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PUBLICATION OF THE COMMITTEE OF THE FUTURE 2022

THE WORLD SUMMIT OF THE COMMITTEES OF THE FUTURE 2022



PARLIAMENT
OF FINLAND

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FOREWORD

(very preliminary draft/ plan, to be finalised after the World Summit)

We should raise the bar.

– MP, Member of the Committee for the Future
Antti Rantakangas in a Committee's brainstorm session
on its goals for the electoral period 2019 – 2022

Background

The World Summit of the Committees of the Future brought together, for the first time, the committees responsible for dealing with future issues in different parliaments. The World Summit was held in the Parliament of Finland on 12—13 October 2022.

The idea a gathering of committees of the future had been around for quite some time. The Committee for the Future, founded in 1993 in the Parliament of Finland, was the world's first parliamentary committee dealing with future policy. In the recent years, future committees have been established in some other parliaments as well. The Finnish Committee saw this as a promising and important early sign of recognised need to develop democratic decision-making, where tension between the needs of the short and the long term, present and future, are ever present.

The Finnish Committee for the Future had discussed the idea of getting to know the other committees of future in the previous electoral periods. Yet it took until autumn 2019 that a concrete initiative to host such a meeting was made. This happened in a brainstorming session where the Committee discussed topical interests of its members and the goals it would set for its activities for the electoral period 2019 – 2022. As one of the ideas to push forward, the Committee decided to gather its counterparts from the parliaments around the world to a joint Summit in autumn 2022.

Yet it was no straightforward task to know whom to invite. The Committee for the Future was aware of some of the other committees of the future, but the precise nature of many of these was unknown. To identify the relevant counterparts, the Committee asked help from the Ministry of Foreign Affairs of Finland. It used its network of embassies to find out, what mechanisms parliaments in different countries have for foresight and future-oriented decision-making. Special attention was to be paid to committees and other parliamentary organs that has a permanent mandate to consider future-related matters and that consisted of elected members of parliament rather than of civil servants.

The Ministry's study covered 80 countries. It found that some futures work was done in about 40 countries. Actual committees of the future were found to exist in Brazil and Chile, and Uruguay (and soon after the study was made, new committees of the future were brought to the Finnish Committee's attention from Iceland, Lithuania and the Philippines). In most of the 40 parliaments doing futures work, consideration of futures issues was distributed to the existing committees. Of these committees, eight were assessed to have so broad mandate that they matched the idea of committee of future quite closely despite operating under some other name. Some five parliaments had internal or affiliated office for doing foresight, and in nine countries foresight was carried out only in the prime minister's or president's office, but not in the parliament.

Finally, a decision was made to send invitation to the 14 Committees that could be considered committees of the future. Later the Congress of Paraguay also founded Special Committee for the Future for Mid and Long term Strategic Affairs, which was subsequently invited also. Due to the ongoing pandemic, the invitation covered possibilities to participate virtually or physically in Helsinki, and an opportunity was offered to send a written Committee Introduction to the Summit publication even if participation was not deemed possible.

Of the invited 15 committees, 13 responded positively. Of these 13, the Brazilian Committee on the Senate of the Future had to cancel its participation at the last minute, but it did send a written Committee Introduction, which is included in this publication. Other Committees were physically represented, but the members of the Committee on Science, Technology, Research, and innovation from the House of Representatives, the Kingdom of Thailand participated virtually while sending civil servants and experts on-site.

The Committee for the Future of the Parliament of Finland notes that the above-mentioned criteria and process were fitting for its own needs to get to know closest counterparts but are not meant to be interpreted as the only possible way to choose whom to invite to the World Summit of the Committees for the Future.

Aims

The first World Summit of the Committees for the Future had six purposes.

First is to get organised: to get an overview of committees with a mandate to process future issues in their respective parliaments.

Second, to share information and best practises.

Third, to highlight futures issues that the participants want to raise as important further discussion topics for this forum.

Fourth, to discuss about further collaboration and agree on the Joint Statement to be included in this publication of the World Summit of the Committees of the Future 2022.

Fifth, to highlight the need to increase future-orientation in decision-making in parliaments and to encourage the formation of new committees of the future.

Sixth, to offer the concept of World Summit of the Committees for the Future as an inspiration for other committees and parliaments to host Summits of their own and thus raise awareness of parliamentary futures work, share best practises and offer a venue for international discussion over emerging future questions.

The World Summit Days

Day I of the Summit was structured as follows...

- Day I introduced the committees and their practises (Parts I & II of written Committee Introductions)
- [Here a short description of some of the similarities and differences.]

Day II of the Summit was structured as follows...

- Topical suggestions of the participants (Part III of written Committee Introductions)
- Participants' views on the need of further collaboration and on the Joint Statement
- Some topics were raised by multiple participating Committees. They include, among others, the possibilities of technology in achieving more environmentally friendly and equal development, the need for transnational regulation of digital business and the use of algorithms, and the importance of parliamentary cooperation in proactive decision-making and responding to sustainability challenges... [Text to be replaced with a more detailed description of the overlapping topical suggestions as well as of characterisation of topics that perhaps were not mentioned many times but rather stood out as different from the others.]

Structure of the Publication

The structure of the publication is as follows...
[Here a paragraph describing the structure of the publication: Preface, Joint Statement, Committee Introductions.]
The structure of the Committee Introductions is as follows...

[Here a paragraph describing the meaning of Parts I, II and III of Committee Introductions.]

To conclude

[Here some concluding notions about the importance of parliamentary collaboration and future dialogue in the face of changing technology, environment, geopolitics, pandemics and other "wild cards".

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And many wishes that the first World Summits will continue and that new committees of the future will be founded and will bring forward ideas and solutions that others have not presently even imagined.]

PREFACE BY THE HOST OF THE WORLD SUMMIT OF THE COMMITTEES OF THE FUTURE 2022,
Committee for the Future

Names:
- Chairman
- Vice Chairman
- 15 Members

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JOINT STATEMENT

THE WORLD SUMMIT OF THE COMMITTEES OF THE FUTURE 2022

The Committees of the Future have gathered to The World Summit of the Committees of the Future in Helsinki on 12 – 13 September 2022.

The World Summit is the first time that parliamentary committees whose responsibilities relate to reviewing long-term future developments have convened globally.

In this context, the participants of the World Summit of the Committees of the Future 2022 state the following:

- The wellbeing of the people and the planet requires increased future-orientation in decision-making. Parliaments are the most appropriate institutions to support this.
- Committees of the Future are a tool for parliaments and their members to increase the future-orientation in decision-making. Committees of the Future review phenomena, developments and alternatives that could be relevant for the future and relate these to decision-making.
- Phenomena driving the future development of countries are often transnational. Inter-parliamentary and inter-cultural futures dialogue is therefore useful for recognising emerging challenges and common interests. It is also a means to learn about new ways to do futures-related work in different parliaments.
- The Committees of the Future continue to meet in World Summits of the Committees of the Future.
- Committees of the Future encourage the creation of new committees of the future as well as other mechanisms to support future-oriented decision-making in parliaments around the world.
- Any committee of the future can host a World Summit of the Committees of the Future.
- The committee that hosts the World Summit can freely design the agenda of the meeting and to invite any committee of the future, including new entrants.

IN HELSINKI, 13TH OCTOBER 2022
PARTICIPANTS OF THE WORLD SUMMIT OF THE COMMITTEES OF THE FUTURE 2022

Committee of the Future, Parliament of Finland – Eduskunta
Committee of Research, Innovation and Digitalization, Parliament of Austria
The House of Commons Standing Committee on Industry, Science and Technology, Parliament of Canada
Committee of the Future, Science, Technology and Innovation, National Congress of Chile
Economic Affairs Committee, Parliament of Estonia – Riigikogu
The Future Committee, Parliament of Iceland – The Althing
Committee for the Future, Parliament of Lithuania - Seimas
ICT Committee and Future's Committee, Congress of Paraguay – Congreso
Committee of Sustainable Development Goals, Innovation and Futures Thinking, Congress of the Philippines
Committee for Digitalisation, Innovation and Modern Technology, Parliament of Poland – Sejm
Committee of Science, Technology, Research and Innovation, National Assembly of Thailand
The Special Futures Committee, General Assembly of Uruguay
Committee for Science, Technology and Environment, National Assembly of the Social Republic of Vietnam

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THE AUSTRIAN PARLIAMENT



PARLIAMENTARY COMMITTEE FOR RESEARCH, INNOVATION AND DIGITALISATION IN THE AUSTRIAN NATIONAL COUNCIL

Part I. Committee facts

The Committee for Research, Innovation and Technology (FIT) is one of 38 Committees of the Austrian National Council. It is a standing committee with 23 members that meets on an average 4 times per year. The Committee advises on the strategic orientation in research, innovation and technology policy, for example in shaping the funding landscape, strengthening human resources and in technology assessment. It also adopts corresponding bills and acts as a link between research and technology experts and political decision-makers.

Part II. Examples of Committee work

The following are current (preliminary) topics of discussion in the committee:

- **Endowment of the national foundation for research, technology and development**
- **Strengthening research regarding cybersecurity**
- **Safe tool for video conferences in ministries**
- **Quick provision of budget resources to promote Covid-19 research**
- **Incentives for private research funding**
- **Financing of mid- and long-term research on the social and psychological ramifications of the COVID-19 pandemic on society**
- **Developing a data strategy for times of crisis**
- **Digital sovereignty**
- **Comprehensive implementation of barrier-free internet**
- **Anchoring of the financing plan in AI-strategy**

- **Plan of action for a digitally sovereign Austria and Europe**
  - Motion submitted by Social Democratic Party (SPÖ) MPs in October 2021: The motion summarises critiques of Facebook, WhatsApp and Instagram: according to critics, these platforms are monopolistic, threaten democracy, spread misinformation, and prioritise profits over users' wellbeing. Thus, the motion calls on the government to develop a comprehensive plan of action regarding Austrian digital sovereignty – including software, hardware, and open source platforms - in cooperation with scientists and researchers and submit it to parliament. In particular, the government is requested to promote initiatives

to separate Facebook, WhatsApp and Instagram on the European level and take further regulatory steps. The goal is to end dependency on US monopolies and secure independent, democratic digital infrastructure which complies with data protection laws.

