further increasing the share of industrial consumers that adjust their consumption flexibly to the energy production the stability of energy system can be improved. For example, heavy machinery in the manufacturing industry provides several opportunities for demand side management. **(EL-TRAN, SET)**
- ▶ It is necessary to explore and test different pricing models in the electricity market, because the changes caused by the increasing intermittent power production require changes in the governance of energy. **(BCDC Energy, EL-TRAN, SET)**
- ▶ Batteries can stabilise the electricity grid and safeguard critical infrastructure. This calls for adequate production and an efficient circular economy for batteries. **(CloseLoop)**

# 6

## More information



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

### BCDC Energy

Cloud Computing as an Enabler of Large Scale Variable Distributed Energy Solutions

 [bcdcenergia.fi/en/](https://bcdcenergia.fi/en/)  [@bcdcenergia](https://twitter.com/bcdcenergia)

### EL-TRAN

Transition to a Resource Efficient and Climate Neutral Electricity System

 [el-tran.fi/in-english/](https://el-tran.fi/in-english/)  [@Eltranteam](https://twitter.com/Eltranteam)

### SET

Smart Energy Transition

 [smartenergytransition.fi/en/front-page/](https://smartenergytransition.fi/en/front-page/)  [@SET\\_Project\\_FI](https://twitter.com/SET_Project_FI)

### CloseLoop

Closing the Loop for High-Added-Value Materials

 [closeloop.fi/en/](https://closeloop.fi/en/)  [@CloseLoopTeam](https://twitter.com/CloseLoopTeam)



# 7

## Stakeholders change energy and resource management and governance



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

Numerous surveys show that citizens, businesses, municipalities and other stakeholders actively search for more sustainable solutions in energy consumption and production and in the governance of natural resources. Societies and communities that create the institutional framework for stakeholder engagement will benefit from participatory action.

- ▶ By supporting the establishment of energy communities and encouraging experimentation societies and communities can speed up sustainable energy transitions. (BCDC Energy, SET, EL-TRAN)
- ▶ Challenges in natural resource governance can be solved by co-creation practices in which knowledge and solutions are created jointly by diverse groups of stakeholders. (CORE, WISE)
- ▶ Systematic and facilitated workshops that focus on societal change bringing together representatives of the administration, businesses, civil society and research have identified new pathways for developing the sustainable use of water and mineral resources. (BlueAdapt, CloseLoop)

# 7



## More information



CLIMATE CHANGE,  
NATURAL  
RESOURCES  
AND ENERGY

### BCDC Energy

Cloud Computing as an Enabler of Large Scale Variable Distributed Energy Solutions

 [bcdcenergia.fi/en/](https://bcdcenergia.fi/en/)  [@bcdcenergia](https://twitter.com/bcdcenergia)

### SET

Smart Energy Transition

 [smartenergytransition.fi/en/front-page/](https://smartenergytransition.fi/en/front-page/)  [@SET\\_Project\\_FI](https://twitter.com/SET_Project_FI)

### EL-TRAN

Transition to a Resource Efficient and Climate Neutral Electricity System

 <https://el-tran.fi/in-english/>  [@Eltranteam](https://twitter.com/Eltranteam)

### CORE

Collaborative Remedies for Fragmented Societies

 [collaboration.fi/EN](https://collaboration.fi/EN)  [@core\\_STN](https://twitter.com/core_STN)



### CloseLoop

Closing the Loop for High-Added-Value Materials

 [closeloop.fi/en/](https://closeloop.fi/en/)  [@CloseLoopTeam](https://twitter.com/CloseLoopTeam)



### WISE

Creative Adaptation to Wicked Socio-Environmental Disruptions

 [wiseproject.fi/en](https://wiseproject.fi/en)  [@wiseprojectfi](https://twitter.com/wiseprojectfi)

### BlueAdapt

Enhancing Adaptive Capacity for Sustainable Blue Growth

 [blueadapt.fi/en/project-info/](https://blueadapt.fi/en/project-info/)  [@BlueAdapt](https://twitter.com/BlueAdapt)





# 8

## The most universal early childhood education and care system (ECEC) with unequal outcomes?



WELFARE  
AND BASIC  
SECURITY

The subjective right to public ECEC in Finland is among the most universal and strongest ones in the world. However, the take up ratio is mediocre and socioeconomically biased. ECEC services are considered to be an important factor in reducing biased outcomes in adulthood. A good ECEC systems helps to break the inter-generational transmission of social disadvantages. Results from the Strategic Research show that:

- ▶ Social and cultural services are an investment in knowledge and wider wellbeing. (ArtsEqual)
- ▶ Social investment perspective must be more strongly adopted as a starting point in educational policies. (TITA)
- ▶ Participation in ECEC is linked to higher propensity to continue education to the secondary level. (TITA)
- ▶ Art education strengthens social inclusion, learning skills and reduces behavioural problems. Promoting inclusion requires stronger institutional policies to facilitating participation of all, regardless of age, gender, sexual orientation, language, disability, ethnic, religious or socio-economic background. (ArtsEqual)
- ▶ Universal child-care and progressive family policies allow both fathers and mothers equally be parents and equally participate in employment. (CHILDCARE, WeAll)

# 8


## More information



WELFARE  
AND BASIC  
SECURITY

### CHILDCARE

Finnish Childcare Policies: In/Equality in Focus

 [jyu.fi/childcare/en/](https://jyu.fi/childcare/en/)  [@CCtutkimus](https://twitter.com/CCtutkimus)

### TITA

Tackling Inequalities in Time of Austerity

 [blogit.utu.fi/tita](https://blogit.utu.fi/tita)  [@TITAconsortium](https://twitter.com/TITAconsortium)

### WeAll

Social and Economic Sustainability of Future Worklife: Policies, Equalities and Intersectionalities in Finland

 [weallfinland.fi/en/home/](https://weallfinland.fi/en/home/)  [@WeAllFinland](https://twitter.com/WeAllFinland)

### ArtsEqual

Arts as Public Service: Strategic Steps towards Equality

 [artsequal.fi/en](https://artsequal.fi/en)  [@ArtsEqual](https://twitter.com/ArtsEqual)



# 9

## Social investment - Renewal of education systems



WELFARE  
AND BASIC  
SECURITY

According to the first PISA results, education skill performance and variations between children from different backgrounds were the smallest ones in Finland. However, the later surveys depict declining trends and growing disparities between regions and between girls and boys. Furthermore, the share of NEETS (not in education, employment or training) in Finland is alarmingly high. There also is a strong social gradient in education: 40% of the children in the highest income quartiles and 70% of the children in the lowest do not continue to universities.

- ▶ National assessments of learning outcomes in all subjects should be adopted to provide schools comparable data for evaluation. **(Oma Linja)**
- ▶ In the multicultural and multilingual society teachers need training for human rights, multicultural education and communication and also for bi- and multi-lingualism. **(ArtsEqual, ALL-YOUTH)**
- ▶ Equal participation in the arts education strengthens social integration and diminishes social polarisation. Integration requires stronger policies and new practices to facilitate participation of all, regardless of age, gender, sexual orientation, language, disability, ethnic, religious or socio-economic background. **(ArtsEqual)**
- ▶ New methodologies that change the structures of the society in a way that make it for young people possible to participate in it. **(ALL-YOUTH)**
- ▶ Schools should invest more in coaching and empowering. In particular, this is crucial in transitions between different levels of education. **(Oma Linja)**
- ▶ Accessible and affordable education enhances possibilities to intergenerational income mobility. **(WIP)**

# 9



## More information



WELFARE  
AND BASIC  
SECURITY

### Oma linja

Preventing Social Exclusion: What Works and Why?