- **Austrian hydrogen strategy**
  - Motion submitted by a Freedom Party (FPÖ) MP in February 2022: The motion recalls that the government adopted a resolution regarding the development of an Austrian hydrogen strategy at the end of 2018.
  - According to the government programme, hydrogen is to be developed in particular for the mobility sector and the overall economy.
  - Meanwhile the responsibility for developing that strategy had transferred from the Ministry for Sustainability and Tourism to the Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology.
  - The motion therefore calls on the government, in particular on the Minister for Climate Protection, Environment, Energy, Mobility, Innovation and Technology, to develop an Austrian hydrogen strategy and submit it to Parliament by 30th June 2022.

- **Digital sovereignty, development of an open-source-strategy**
  - Motion submitted by a Social Democratic Party (SPÖ) MP in June 2022: The motion declares that Austria needs to strengthen its digital sovereignty through the use of open-source software in its public administration. It argues that critical public infrastructure should not depend on a small number of major corporations and their countries of origin. According to the motion, this dependency leads to the risks of political blackmail and data protection issues. The MP recommend a range of measures to the government, including: Carrying out a study examining the dependency on specific software companies in the Austrian public administration, Designing an open-source strategy for the Austrian public administration and educational institutions, Promoting open-source initiatives through projects at Austrian schools.

- **Funding programme for renewable fuels**
  - Motion submitted by Freedom Party (FPÖ) MP in July 2022: The motion views synthetic fuels, produced using electricity from renewable sources, as an important contribution to achieving CO2-neutrality in the mobility sector. Therefore, the motion calls on the government to provide the necessary financial resources to develop such renewable fuels. The motion was deferred with a majority vote by the coalition.

In the past, the Committee has published reports on a range of topics, including

- **Digitalisation:** e-government-law; use of the digitalisation fund; corporate service portal act;
- **Research and technology**: Federal Statistics Act 2000 and Research Organisation Act, easier data access for science and research; amendment to the law regarding research financing; Austrian strategy for space activities; overhead-financing of research projects
- **Legal**: Information Sharing Act; Patent Attorney Law; Animal Testing Law; Telecommunications Act
- **Education**: comprehensive, accessible digital skills courses; education as a pillar in the national research, technology and innovation strategy;

- Competence Center GeoSphere Austria
  - March 2022: a federal law aimed at spinning off and merging the Federal Geological Survey (GBA) and the Central Institute for Meteorology and Geodynamics (ZAMG) was broadly approved in the Committee.
  - The merged Competence Center GeoSphere Austria is intended to obtain data necessary in the fight against climate change. According to the Science Minister Martin Polaschek, current challenges include raw material scarcity, disaster management, questions of sustainable energy supply and energy storage.

- Organic neural rights
  - Neuro-technology refers to methods and instruments that allow a direct connection of technological components with the nervous system.
  - March 2022: Liberal Party (NEOS) pointed out that in regards to the progress of neuro-technologies, the definition of "organic neural rights" is becoming increasingly relevant. A legal framework for the protection of intellectual privacy, which neuro-technologies potentially encroach upon, was therefore necessary.

- Digitally sovereign Austria and Europe
  - March 2022: the Social Democratic Party (SPÖ) notes the dependency of Europe on US-monopolies in the realm of digital communication infrastructure and demands an action plan for Austria's digital sovereignty in the areas of software, hardware as well as open source platforms.

- July 2022: Austria scores among top EU member states for R&D expenditure
  - 2022 report on research and technology submitted by the Science Minister Martin Polaschek, Climate Protection Minister Leonore Gewessler and Economics Minister Martin Kocher

- Highlighted in the report
  - Austria ranks among the highest-scoring countries worldwide in terms of R&D expenditure and is one of five EU member states which meet the European goal of spending 3% of GDP on R&D (for the 9th consecutive year)
  - Above European average score for innovative capability
  - Strong research capabilities in quantum research and technologies, circular economy, AI
  - High success quote for ERC grants

Part III: Committee Suggestions

The suggested topics for further discussion are

- Funding programme for renewable fuels
- Digitally sovereign Austria and Europe •

The goal is to end dependency on US monopolies and secure independent, democratic digital infrastructure which complies with data protection laws.

NATIONAL CONGRESS OF BRAZIL

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COMMITTEE ON THE SENATE OF THE FUTURE

Summary of activities

Part I- Committee facts

The Committee on the Senate of the Future was created by the Federal Senate Resolution No. 14 of 2013, as proposed by Senator Cristovam Buarque, inspired by a similar committee in the Chilean Senate, the Comisíon de Desafíos del Futuro, Ciencia, Tecnología e Innovación (Committee on Future Challenges, Science, Technology and Innovation).

The permanent committee to address the challenges of Chile's future, composed of 7 senators and chaired by Senator Guido Girardi, was created in 2011 with the goal of thinking about future scenarios in the areas of science, technology, humanities and citizenship.

With this inspiration, the Committee on the Senate of Brazil´s Future was installed on October 1, 2013, with Senator Luiz Henrique as chairman and Senator Cristovam Buarque as rapporteur. According to art. 104-D of Standing Rules of Federal Senate, the committee is responsible for promoting discussions on major issues and the future of the country, as well as improving the Senate's performance on these issues. In this sense, the commission holds, primarily, public hearings, to debate topics suggested by the senators.

To date, the following senators have served as chairs of the Committee on the Senate of the Future:
Biennium 2013-2014: Senator Luiz Henrique
Biennium 2015-2016: Senator Wellington Fagundes
Biennium 2017-2018: Senator Hélio José
Biennium 2019-2020: Senator Mecias de Jesus
2021-2022 Biennium: Senator Izalci Lucas

Part II - Examples of Committee work

1. Public hearings

According to article 104-D of Standing Rules of Federal Senate, the Committee is responsible for promoting discussions on major issues and the future of the country, as well as improving the Senate's performance on these issues. In this sense, the commission holds, primarily, public hearings, to debate topics suggested by the senators. Between the years 2013 and 2022, the Committee on the Senate of the Future promoted the following debates by holding public hearings https://legis.senado.leg.br/comissoes/audiencias?4&codcol=1716

2. Public Policies Monitoring
Among the functions of the permanent committees, it is foreseen in article 96-B of the House Rules of the Federal Senate to evaluate public policies developed within the Executive Branch. The following studies can be highlighted::

2.1 The Future of Towns: challenges for sustainable and efficient urbanization
The theme was debated during a public hearing held at the Committee, with the presence of academics and experts on the topic of the public and private sectors.
As a result of the public policy evaluation, the Committee presented PLS 797/2015, which amends the Urban Mobility Law (law 12.587) to include the choice of 5 (five) pilot projects in each Federation Unit to be treated as a priority. Such projects should be evaluated and corrected to serve as a reference for the other municipalities.

2.2. Information Technology and the Legislative Process of the Future
The topic was discussed through four interactive public hearings, which were broadcasted by TV Senado and had social participation via e-Cidadania, and by telephone, through the service Alô Senado.

The guests invited to the debate were specialists from the private sector, the public service, and academia, who could relay on the input of the questions formulated by the Legislative Advisory Office, the Secretariat-General of the Board, and the Information Technology Department (Prodasen), the body responsible for the network infrastructure and for developing and maintaining the House's information technology systems. It is worth noting that, after each public hearing, a workshop was held innovatively in the Federal Senate, with civil servants from the Secretariat-General of the Board, Prodasen, and the Legislative Advisory Office, to deepen the discussions.As a result of this cycle of debates, the Committee approved a report containing a summary of the contents debated and proposals to guide the future actions of the Federal Senate based on the perspectives raised (link to the report: https://legis.senado.leg.br/comissoes/arquivos?ap=1840&codcol=1716)

3. Legislative Matters presented
Since its creation, the Committee on the Senate of the Future has authored the following legislative matters:

3.1. Senate Resolution No. 19 of 2015, which regulates the e-citizenship program of the Federal Senate, which enables popular participation in various stages of the legislative process (public hearings, public consultation on matters and proposition of legislative ideas). Link to the PRS https://legis.senado.leg.br/norma/561835/publicacao/15622229

3.2 Senate Bill 797/2015, which gives priority in receiving resources destined to urban mobility for up to 5 municipalities, including the capital of each state. (Link to the Bill: https://www25.senado.leg.br/web/atividade/materias/-/materia/124532)

Bill 3883/19, which provides for continuous and free access to digital public services. (Link to the Bill https://www25.senado.leg.br/web/atividade/materias/-/materia/137584)

4. Congress of the Future

In December 2016, CSF held the I Congress of the Future of Brazil, which had the theme "Democracy, communication and progress in the digital and sustainable world" and brought together renowned experts, professors and scientists from national and international universities, executives from large Brazilian and foreign companies, as well as journalists and communicators to debate the issues that will guide the development of society in the next decade.

Topics such as sustainability and its challenges in the future; Agenda 2030; food security; public policies for health; education, science, and technology of the future; the future of communication; and representative democracy in the digital world were debated.

In parallel, an interactive exhibition of innovations, promoted by the Brazilian National Confederation of Industry (CNI), took place at the Congress site.