 [omalinja.fi/in-english/](https://omalinja.fi/in-english/)  [@omalinja](https://twitter.com/omalinja)

### ALL-YOUTH

All Youth Want to Rule their World

 [allyouthstn.fi/en/all-youth-2/](https://allyouthstn.fi/en/all-youth-2/)  [@AllYouthKaikki](https://twitter.com/AllYouthKaikki)

### WIP

Work, Inequality and Public Policy

 [stn-wip.fi/en/](https://stn-wip.fi/en/)  [@WIPconsortium](https://twitter.com/WIPconsortium)

### ArtsEqual

Arts as Public Service: Strategic Steps towards Equality

 [artsequal.fi/en](https://artsequal.fi/en)  [@ArtsEqual](https://twitter.com/ArtsEqual)



# 10

## Combating social inequalities



WELFARE  
AND BASIC  
SECURITY

**Gender and income inequalities are the root causes of many other social inequalities. To prevent the growth of social income inequalities and to reduce poverty are the key objectives in both Finnish and EU-level policies. Equality, on the other hand, enables things that have a positive impact on human, social and economic sustainability. To promote equality, actions are needed in all areas of social life.**

- ▶ In equal societies intergenerational income mobility is higher than in unequal ones. Reducing present day inequality enhances equality in future. **(WIP)**
- ▶ People in countries with large income disparities and widespread poverty experience more fear of crime and have lower trust in institutions and their fellow citizens. **(TITA)**
- ▶ The effective ways to reduce inequalities include fairer tax policies, income security combined with social, employment and health care services. **(WIP, BIBU, PROMEQ)**
- ▶ Measures should be taken to promote labour force participation among those 50+ years of age, highly educated immigrant women and those women with less or no education. **(WeALL)**
- ▶ Universal child-care and progressive family policies allow both fathers and mothers equally be parents and equally participate in employment. **(CHILDCARE, WeAll)**

# 10

More  
information



WELFARE  
AND BASIC  
SECURITY

## WIP

Work, Inequality and Public Policy

 [stn-wip.fi/en/](https://stn-wip.fi/en/)  [@WIPconsortium](https://twitter.com/WIPconsortium)

## TITA

Tackling Inequalities in Time of Austerity

 [blogit.utu.fi/tita](https://blogit.utu.fi/tita)  [@TITAconsortium](https://twitter.com/TITAconsortium)



## BIBU

Tackling Biases and Bubbles in Participation

 [bibu.fi/en/](https://bibu.fi/en/)  [@BIBUresearch](https://twitter.com/BIBUresearch)

## PROMEQ

Inclusive Promotion of Health and Wellbeing

 [uef.fi/en/web/uef-vaikuttavuuden-talo/promeq](https://uef.fi/en/web/uef-vaikuttavuuden-talo/promeq)  [@Promeq\\_hanke](https://twitter.com/Promeq_hanke)

## WeAll

Social and Economic Sustainability of Future Worklife: Policies, Equalities and Intersectionalities in Finland

 [weallfinland.fi/en/home/](https://weallfinland.fi/en/home/)  [@WeAllFinland](https://twitter.com/WeAllFinland)

## CHILDCARE

Finnish Childcare Policies: In/Equality in Focus

 [jyu.fi/childcare/en/](https://jyu.fi/childcare/en/)  [@CCtutkimus](https://twitter.com/CCtutkimus)



# 11

## Experimental culture



WELFARE  
AND BASIC  
SECURITY

The Finnish government launched a concept of 'experimental culture' and established a special division for that in the Prime Minister's office. There are small-scale, medium-size and nation-wide experiments in progress to support evidence-based policies. The most famous one is the Basic income experiment. There are several lessons learnt from the experiments.

- ▶ The interaction between policy and research needs to be strengthened. Researchers should be more closely involved in the early stages of the political process. (APEX, TITA, PROMEQ, SET, WIP)
- ▶ Experiments testing cost-effectiveness of different policy measures should be encouraged. (APEX, PROMEQ)
- ▶ Sufficient time should be reserved for planning, conducting and evaluating field-experiments. Poorly designed, inadequately resourced ad hoc experiments do not produce reliable results. (TITA, WIP)
- ▶ Time and resources are needed after the project for the long-term implementation of the results of the experiments. (APEX, PROMEQ)
- ▶ Funding must be provided for wider use of experiments. Implementation research and follow-up funding after the experiments spread the good and tested practices. (APEX)

# 11

## More information



WELFARE  
AND BASIC  
SECURITY

### APEX

Transferring Child and Adolescent Mental Health Treatment to Awareness, Prevention and Early Intervention

 [apex.utu.fi/](https://apex.utu.fi/)  [@APEXtutkimus](https://twitter.com/APEXtutkimus)

### TITA

Tackling Inequalities in Time of Austerity

 [blogit.utu.fi/tita](https://blogit.utu.fi/tita)  [@TITAconsortium](https://twitter.com/TITAconsortium)

### PROMEQ

Inclusive Promotion of Health and Wellbeing

 [uef.fi/en/web/uef-vaikuttavuuden-talo/promeq](https://uef.fi/en/web/uef-vaikuttavuuden-talo/promeq)  [@Promeq\\_hanke](https://twitter.com/Promeq_hanke)

### SET

Smart Energy Transition

 [smartenergytransition.fi/en/front-page/](https://smartenergytransition.fi/en/front-page/)  [@SET\\_Project\\_FI](https://twitter.com/SET_Project_FI)

### WIP

Work, Inequality and Public Policy

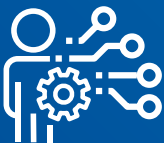
 [stn-wip.fi/en/](https://stn-wip.fi/en/)  [@WIPconsortium](https://twitter.com/WIPconsortium)





# 12

## The renewal of education and supporting choices for secondary education



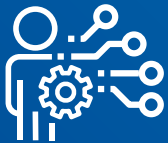
DISRUPTIONS  
OF TECHNOLOGY  
AND WORK

The school is the most important institution when ensuring equal grounds for everyone. It seems, however, that the boys are falling behind. The upper secondary education choices have far-reaching implications for how young people succeed in working life. Disruption of work requires us to anticipate future work requirements for young people and to undertake necessary reforms to support their education and adapting to work.

- ▶ Schools need to provide sufficient knowledge and skills and more support to students. It is also necessary to have an adequate number of attractive further education alternatives to promote young people's successful choices of upper secondary education. **(Oma linja, Polkuja työhön)**
- ▶ Learning future skills such as robotics, additive manufacturing (3D and 4D printing) and programming should become a part of school education. **(MFG 4.0)**
- ▶ It is important to develop innovative pedagogical methods (e.g. invention projects) to facilitate the growth of students' cognitive capabilities. Teachers' collaboration and professional evolution, school networks and schools' cooperation with the rest of the society are important. **(Growing Mind)**

# 12

## More information



DISRUPTIONS  
OF TECHNOLOGY  
AND WORK

### Oma linja

Preventing Social Exclusion: What Works and Why?

 [omalinja.fi/in-english/](https://omalinja.fi/in-english/)  [@omalinja](https://twitter.com/omalinja)


### Polkuja työhön

Occupational Restructuring Challenges Competencies

 [polkujatyohon.fi/en/](https://polkujatyohon.fi/en/)  [@polkujatyohon](https://twitter.com/polkujatyohon)

### MFG 4.0

Manufacturing 4.0 - Strategies for Technological, Economical,  
Educational and Social Policy Adoption

 [mfg40.fi/](https://mfg40.fi/)  [@mfg40fi](https://twitter.com/mfg40fi)

### Growing Mind

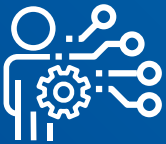
Educational Transformations for Facilitating Sustainable Personal, Social,  
and Institutional Renewal in the Digital Age

 [growingmind.fi/](https://growingmind.fi/)  [@GrowingMindEdu](https://twitter.com/GrowingMindEdu)



# 13

## Digital disruption and future work



DISRUPTIONS  
OF TECHNOLOGY  
AND WORK

**Technology automates tasks at work, but it may also enrich work and provide new opportunities for human-machine interaction. Digitalisation provides new tools for networking, problem solution and learning.**