Part III- Committee suggestions

1. Biodiversity

Biodiversity constitutes a heritage whose economic exploitation allows the creation of a sustainable economy, friendly to environment and to social segments benefited by it. Bioeconomy comprises diverse activities as food production, exploitation of products derived from native plants and, in general, ecosystem services related to biodiversity, such as fiber and wood production, plant pollination, use of genetic resources and microorganisms, among many others. Considering the global importance of Bioeconomy development for the future of living conditions and sustainability, we propose this topic to future Congresses.

2. Sustainable agricultural production

Agricultural production is a fundamental condition for the provision of worthy living conditions for the world's population, including the availability of food and the environment preservation. In this context, a number of themes acquire great relevance, such as increased productivity, water use, soil quality, integrated agriculture-livestock-forestry production and food production in laboratory.

3. Amazônia
Amazon is the largest tropical forest on the planet, covering about 5.5 million square kilometers, stretching across nine countries in South America. The forest covers most of the Amazon River Basin, the largest in the world, with about 7 million square kilometers of coverage area. In Brazil, the area legally defined as the Amazon covers more than 49% of the country.

This territory is home to native populations and enormous biodiversity, both of which are subject to great risks due to improper economic occupation, through deforestation, mining and intensive farming.

The importance of this biome for the dynamics of carbon and the availability of water in the atmosphere, among other factors, determines a central role for the Amazon in the context of mitigating the effects of climate change, which in turn also influence the conditions for its preservation. •

Agricultural production is a fundamental condition for the provision of worthy living conditions for the world's population, including the availability of food and the environment preservation.

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PARLIAMENT OF CANADA



THE HOUSE OF COMMONS STANDING COMMITTEE ON INDUSTRY AND TECHNOLOGY

INTRODUCTION

The House of Commons of Canada's Parliament has 27 committees, including the Standing Committee on Industry and Technology (the Committee). The committee is responsible for studying and reporting on legislation, the activities and spending of the Innovation and Economic Development Portfolio members, including the Department of Industry, the regional development agencies, the research councils and the Canadian Space Agency, and issues related to innovation and to industry and technology capability; telecommunications policy; investment, competition and trade; small business and tourism; and rules and services that support the effective operation of the marketplace.

In recent years, it has conducted studies on

- quantum computing;
- small and medium-sized businesses;
- domestic manufacturing capacity for a COVID-19 vaccine;
- critical minerals;
- accessibility and affordability of telecommunications services; and
- development and support of the aerospace industry.

This backgrounder provides more details about the committee's studies on quantum computing, access to telecommunications services and the supply of critical minerals, and suggests topics for upcoming World Summits of Committees of the Future.

Examples of issues addressed in recent years

A. Quantum computing

In Canada, as well as internationally, governments, academic stakeholders and the private sector have been working hard for several years on developing quantum technologies. In 2021, the Government of Canada announced funding over seven years starting in 2021–2022 to launch a national quantum strategy. On 1 March 2022, the committee decided to undertake a study of quantum computing to grasp the related opportunities and risks and gain a better appreciation of the domestic industry. During the few months of this study, the committee heard from 20 witnesses, including several university professors and private companies in the industry.

Over the course of the study, the Committee gained an appreciation of how these technologies could present incredible opportunities for Canada, and all countries, but also pose significant threats. For example, on the one hand, a quantum computer might be able to break current cryptography, putting at risk all online communications, including banking systems and critical infrastructure. On the other hand, it could perform calculations that would take billions of years for today's fastest supercomputers, allowing for faster drug discoveries and easier management of supply chain issues and complex financial problems, among other benefits. According to experts, a quantum computer will be developed in 10 to 20 years.

The Committee will table its report in September 2022.

B. Access to telecommunications services

Given the advances in online commerce and mobile communications, the development of online learning platforms and the growing use of social media, broadband (or high-speed) Internet is now a vital part of Canada's socioeconomic infrastructure. However, many rural and remote areas still lack access. The Committee therefore began studying issues related to several aspects of telecommunications services across the country in recent years to come up with solutions to bridge the digital divide. The Committee tabled the following reports in the House of Commons:

- Affordability and Accessibility of Telecommunications Services in Canada: Encouraging Competition to (Finally) Bridge the Digital Divide (2021);
- Rural Wireless Digital Infrastructure: A Critical Role (2019); and
- Broadband Connectivity in Rural Canada: Overcoming the Digital Divide (2018).

During these studies, the committee heard from a wide range of stakeholders and addressed many topics, including:

- affordability, broadband access and quality of service;
- rural connectivity;
- spectrum management;
- the role of wireless infrastructure in emergencies;
- competition in the telecommunications sector;
- telecommunications infrastructure funding programs;
- rollout of 5th generation wireless services;
- digital literacy; and
- data collection to understand broadband Internet access in Canada.

The committee found that while the availability of broadband Internet, particularly wireless connectivity, has improved across the country in recent years, the digital divide persists between urban areas and rural and remote areas. The COVID-19 pandemic demonstrated the need to connect all Canadians, wherever they live, as quickly as possible. Currently, too many Canadians still do not have

Internet connections that are fast enough to participate in day-to-day activities, which limits their opportunities. Where useful and appropriate, the Committee will continue focusing on this issue in order to come up with solutions so that all Canadians can gain adequately access as quickly as possible.

C. Supply and processing of critical minerals

The energy transition undertaken by several countries is helping drive up demand for many minerals. Many of the advanced technologies used to generate greenhouse gas-free electricity and electrify transportation rely on many minerals. Canada has most of the critical minerals that will be in high demand in the coming years and could become a leader in the supply of critical minerals and the development of the value chain for advanced technologies such as batteries. In light of this, the Committee launched a study in January 2022 on the supply and processing of critical minerals in Canada. During the few months of this study, the Committee heard from 24 witnesses, including electric vehicle industry leaders, mining stakeholders, and university professors.

During the study, the Committee found that Canada has several advantages in this sector: in addition to reserves of most critical minerals, it also has a skilled workforce, low-cost access to inputs such as water and land, a stable and predictable geopolitical environment and a rigorous environmental framework. However, Canada faces a number of barriers, such as the purchase of Canadian deposits by foreign companies and a lack of critical minerals exploration, to becoming an industry world leader.

On 16 June 2022 the Committee tabled its report in the House of Commons and made 10 recommendations for the federal government, including

- develop a Canadian critical minerals strategy, including mineral extraction, intermediate processing and recycling, that leverages the strengths of each region in Canada and supports the rapidly evolving Canadian automotive sector;
- establish an interdepartmental committee to develop innovative, more flexible and effective regulations and create a predictable environment for mining companies, while taking into account provincial jurisdiction and the goal of reducing bureaucracy; and
- provide incentives to ensure that the development of a new mine also establishes a value-added industry in the region where it is located and introduces initiatives to encourage Indigenous peoples to fully participate in the mining sector.

Proposals for future topics

There are several topics that could be addressed at upcoming meetings of Committees of the Future. The Committee proposes the following:

- the use of deep technologies, such as artificial intelligence and quantum computing, to improve supply chain resilience;
- strategies for developing global energy capacity while cutting greenhouse gas emissions;
- the use of technology to prepare for future health crises;
- the role of low-emission technologies in global food security;
- different ways to improve broadband Internet connectivity in rural and remote communities;
- big data analytics and cybersecurity in the management of critical infrastructure; and
- the role of technology in helping manage migratory movements resulting from various types of crises. •

The committee found that while the availability of broadband Internet, particularly wireless connectivity, has improved across the country in recent years, the digital divide persists between urban areas and rural and remote areas.

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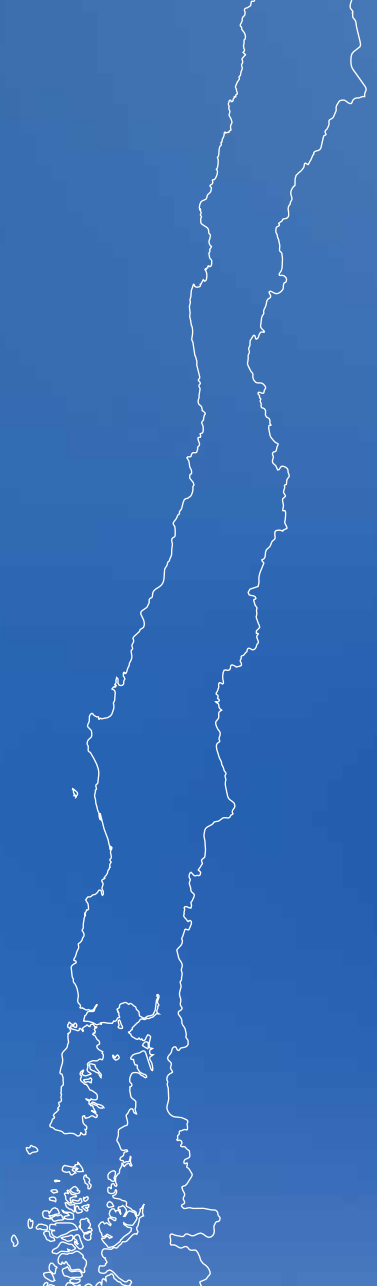
NATIONAL CONGRESS OF CHILE



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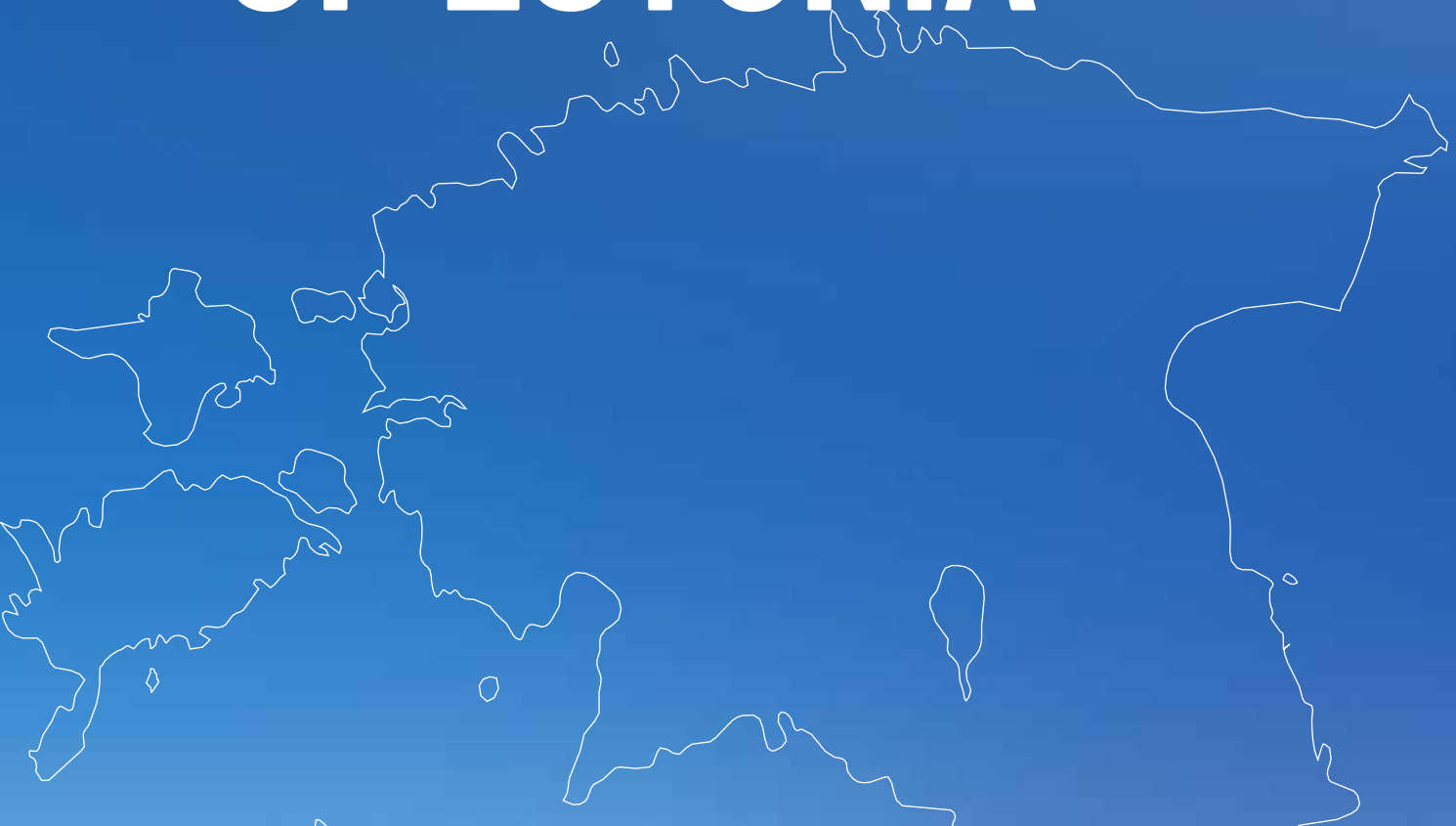
PARLIAMENT OF ESTONIA



ECONOMIC AFFAIRS COMMITTEE AND FORESIGHT IN THE ESTONIAN PARLIAMENT – ESTONIA

Part I. Economic Affairs Committee, the Foresight Act and the Foresight Centre

The Economic Affairs Committe at the Parliament of Estonia is a permanent committee with the obligation of directing legislation concerning or connected to economic affairs. The primary fields of focus for the committee are the housing and building sectors, postal services and electronic communication, energetics, transport, tourism, state assets and aspects related to procurement, requirements to goods and services on the market, economic development and entrepreneurship. The committee has the right to propose draft legislation and changes to legislation pursued. Currently the Economic Affairs Committee consists of nine parliament members and has a support staff of five. The committee works closely with affiliated partners in the economic affairs arena – Ministry of the Economic Affairs, Ministry of Finance, Ministry of Justice, Enterprise Estonia, State Audit Office, Kredex etc.

The Foresight Centre is a think tank operating at the Chancellery of the Riigikogu. It was established in 2016. The work of the Foresight Centre is based on the Foresight Act.

Internationally, foresight has found increasing use as a means of strategic policy shaping. The latest example of that is creating of the post of the Commissioner of Institutional Relations and Foresight, whose important responsibility is ensuring that foresight is in the focus of policy making of the European Union.

In Estonia, the Strategic Initiative Centre was established at the Bank of Estonia on the initiative of President Lennart Meri in 2000. In 2006, the Estonian Development Fund was founded; it was active for 10 years. The Foresight Centre, which was established at the Chancellery of the Riigikogu in 2016 and started its work in 2017, is the third attempt to use foresight in shaping of strategic policies.

During the preparation stage of the Foresight Act, thorough discussions were held on the necessity of establishing the Foresight Centre, on its purpose and activities. It was found that ambitious analyses had recently been conducted only in a few areas. Cross-sectoral cooperation and the creation of such visions of future that would be broader than the area of government of one ministry and dealt with topics in their mutual interaction were also in need of improvement. Communication with the public and giving overviews of future perspectives were also considered important.

In 2016, the Economic Affairs Committee of the Riigikogu (Parliament of Estonia) initiated the Foresight Bill (239 SE) in order to ensure the conducting of foresight necessary for understanding the long-term developments in Estonia, identifying of potential threats and opportunities and assessing of possible activities at science-based and high-quality level. The Estonian Foresight Act also makes the inclusion and participation of a wider public mandatory.

To achieve that, the Foresight Centre was established at the Chancellery of the Riigikogu. The Centre envisions possible future scenarios for policymakers so that they can "futureproof" policies. The Centre is independent in the performance of its functions.

The Riigikogu passed the Foresight Act on 14 June 2016, and it entered into force on 29 June. The first sitting of the Foresight Council, convened by the Chairman of the Economic Affairs Committee, was held on 16 September 2016. By today, the Foresight Centre has been working for five full years.

The task of the Foresight Centre is:

- to identify longterm social and economic development opportunities,
- to create alternative future scenarios based on them, and
- to point out needs for decision-making to politicians and civil servants, for the sake of addressing future risks and opportunities.

Foresight is monitored and directed by the Foresight Council consisting of five research and enterprise experts. The main role of the Council is:

- to make proposals for the selection of foresight topics (about 2-3 topics per year),
- to approve the foresight action plan for each year,
- to monitor the implementation of the action plan, and
- to provide evaluation of completed works.

When selecting foresight topics, preference is given to those meeting the following criteria:

- Allows preparation of alternative scenarios looking ahead for at least 5–15 years, giving an overview of the spectrum of potential developments and options;
- Issue is topical: identification and analysis of the fundamental options and development paths is important and relevant to members of the Riigikogu as well as a wider public;
- Issue is trans-disciplinary, intertwines the fields of work of different ministries and addresses their interrelations;
- Allows involvement of the widest possible circle of parties and experts, including international researchers and experts, in the foresight process;
- No study with similar terms of reference on the same subject has been conducted recently or is being planned.

A steering goup is formed for each foresight project, comprising policy makers related to the particular topic and members of the Riigikogu who are interested in the topic.

The widest possible circle of experts from both Estonia and abroad is involved in the conduct of the foresight.

The results of the foresights completed during the year are presented to the wider public at the *annual conference of the Foresight Centre "A Different Kind of Future"*.

The work on a foresight topic does not end with the preparation of development scenarios. The scenarios are of use when they are taken into account in the drafting of bills and strategies with a significant impact. The Foresight Centre organises workshops for policy makers and strategy planners who are interested in testing the robustness of their plans. The modelling of scenarios helps identify risks and opportunities that might otherwise go unnoticed, and think of alternative policy options in advance by comparing different situations.

The Foresight Centre keeps an eye on a wide range of future topics, issues a newsletter and the article collection "Pikksilm", and organises webinars/seminars and conferences:

- The **newsletter** covers the latest analyses, events and press releases by Foresight Centre. A newsletter is prepared monthly.
- The Foresight Centre's **article collection "Pikksilm"** summarises the major future developments in the world and analyses what they mean to Estonia. "Pikksilm" is published in print once a year, and the articles added to the website on an ongoing basis.
- At **webinars**, discussions on selected topics are held with competent experts. The aim is to offer participants a systemic factual overview in combination with assessments and future insights by experts well versed in the topic. Members of the Riigikogu and other policy makers are informed of potential emerging problems and opportunities.

Part II. Examples of foresight in the Parliament of Estonia

The Foresight Centre has published various trend analyses and future scenarios:

- The Future of Higher Education. Development trends up to 2035
- The Future of Long-term Care
- Future-proof Tax Structure
- The Future of Mobility. Development trends up to 2035
- The future of healtcare in Estonia. Scenarios up to 2035
- The impact of the virus crisis on the Estonian economy. Scenarios up to 2035
- The future of Estonia as a flag state
- The future of maritime trade in Estonia
- Global balance of power 2035
- Scenarios of future well-being of the elderly 2050
- Scenarios of regional economy in Estonia 2035
- Governance 2030. Scenarios for public sector governance and e-Estonia
- Productivity scenarios 2030
- Labour market 2035

The opportunities and risks highlighted in the scenarios have helped to draw up more futureproof strategies, where no meaningful risk in any scenario would remain uncovered and could not hit Estonia unexpectedly. It is already possible to see how the scenarios that seemed unlikely to happen in 2018-2019 have become realistic – like the slowdown of the growth of global trade and redirection of trade flows, or a revolutionary turn towards environment protection and low emissions economy.