- ▶ Digital services generate growing needs for human interaction. Technology developers must be accompanied by experts with service knowledge and development capabilities. **(SWIPE)**
- ▶ In the health sector, it is necessary to involve health-care professionals for planning changes related to automation and use of robotics. Participation and training, as well as experimentation, are effective means to facilitate the use of new technologies. **(ROSE)**
- ▶ Adult education allowance facilitates employees' adaptation to digital disruption by enabling them to retrain and change profession. Allowances should be particularly targeted to people whose employment is threatened by technological changes or relocating work abroad. **(Polkuja työhön)**

# 13

## More information

### SWiPE

Smart Work in a Platform Economy

 [smartworkresearch.fi/](https://smartworkresearch.fi/)  [@swipe\\_STN](https://twitter.com/swipe_STN)

### ROSE

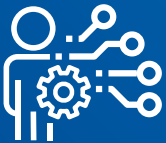
Robots and the Future of Welfare Services

 [roseproject.aalto.fi/en/](https://roseproject.aalto.fi/en/)  [@ROSERobotic](https://twitter.com/ROSERobotic)

### Polkuja työhön

Occupational Restructuring Challenges Competencies

 [polkujatyohon.fi/en/](https://polkujatyohon.fi/en/)  [@polkujatyohon](https://twitter.com/polkujatyohon)



DISRUPTIONS  
OF TECHNOLOGY  
AND WORK



# 14

## Data-based business models and data sharing



DISRUPTIONS  
OF TECHNOLOGY  
AND WORK

**Data-based business models have a notable potential in value creation and as a source of economic growth. Data is, however, still an under-exploited resource in European organisations, not used at all or merely at the holder's own disposal. Reasons for this are that identifying the value of data is challenging and that there are various uncertainties related to data-based value creation.**



- ▶ It is important to allocate research resources to identify which type of model forerunners are using for determining the value of data. Research-based knowledge and best practices should be disseminated (e.g. via seminars, workshops, manuals for good practices) among organisations to promote value creation from data. **(DDI, PVN)**
- ▶ It is necessary to develop new types of contract models that cover sufficiently broad range of business practices involving data exchange or sharing. Tentative contract models should be formulated to the validated ones in collaboration with actors from different sectors. **(DDI, PVN)**
- ▶ The public sector should promote the dissemination of contract models for data sharing by using them in public procurement. Different layers of government should obtain systems offering open interfaces via which data is available for further processing with an appropriate contract model. **(DDI, PVN)**

# 14

## More information

### DDI

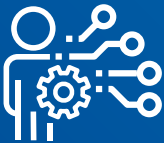
Digital Disruption of Industry

 [ddi.aalto.fi/en/](https://ddi.aalto.fi/en/)  [@digimurros](https://twitter.com/digimurros)

### PVN

Platform Value Now: Value Capturing in the Fast Emerging Platform Ecosystems

 [platformvaluenow.org/](https://platformvaluenow.org/)  [@alustatalous](https://twitter.com/alustatalous)

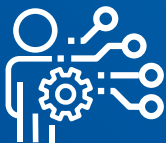


DISRUPTIONS  
OF TECHNOLOGY  
AND WORK



# 15

## Automation and welfare



DISRUPTIONS  
OF TECHNOLOGY  
AND WORK

The use of automation in welfare services increases its importance, due to phenomena such as aging populations. In care services, cost effectiveness cannot be the primary criteria for the adoption of automation; it is important to find the care tasks to which automation is most suitable. More broadly, automation has raised discussion on its wider welfare consequences such as its impacts on income distribution and economic inequalities.