As the Foresight Centre took up new topics, the common aspects and points of contact between different topics became visible. In the case of the **future of labour market**, **old age welfare and long-term care**, the common factor is the social protection revenue base, which is undermined by different factors and trends. This is tied to the project on the **future of Estonian tax system**. In case of **long-term productivity trends and regional development in Estonia**, the link between them is the green transition and the development of industrial technologies, which can significantly restructure the location of economic activity in Estonia and severely impact the structure of export sectors.

Making use of the foresight results: some examples

Just recently, a new governnment was formed in Estonia. There are **two examples** in the coalition agreement for 2022-2023 of the topics, that have just recently been reserached in the Foresight Centre: long-term care and higher education.

The report „Future of long-term care", published in November 2021, projected the growth of the burden of care up to 2070, stressing the need to find sustainable financial and organisational solutions to the growing challenge. With the help of scenarios, the potential outcomes of different funding and administration models were analysed.
The recent coaliton agreement promises to undertake a reform in the sector, distributing the burden of care more equally among the state, municipality, and the individuals, thus creating a basis for a more sustainable long-term arrangement.

The report „Future of higher education", published in May 2021, highlighted three major risks from the point of view of future trends. First, that the access to higher education is growingly uneven, as the cost of living is on the rise, but Estonian very expensive student loan and very limited need-based grants are no solutions to cover that. Second, that the higher education in Estonia is free only for full-time students. This requirement is more and more at odds with the trend of life-long learning, and the growing share of highschool graduates who prefer to enter higher education later in life, not directly after the graduation. And third, that the public funding of higher education has not kept pace with the growth of GDP and the average wage, resulting in growing deficit and brain drain in the sector.

The recent coaliton agreement promises to increase public funding to higher education by 15% a year, four years in a row. Also, many political parties have promised to tackle the future-proofing of Estonian higher education model in their programme for the upcoming elections in March 2023.

A third example of the effects of foresight combines the projects on the future of work (2018) and the future-proof tax structure (2021). In addition, The Foresight Centre has undertaken survey research, in 2018 and 2021, to analyse the proliferation of platform work in Estonia. Altogether, these lines of foresight work have enabled to conclude that Estonia needs a tax reform, as the current tax structure is not fit for covering the costs of the ageing society, and also not taking into account the growing share of people working in the new forms of work (e.g platform work), that often implies insufficient social protection coverage and shortfalls in tax revenues.

As a result of this, practically all the political parties in Estonia are accepting the need for a tax debate, and the respective proposals are expected to be found in the programmes for the next general elections in 2023.

Based on the conducted foresight, some of the big challenges for the Estonian society vis-avis the next 10-15 years are the following:

- A socially just and economically viable green transition, achiving climate neutrality by 2050. The green transition rewrites the economic structure, creating winners and losers.
- Given the foreseeable high import intensity in quite many sectors for quite some time (dependency on imported equipment and devices, e.g solar panels, batteries etc, and at least for the rest of the decade, Estonia will be a net importer of electricity), the green transition can easily lead to the loss of jobs domestically and social dissatisfaction, if not managed properly.
- Polarisation in the labour market, and the increasing pay and welfare gap, as the share of middle skilled jobs is decreasing because of automation and AI applications. At the same time, the demand for high skilled jobs is growing, triggering a respective increase in low skilled jobs in the physical service sectors (carers, couriers, taxi drivers etc) often mediated via platforms, leaving the responsibily for social protection coverage on the workers themselves.
- Ageing of the Estonian society, resulting in the shrinking working age population and larger expenditures on healthcare and long-term care. As the social contributions tax is tied to the income from contractual work, this tax base is growingly insufficient to cover the costs, and the growth of expenditure is exceeding the growth of tax revenue.

Some future developments to consider:

- Regional development. The economic activity in Estonia is mainly concentrated around Tallinn and to some extent, Tartu. In the past 20 years, this concentration has constantly increased, leaving other regions emptier. However, quite many factors are now favouring the reversal of that trend, e.g:
  - Automation of industrial production, resulting in less need for workforce, thus making it possible to operate in smaller places
  - Distributed energy production – wind, solar, biomass – creating new work opportunities outside the main centres
  - The proliferation of remote work, reducing the pressure to live near to the work place and favouring for example „second homes" in a countryside to be used all year long
  - Climate-mindedness of the consumers, favouring short supply chains and domestically produced goods.

However, for these trends to materialise in a better regional balance, a supportive set of policies is needed, most importantly ensuring the country-wide access to high-speed / high-quality internet connection, also in remote places.

- Data-based prevention in healthcare. While there has been a lot of talking about personal medicine in the last 15 years, the progress has been slow. And only every 10th euro goes to prevention, compared to the treatment. An interesting avenue is data-based prevention, promising big savings in health costs, if made available to all segments of society. The Foresight Centre has calculated that the provision of individual gene cards to all the residents would cost 55 million euros (given that we've already got ca 200 000 gene donors in Estonia). But if this one-off investment could give every family physician information about the patient's increased risk for a particular disease or medicine intolerance, that would potentially give a significant boost to the public health in the longer term.

  Data-based prevention is not limited to gene information only, it could later be suplemented with information about the microbiome, for example. The key is to cover the whole population including the low income segments, in order to avoid the widening of health inequalities. •

DRAFT

PARLIAMENT OF FINLAND



COMMITTEE INTRODUCTION: COMMITTEE FOR THE FUTURE, PARLIAMENT OF FINLAND

PART I: Committee Facts

https://www.eduskunta.fi/EN/valiokunnat/tulevaisuusvaliokunta/Pages/default.aspx

The Committee for the Future is one of the 17 standing Committees of the Parliament of Finland. These Committees are composed of members of parliament. They are set up after parliamentary elections, and the composition of the Committees reflects the election results.

The Committee for the Future's counterpart cabinet member is the Prime Minister.

The membership of the Committee for the Future is composed of a Chair, a Vice Chair, 15 members, and 9 alternate members. The work of the Committee for the Future is supported by the secretariat, composed of a Committee Counsellor, an Administrative Assistant, a Technical Assistant, and a Senior Advisor.

During the parliamentary session, the Committee meets twice a week.

The Committee for the Future examines parliamentary matters similar to those addressed by the other Committees. In particular, the Committee for the Future is responsible for Parliament's Future Report, which is Parliament's response to the Government Report on the Future, as well as for the Agenda 2030 Report, which monitors the national implementation of the UN Agenda for Sustainable Development. Additionally, similarly to the other Committees, the Committee for the Future gives an opinion on the Government's annual reports and budgets as well as on the general government long-term fiscal plans. The Committee is invited to give an opinion on other parliamentary matters where their long-term importance merits this. However, on its own initiative, the Committee can also decide to examine matters that it identifies as having particular relevance to the future.

To a significant degree, the activities of the parliamentary Committees rely on consultations with experts held as part of the Committee meetings. Because of the complexity of the matters it examines, the Committee for the Future consults experts and stakeholders from a variety of different sectors of society. For example, in the 2015–2019 parliamen-

tary term, a total of 1,105 bodies and persons submitted an oral or written statement to the Committee for the Future. Some of the consultations are open to the public, and members of the public can usually follow and comment on them on site. These open meetings are also broadcast online.

In spite of strong commonalities, however, the activities of the Committee for the Future also show certain significant differences when compared to the activities of the other Committees. The Committee for the Future is responsible in particular for identifying phenomena and issues that significantly affect the future of Finland at an early enough phase so that they can be influenced through a political process. That is why the Committee for the Future does not examine any legislative proposals but restricts itself to broader issues.

In contrast to the legislative Committees, which are given their powers by the Government after preparation by the relevant ministries, it is for the Committee for the Future to independently decide on and create its agenda as well as to examine matters based on its own interests. Therefore, the start of a parliamentary term means a fresh start for the Committee for the Future: for a period of some months after an election, the Committee consults a large group of futures researchers, research organisations and other key stakeholders regarding their freely chosen views on the future issues trending from time to time. On that basis, the Committee starts building its own view on the issues that is wishes to examine in greater detail during its term of office. Regarding the themes it selects, the Committee consults more experts and, where necessary, commissions various studies. The results of these consultations and studies are brought to the attention of the other parliamentary Committees in opinions; to the Government's attention in committee reports; and to the attention of stakeholders and civil society in publications and at seminars.

Moreover, the Committee for the Future is tasked with assessing the impacts of new technologies as well as with the development of futures research and foresight. Finally, the Committee strives to develop Parliament's own operating models by piloting new innovations for democracy and for political decision-making.

PART II: Examples of Committee Work

Committee reports

Under the Finnish parliamentary system, it is for Committees to prepare committee reports in response to Government reports. The Committee for the Future is responsible for the preparation of committee reports on the Government Reports on the Future, submitted twice every parliamentary term, and on the Agenda 2030 Report, published once in the course of a parliamentary term. During the Committee's report preparation process, it obtains opinions from several other Committees while inviting dozens of expert bodies to submit their views on the relevant Government report. Often the Committee puts forward an

elaborative perspective or a further question concerning which it wishes the experts to provide more information. As well as proposing complementing perspectives, the Committee, in its finalised reports, comments on the strengths of the Government's plans and on the areas needing development in those plans. The reports conclude with a number of resolutions, which are requirements binding on the Government. In the annual reports it publishes, the Government reports on the subsequent actions taken following the resolutions issued until the Committee, when giving an opinion on the annual report in question, decides that the requirements expressed in the resolutions have been satisfied or otherwise rendered unnecessary. As they remain effective from one term of government to the next, the resolutions serve as a key instrument for ensuring the coherency of long-term decision-making policy.

The Government Reports on the Future for the current parliamentary term have yet to be submitted to Parliament. The Government Report on the Future submitted in the previous parliamentary term focused on the future of work. With regard to Parliament's Report on the Future, the Committee for the Future maintains, for example, a resolution requiring the Government to focus phenomenon-based budgeting trials on the prevention of the social exclusion of young people, on enabling people with partial work capacity to work, and on developing well-being at work. The committee reports for the previous parliamentary term are also available in English.[1]

In its most recent Agenda 2030 committee report,[2] the Committee for the Future, among other factors, included a resolution requiring the Government to prepare a Positive Handprint programme driven by national competence and emphasising international impact in cooperation with industry for the purpose of ensuring better regulation and multidisciplinary development of sustainable technologies and solutions while promoting sustainable, job-creating growth. As for the implementation of this resolution, the Government reported that it will commission an analysis to define the handprint concept and to devise a model that will make it possible to calculate the handprint impact of individual sectors. Another resolution put forth by the Committee for the Future requires that action be taken to reduce Finland's ecological debt. In its annual report, the Government responded to this resolution by announcing that it is working towards transitioning to a circular economy society by cutting consumption, by calculating a price for environmental risks, by streamlining green technology and by moving away from fossil fuels. When examining an annual report, in respect of these and other resolutions, the Committee for the Future evaluates whether the proposed actions are adequate to attain the objectives set or whether each resolution should be maintained. This interaction institutionalised around the Government Report on the Future and Parliament's Future Report is called 'futures dialogue': through these Reports, the Government and Parliament engage in a continuous and lasting futures dialogue spanning several parliamentary terms on the long-term future of Finland.

Opinions

Opinions are mechanisms for the various Committees to communicate with one another. For the examination of every parliamentary matter, a Committee is appointed which is responsible for preparing the appropriate Committee report, and the other Committees submit their opinions to that Committee. For example, in the examination of the Government Report on the Future, the Committee for the Future serves as the Committee responsible, to which the other Committees provide their opinions. For its part, the Committee for the Future has given an opinion to the Finance Committee on the Government Budget; to the Audit Committee on the relevant annual report; to the Education and Culture Committee on education policy; to the Foreign Affairs Committee on international security issues; and to the Grand Committee on matters influencing EU development.

The Committee for the Future captured several of its key views in an opinion it provided on the Government report on the EU Commission's Strategic Foresight Report.[3] Among other issues, the Committee stressed that real strategic foresight is not so much a question of better justification of the desired futures and political decisions from the top down but rather increased future wisdom and capacity for change in a many-voiced and constantly changing operating environment. This will boost the crisis resilience and regeneration capacity, or regenerative resilience, of entire society.

The Committee for the Future can decide to examine any matter that it deems to have long-term relevance to the future of Finland. When the security policy situation in Europe was transformed following Russia's invasion of Ukraine, the Government published a situation report, on which several parliamentary Committees expressed an opinion. In order to underpin its opinion, the Committee for the Future examined the Russia scenarios it had prepared in previous parliamentary terms and invited experts to sketch new long-term geopolitical scenarios. The Committee concluded, inter alia, that, with uncertainty in the security environment increasing, it is ever more vital to deepen foresight competence in administration and in organisations as well as making it a civic skill in order to step up the regenerative resilience of society – a call which the Committee has already expressed before. Furthermore, the Committee considered it important from a security perspective that the well-being of children and young people should be ensured while maintaining a good social climate and a high level of societal trust amidst change.[4]

A third example illustrating the Committee for the Future's thematic spectrum can be identified in the EU space policy. In an opinion it submitted on this subject, the Committee for the Future draws attention, inter alia, to the international cooperation necessary to develop the Finnish space business; to the need to better regulate the race, spurred on by new capabilities, to make use of the space resources; and to backcasting-based visioning on how the sustainable

use of space could look like and what should be done to achieve that.[5]

Projects

Projects, which often involve the commissioning of customised studies, are one important tool to deepen the Committee's understanding. Moreover, projects serve as vehicles through which the Committee for the Future carries out its particular duties.

One of the Committee for the Future's particular duties is to monitor technological development, and there is no shortage in any parliamentary term of projects relating to this theme. In the 2019–2023 term, these projects deal with blockchains; the latest developments in gene technology; the interaction between the COVID-19 pandemic and technological development; sustainable development technologies; and the outlook for artificial-intelligence applications. Over the past ten years, the Committee for the Future has commissioned a series of foresight reports on the development and impacts of radical technologies,[6] and the background methodology of these reports is also available in a scientific article.[7]

Many of the Committee's technology foresight reports exploit the results generated by way of this methodology. For example, a project that mapped sustainable development technologies devised a method to evaluate emerging radical technologies in relation to how they can potentially promote the achievement of the 17 UN Sustainable Development Goals and the related subgoals.[8] According to this evaluation, radical technologies have the greatest potential for the following five Goals:

- SDG 1: End poverty in all its forms everywhere: Production factors are more evenly distributed when the production and storage of renewable energy, 3D printers and robots capable of customisation enable efficient local production as they develop. Digitalisation of transactions, AI services and platform cooperatives support livelihoods independently of location.
- SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all: The conditions for acquiring professional skills will be improved when access to information networks enables telepresence and crowdsourcing, as well as independent training supported by AI. Remote guidance is possible with AR technology in almost any task. Micro-entrepreneurship is facilitated through the increasing use of location-independent production technologies, work carried out on digital platforms and distance selling.
- SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all: Equal opportunities arise when everyone with access to information networks has access to high-quality educational materials and game-based peer learning. Skills are demonstrated, for example, by managing simulated virtual world situations. AI assistants, independent

environmental screening with personal measuring devices and crowdsourced data processed with AI are becoming increasingly accessible and affordable.

- SDG 10: Reduce income inequality within and among countries: In particular, cheap energy, such as solar film integrated into building surfaces or synthetic fuels produced locally from water and carbon dioxide, decentralised energy reserves and the development of telepresence technologies, will help bridge global development gaps.
- SDG 11: Make cities and human settlements inclusive, safe, resilient, and sustainable: Resource consumption and urban mobility can become more sustainable through autonomous and electronic passenger transport, robotised waste management, virtual world rooms in buildings, indoor farming facilities and robotised communal kitchens. Augmented reality and digital twins of buildings will close the competence gap in construction and maintenance. Crowdsourced safety solutions prevent crime.

In the forewords to the project reports it commissions, the Committee for the Future expresses its own view on the study results. For example, the Committee pointed out the following regarding how to solve the Sustainable Development Goals: "*despite the exciting potential of many technologies, it is vital to draw attention to the 2030 Agenda goals at the bottom of the list: while technology supports the well-being of humans in many ways, the major challenge is to make the functioning and exploitation of aquatic and terrestrial ecosystems sustainable through technology alone. Radical technologies are of course helpful as they help reduce emissions and increase the efficiency of food production so that the surface area of agricultural land can be reduced. However, technology provides no silver bullet for restoring the balance of ecosystems that is already shaking. In order to stabilise ecosystems rapidly, it is therefore absolutely necessary to make other kinds of political decisions and introduce restrictions to ensure the regenerative capacity of nature. The second message from the Committee is that, although technological progress is not expected to stop, it will not in itself progress in a way that will inevitably support sustainable development. Individual technologies do not change the world but must be interlinked and linked to the work and everyday life of people in a way that creates new ways of doing things*."

Another particular duty with which the Committee for the Future is tasked concerns the monitoring of futures research and related methods. As the COVID-19 epidemic escalated into a pandemic, the Committee commissioned a study charting how the potential for a pandemic had been anticipated in international foresight reports published in previous years and what are the threats highlighted in these reports that have not materialised yet. In the foresight reports analysed, more than 400 different future phenomena were identified. The results indicated that the potential for a pandemic was regularly present in

the material. Of the 20 reports subjected to a close analysis, nine raised the potential for a pandemic. Pandemics were the most commonly mentioned anticipated health threat.

Owing to the different methodologies employed in these reports, it cannot be unequivocally said what individual as-yet-unmaterialised threats would feature most often in the material, yet the most commonly featuring risk types were the following: the adverse effects and unethical applications of technological development; the impacts of climate change; health threats; the problems associated with energy production and energy consumption; economic volatility risks; the challenges faced by global decision-making; the tensions created in the global economy by globalisation; challenges to democracy; detriments to well-being; and food insecurity. In the foreword to the project publication, the Committee for the Future commented that "*on the basis of the work carried out by the global foresight community, a multi-faceted picture can be created of the possible futures together with the associated risks and opportunities. It appears that the real challenge lies with how to make better use of foresight data*." In this connection, the Committee also voiced its view on the process whereby better use could be made of international foresight data in Finnish decision-making.

Additionally, projects are launched according to the areas of interest expressed by the Committee members. At the start of a parliamentary term, in particular, the Committee consults futures researchers and other researchers on themes which they have chosen and from which the Committee members then pick for further analysis the topics that they consider the most important. In that way, the following themes, among others, have been reviewed: developments in Russia; the changing nature of knowledge production; new well-being economy indicators; the future of Nordic cooperation; the wild cards of European development; use in society of the methods of art; and the future of ageing.

Activity development through experiments

The Committee for the Future serves as Parliament's think tank, meaning that it is for the Committee to also develop new innovations for democracy and for political decision-making. Among other innovations, the Committee has been developing a virtual Committee as well as experimenting with involving citizens in bill drafting on digital platforms while developing dialogic methods and using the experiential nature of art to give practical shape to the opportunities opened up by the future. Additionally, the Committee has tested the ways in which conversational artificial intelligence presents and justifies its views. In 2022, the Committee is piloting future coaching to decision makers.

At the initiative of the Committee for the Future, creative facilities were constructed in Parliament where the Committees can engage in discussion in an environment more inspiring than the normal conference room and

where experts can organise workshops in order to develop cross-disciplinary or multi-stakeholder syntheses of the themes that are of interest to the Committee.