- ▶ Existing industrial solutions (e.g. robots used in pharmaceutical warehouses) and technologies supporting care work (e.g. applications for real-time documentation of care) should be widely exploited in welfare services. In care services, it is important to have approval for the adoption and use of automation from all parties involved, i.e. service providers, employees and customers. **(ROSE)**
- ▶ Robotics in welfare services changes the capital–labour relationship. We need to anticipate changes and experiment with different solutions such as basic income, taxes for robots and transaction taxes. **(ROSE)**
- ▶ Current system of social and retirement care as well as occupational health services should be developed to better take into account those employers and employees active in digital platforms. **(SWiPE)**

# 15

More  
information



DISRUPTIONS  
OF TECHNOLOGY  
AND WORK

## ROSE

Robots and the Future of Welfare Services

 [roseproject.aalto.fi/en/](https://roseproject.aalto.fi/en/)  [@ROSERobotic](https://twitter.com/ROSERobotic)

## SWiPE

Smart Work in a Platform Economy

 [smartworkresearch.fi/](https://smartworkresearch.fi/)  [@swipe\\_STN](https://twitter.com/swipe_STN)





# 16

## New tools for democracy



ACTIVE  
CITIZENSHIP

**Citizens' opportunities to participate and influence the decisions that concern themselves have changed. The new methods and tools of governance and democratic innovations increase civic participation, transparency and inclusiveness. Strategic research includes the following innovative approaches:**

- ▶ Deliberative mini-publics, consisting of randomly selected participants, guarantee the representation of a wide range of perspectives and produce well-informed views to support decision making. **(PALO)**
- ▶ Collaborative governance and Joint fact-finding: parties with different interests, values and factual beliefs work together to jointly define the problem, review existing knowledge and take effective and informed action. **(CORE)**
- ▶ Participatory budgeting is a form of civic engagement in which residents propose, develop, and vote on projects that are financed by a municipality or local government. **(BIBU)**
- ▶ Crowdsourcing is a method of problem-solving and knowledge search in a form of open calls online. Collective deliberation can help the participants understand others' perspectives and decrease polarisation. **(BIBU)**
- ▶ Digital participation enables young people's participation - Virtual Council for young people as a part of hearing procedure in law preparation has empowered them to take part in societal decision-making. **(ALL-YOUTH)**

# 16


## More information



ACTIVE  
CITIZENSHIP

### PALO

Participation in Long-Term Decision-Making

 [paloresearch.fi/en/](https://paloresearch.fi/en/)  [@PALOresearch](https://twitter.com/PALOresearch)

### CORE

Collaborative remedies for fragmented societies

 [collaboration.fi/EN](https://collaboration.fi/EN)  [@core\\_STN](https://twitter.com/core_STN)

### BIBU

Tackling Biases and Bubbles in Participation

 [bibu.fi/en](https://bibu.fi/en)  [@BIBUresearch](https://twitter.com/BIBUresearch)

### ALL-YOUTH

All Youth Want to Rule their World

 [allyouthstn.fi/en/all-youth-2/](https://allyouthstn.fi/en/all-youth-2/)  [@AllYouthKaikki](https://twitter.com/AllYouthKaikki)



# 17

## Integrating immigrants to the society



ACTIVE  
CITIZENSHIP

In a well-functioning society, integration of different groups of people is key to ensuring education and healthier lives for everyone. Emphasis should be placed on two-way integration and the labour market integration of migrants with low levels of education, especially migrant women.

- ▶ The paperless are the most vulnerable group of immigrants - one way to improve their situation is to provide residence permit based on humanitarian grounds for one year. (URMI)
- ▶ The process of applying an asylum should be faster, but fair and just. Integration services, such as language training, work or study assistance, provided during the process of applying an asylum, are key to better integration in the future. (GLASE, URMI)
- ▶ The welfare services should be guaranteed also to people without residence permits. (GLASE)

# 17

More  
information



ACTIVE  
CITIZENSHIP



## URMI

Urbanization, Mobilities and Immigration

 [urmi.fi/en/](http://urmi.fi/en/)  [@URMI\\_team](https://twitter.com/URMI_team)

## GLASE

Multilayered Borders of Global Security

 [glase.fi/in-english/](http://glase.fi/in-english/)  [@GLASEResearch](https://twitter.com/GLASEResearch)