While the Committee for the Future does commission studies, it is not a research organisation. Rather, it utilises research data for the purposes of its political policy-making. However, some of the studies commissioned by the Committee for the Future also develop futures research and foresight methods. Regarding this, the projects and/or publications commissioned by the Committee have developed a Radical Technologies foresight method, a dialectic futures research method, arts-mediated expert dialogue, new statistical methodologies, and more. Ideally, a commission from the Committee will inspire the organisation carrying out the study to continue innovative research or development efforts also after completing the Committee's study.

Part III. Committee suggestions

Introduction: On the path to 2222

As a basis for selecting the topics it wishes to highlight to the committees of future from other parliaments, the Committee for the Future prepared two background materials. The first background material was a general introduction on the themes that the Committee itself foregrounds in the statements it has published during the current parliamentary term and in previous ones. The second material was compiled by requesting opinions from some 30 experts or organisations suggested by the Committee members on the future issues that these parties consider appropriate for examination at the World Summits of Committees on Future. The questions proposed by these experts concern a wide range of development trends and threats regarding the economy, health, security and exceeding the limits of our planet; important social objectives and the means to safeguard them; ethical exploitation of technology and artificial intelligence; the importance of culture as a force shaping the future; development of futures capabilities; and the role of committees of future.

After the members studied this background material, the Committee for the Future convened to discuss and to draw conclusions. This discussion was held in the form of a workshop in Parliament's creative facilities. As the weather was beautiful, use was made of the outdoors terrace forming part of the creative facilities. The Chair invited all Committee members, each in their turn, to present their informal view on the topics that they would like to see highlighted at the World Summits of Committees on Future. When it was their turn to express their views, the members commented on the ideas put forward by the other members, remarked on the related issues which the Committee had already examined before and injected into the discussion new ideas which they had given serious thought while reviewing the background material. The Committee secretariat collected the issues presented on Post-It notes, which were grouped to coherent blocks

during the discussion. Members were allowed to request permission to speak as many times as they wanted. At the workshop, a common understanding was reached that the blocks created were felt to be important and well representative of the Committee as a whole.

The discussion naturally resulted in five topics as well as in a widely shared view connecting them, which the members named 'Path 2222'. According to this view, for the World Summit, angles ought to be proposed which would be relevant in a 200-year perspective or processes that in this period could facilitate developments in a direction evaluated as positive. Furthermore, the discussion raised the question of interconnectedness between these goals. Regarding this, the Committee for the Future highlighted the principle, which it has frequently addressed, whereby individual challenges should be so tackled that this also makes it easier to face other known challenges. The need for a green transition, in particular, is so obvious that in practice all decision-making should strive for solutions that at the same time promote the transition towards the natural-resource saving and environmental-degradation mitigating circular economy and that support the societal crisis resilience and regeneration capacity, or regenerative resilience.

Below is an overview of the five intertwined future issues especially highlighted by the Committee in that specific context.

Technological exploitation setting the course for the future of humankind

The Committee for the Future has commissioned a range of studies on the impacts of radical technologies in the long haul. Looking at the present moment 200 years from now, we see that the start of this millennium is characterised by progressive utilisation of the internet and an increasing replacement of fossil energy by electrical energy. Breakthroughs are about to be made with the broad use of artificial intelligence and space technologies. On the basis of the studies commissioned by the Committee, neural networks and deep learning, robotisation of traffic and logistics, new imaging and positioning solutions, proliferation of artificial intelligence-powered platform services, improvement of genome transcription and editing, development of solar power, speech recognition and synthetic speech technologies as well as dozens of other radical solutions will all produce changes, already over the coming decades, both in the ways in which many sectors of industry work and in how people's day-to-day life is organised.

The socio-technical institutions that have made possible sectors such as information, education, defence and decision-making, are changing. These changes may bring new prosperity, yet they may also lead to novel types of malaise. Additionally, the distribution of prosperity and malaise may evolve.

This is nothing new per se. Technology-enabled new practices have contributed to shaping the history of humankind ever since the very first tools were developed. For their part, agriculture technologies and storage technologies made specialisation and urbanisation possible. The human population began to grow, while lifestyles were transformed as we intensified food production, learned to exploit fossil energy sources and developed industrial production and logistics. In recent decades, the rise of the internet and advancing digitalisation have introduced novel interaction models both into our everyday life and into our economy.

We are in a situation where interlinked technology solutions enable an ever-increasing number of ways of being and doing things. Yet at the same time we are acutely aware that humankind is consuming our planet's resources at a speed more rapid than what it takes for these resources to renew or to recycle for reuse. The biosphere, the foundation for the existence of humankind, is constantly degrading.

- *The Committee for the Future notes that the history of humankind is also the history of technology. Similarly, the future of humankind serves as the future of technology. But our past ways of exploiting technology have put us in an unsustainable situation.*
- *In this situation, the Committee for the Future puts forward the question: how do we direct the technological potential of humankind towards tackling global problems, to support ecological reconstruction of the economy?*

Algorithms manipulating our inner caveman

Knowledge-based decision-making, and the nature of knowledge and of expertise, have emerged in many ways in discussions held by the Committees for the Future over the course of a number of parliamentary terms. For example, the Committee has long stressed the importance of versatile monitoring indicators in the decision-making process that strives for sustainable development and a green transition. At its workshop, the Committee highlighted as particularly vital the importance of the algorithmisation of information to social development.

Through algorithms, a great number of good things can be automated. In the field of information and media, however, the use of algorithms has led to a situation where psychologically addictive, irritation- and excitement-inducing contents are generated automatically. They confuse and provoke our 'inner caveman', who skips source criticism, reacts emotionally, seeks company with groups of like-minded people and sees as an enemy anyone who disagrees. Whoever owns the algorithms that best appeal to our inner caveman can most effectively drive their own agenda, which does not need to have anything to do with the common good.

In particular, the Committee raised the issue of information control by corporations and governments: the entities with the power to control and develop information algorithms may, through hybrid influencing and information operations,

by mass manipulation on social media and even through the dissemination of incorrect and distorted information and hate speech, be able to convince a significant proportion of people of the authenticity of non-science-based views.

- *The Committee for the Future notes that as the gulf between people's perceptions of reality widens, the views on the state of the world and on the nature of the problems to be addressed drift apart, generating new divisions within societies. Self-interested use of algorithms may aim to ruin the trust citizens have in representative decision-making being able to define what the relevant common challenges are and to decide on the solutions to tackle these challenges.*
- *In this specific context, the Committee for the Future wishes to ask: what is happening to information? How can we guarantee reliable and credible information on the global situation and on the state of the world? How to control the relationship between freedom of speech and information influence in the digital reality guided by algorithms?*

Humanity in 200 years?

Monitoring the opportunities opened up by technology, digitalisation and artificial intelligence prompted the Committee for the Future to ask the question: how will an increasingly technologising living environment affect the development of our brain and of our well-being in the long term? We have evolved to use not only our minds but our bodies too, and spending extended periods of time in digital and even virtual environments is an unprecedented situation for our species. The implications remain as yet unknown. Will someone living in 2222 experience their body and physical health as well as humanity and communality in the same way as someone living in 2022?

While technology-enabled interaction may shape the way we live as humans, various crisis situations, which are made more frequent by the limits of our planet being exceeded, may also play a role in affecting our values, valuations, lifestyles, art, and entire culture. Additionally, we are affected by how we experience coping with crisis situations. In order to survive future crises, it is likely that humankind must be able rethink our lifestyles, values and self-expression.

- *The Committee for the Future notes that the well-being of the men, women and children of the future calls for a new type of relationship with technology and the environment. Today, we cannot yet tell what the elements of that relationship will be. However, the concept of 'ecosocial intelligence' provides a good starting point: an ecosocially intelligent person is capable of critical and systemic analysis, has mastery of collaborative learning and nonviolent communication skills, and values, in particular, ecological and interpersonal factors and a meaningful life.*

- *The Committee for the Future puts forward the question: How do we support the development of an eco-social civilisation – humanity that strives to establish a balanced equilibrium between human activity and the limits of our planet?*

Of what is hope born?

Examining the future at the level of the individual is one of the priorities selected by the Committee for the Future for the current parliamentary term. The future is not made exclusively through institutional solutions dictated from the top down; instead, the future is lived in the life choices we make every day. In order for these choices to translate into a sustainable and good society in the long haul, common goals that citizens can easily understand are needed, as well as inclusion in shaping these goals. We need trust that everyone is free to realise their potential in a way that empowers an individual to shape his or her own future while promoting the common good.

Furthermore, what is needed from citizens is mental resilience and regeneration capacity when achievement of the goals is challenging. Mental resilience helps to cope with everyday crises and to orient oneself towards the future. For example, climate anxiety and burnout weaken mental resilience while feelings of meaningfulness and of belonging to a community bolster it. People's feelings of opportunities and of not being left behind build hope and peace. If people feel that opportunities are narrowing and hope is diminishing, the trust that decision makers promote the common good also falls.

- *The Committee for the Future underscores that the hope young people have, in particular, must be nurtured. At the same time it is key to ensure that everyone – children, young people, the working age population and the elderly alike – feel inclusion in the community and that they are free to implement their potential in a way that will improve our society.*
- *The Committee for the Future puts forward the question: what does it require at the level of the individual to achieve a good future? What are the best ways to inspire in citizens mental resilience, hope, cohesion and trust in our society and in the common good?*

We need future skills

In the view of the Committee for the Future, people should also be able to exert a conscious influence over the future they – and the future generations – will live. Future power must not be exclusively restricted to the top echelons of society.

A situation has arisen for our humankind where we must be able to envisage a new, good future. We are aware that it benefits neither our children nor our planet to wish that the future would be created as a direct continuum from present trends. What is more, recent years have taught us that shocks can shake and realign the world regardless

of how realistic we have considered these trends to be. The future is affected by a far greater spectrum of factors and agency than what we can perceive and discern. It has become clear that we are unable to predict the future; therefore, it would be better to learn to make provision for a multitude of possible future developments. But how to develop more flexible reasoning of this type?

The concept of 'future consciousness' can describe our relationship with the future. Studies have shown it to be composed of a way of contemplating causal relationships; of an understanding of the systemic impact of things on other things; of agency beliefs; of perceived responsibility in relation to the surrounding world; and of openness to alternatives.[9] Future consciousness keeps us open and functional when faced with uncertainty. It enables both the imagination of different futures and the decisions and actions to achieve inspiring futures and to fight threats.[10]

In the interests of influencing the future, it is crucial to understand this: the future does not exist yet, which is why our understanding of it is to a large extent based on our reasoning structures and on the limits of what we are able to imagine. We can alleviate these constraints, for example, by reviewing various foresight materials and by questioning our entrenched assumptions. The formation of alternative images of futures and discussing these images connect them both. It is appropriate to examine good opportunities, even radical ones, as well as risks that may be dystopic while asking why do they perhaps appear too wild or unlikely to merit serious consideration. It is easier for people to take action in response to the threats and opportunities that they have already dared imagine.

Although it may be challenging to concentrate on envisaging different futures because of the pressing needs of everyday life, everyone can develop their future skills. That is why the Committee has proposed that future skills and competences should be cross-societal civic skills and that strengthening them should be included as part of the educational curricula and the updating training of administration and decision makers. In order to lead by example, the Committee for the Future placed an order for a pilot training course for the development of decision makers' future skills. This training is being developed jointly with the Finland Futures Research Centre operating under the auspices of the University of Turku. Produced in the form of teletraining, the first trials demonstrate that, apart from being useful, future coaching is felt to provide a meaningful break for reflection from the hectic life of decision makers.

- *The Committee for the Future highlights the importance of future skills in people's everyday life. In the view of the Committee for the Future, future skills benefit people of all ages from children to the elderly. Future skills make it possible to imagine and strive for good futures, keeping people functional when faced with uncertainty. There are large benefits to society if the public sector, associations, businesses and politics are all staffed with people with great future skills.*
- *The Committee for the Future puts forward the question: how can we develop future skills into a civic skill equal to literacy?*

Our understanding of the future is to a large extent based on our reasoning structures and on the limits of what we are able to imagine.

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PARLIAMENT OF ICELAND



COMMITTEE INTRODUCTION
THE FUTURE COMMITTEE

Part I. Committee Facts

In 2018, the prime minister of Iceland established a committee called the Future Committee, composed of members of parliament from all parties. The aim was to analyse the development of the main trends that will shape the society in the future, especially regarding technological progress, and environmental and demographic developments. In June 2021, the committee was moved to the Parliament of Iceland.

The Parliament selected the members of the Future Committee in December 2021. The committee will remain active until at least the end of the current mandate period. The main role of the Future Committee is to consider and evaluate Iceland's challenges and opportunities in the future, e.g. technological changes, long-term changes in interactions with nature, demographic changes, and automation. Other parliamentary committees may request its opinion on bills they are being processed and other parliamentary affairs.

The Future Committee is composed of eleven members, representing all parliamentary groups. A minimum of five MPs from the opposition parties are members of the committee. MPs from the government and opposition parties alternate as chair and deputy chair for one year at a time. Mr. Logi Einarsson of the Social Democratic Alliance, an opposition party, is the current chairman. The current deputy chair is Ms. Lilja Rannveig Sigurgeirsdóttir, a member of one of the ruling parties, the Progressive Party. Other members are Mr. Ágúst Bjarni Garðarsson (Progressive Party), Ms. Halldóra Mogensen (Pirate Party), Ms. Hildur Sverrisdóttir (Independence Party), Mr. Jakob Frímann Magnússon (People's Party), Mr. Njáll Trausti Friðbertsson (Independence Party), Mr. Orri Páll Jóhannsson (Left-Green Movement), Mr. Sigmar Guðmundsson (Liberal Reform Party), Mr. Sigmundur Davíð Gunnlaugsson (Centre Party), and Ms. Steinunn Þóra Árnadóttir (Left-Green Movement).

Part II. Examples of Committee Work

On 28 January 2022, the committee met for the first time and received an introduction on the work of its predecessor, the Prime Minister's Future Committee. The Prime Minister's Future Committee issued a report in November 2019 on Icelandic society 2035–2040, which focused on the development of the economy, environment, populated areas, and demographic factors.

The main conclusions and recommendations of the report are as follows:

- It will be examined whether education and lifelong learning should be merged into one flexible education system.
- Manpower and future skills must be evaluated regularly.
- It is important that legislation keeps up with developments in the labour market and the economy so that the rights of individuals are protected without impeding innovation.
- The government's revenue collection needs to be constantly reviewed regarding changes in tax bases, due to increased globalisation and changes in the labour market.
- Diversity in business and sustainability in resource utilisation is a key factor for long-term stability.
- The impact of automation in rural and fragile areas needs to be more thoroughly analysed.
- The demographic change, together with changes in the cross-border flow of people, create societal challenges that need to be solved.

The Committee for the Future of the Finnish Parliament is to a large extent a role model for the Future Committee of the Parliament as well its predecessor, the Prime Minister's Future Committee. Therefore, on 30–31 March 2022, the committee members visited the Parliament of Finland and the Prime Minister's Office with the purpose of learning about the role and working methods of the Committee for the Future in Finland. Before the visit to Finland, the committee members attended a course in foresight and scenario planning held by the Icelandic Centre for Future Studies.

The visit to Finland was very informative for the members of the Future Committee of the Parliament of Iceland. The valuable meetings with the Committee for the Future and the Government Foresight Group at the Prime Minister's Office and learning first-hand how advanced Finland is in terms of strategic foresight in policy making, shed a light on the committee's dialogue with the government on future challenges and opportunities.

At the end of May 2022, the Future Committee had a virtual meeting with the Committee for the Future of the Seimas, the Parliament of Lithuania. The committees exchanged information about their work and agenda and plans on maintaining the dialogue. Last June, the Future Committee issued a working plan for 2022–2023. The first item on the agenda is to organise a think tank with all relevant stakeholders to discuss how technological change can lead to a sustainable and fair transition and prosperity while building future scenarios. It will be followed up by a conference at the beginning of 2023.

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Part III. Committee Suggestions

Stability and slow changes characterised societies of the past, but modern societies need to be able to adapt to rapid changes. The future is not a linear function of the past, and exponential growth characterises technological change, which is one of the main driving forces of the 21st century. Global climate change is one of the greatest challenges for the world's economies and cooperation between nations is vital. The Future Committee of the Parliament of Iceland welcomes follow-up collaboration with the Committees of the Future World Summit in Helsinki. Collaboration in the field of future studies can only be regarded as a gain for all the parliaments involved.

The Future Committee of the Parliament of Iceland proposes the following future challenges or opportunities to be discussed at Committees of the Future summits beyond 2022:

- The future of democracy.
- Technological changes leading to sustainable and fair transition and prosperity.
- Demographic transition.

Furthermore, the committee proposes a mutual website for the committees with shared vocabulary and examples of best practises in strategic foresight and scenarios planning to facilitate networking and collaboration. •

Diversity in business and sustainability in resource utilisation is a key factor for long-term stability.

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THE SEIMAS (PARLIAMENT) OF THE REPUBLIC OF LITHUANIA



COMMITTEE FOR THE FUTURE OF THE SEIMAS

Part I. Committee facts

- 'The Seimas (Parliament) of the Republic of Lithuania has established a Committee for the Future (Ateities komitetas) on 23 December 2020.
- The idea to establish the Committee stemmed from the need to shape the long-term political culture and holistic thinking about the future of Lithuania as well as do develop the system of forecasting and foresight as a common pillar of political decision-making and policy-shaping in all sectors.
- Article 44^2 of the Statute of the Seimas provides that the composition of the Committee shall be based on the principle of proportional representation of the Seimas political groups. The Committee now has **19 members** of the Seimas who represent all parliamentary political groups.
- Members of the other Committees of the Seimas may become members of the Committee for the Future as well. The same rule equally applies only to the Seimas Committee on European Affairs. Currently 14 Committees, i.e. all Committees except for the Seimas Committee on Legal Affairs and the Seimas Committee on Foreign Affairs, are represented in the Committee for the Future.
- Professor Raimundas Lopata, a representative of the Liberals Movement Political Group, has been elected as the first Chair of the Committee. Mr Lukas Savickas, a representative of the Lithuanian Farmers and Greens Union Political Group, and Mr Matas Maldeikis, a representative of the Homeland Union-Lithuanian Christian Democrat Political Group, have been elected as Deputy Chairs.

Members of the Committee for the Future of the Seimas:



Raimundas LOPATA
Chair



Matas MALDEIKIS
Deputy Chair



Lukas SAVICKAS
Deputy Chair



Kasparas ADOMAITIS
Member



Zigmantas BALČYTIS
Member



Kristijonas BARTOŠEVIČIUS
Member



Rasa BUDBERGYTĖ
Member



Justas DŽIUGELIS
Member



Aidas GEDVILAS
Member



Ligita GIRSKIENĖ
Member



Asta
KUBILIENĖ
Member



Paulė
KUZMICKIENĖ
Member



Laima
NAGIENĖ
Member



Andrius
NAVICKAS
Member



Monika
OŠMIANSKIENĖ
Member



Liuda
POCIŪNIENĖ
Member



Viktoras
PRANCKIETIS
Member



Valdemaras
VALKIŪNAS
Member



Kęstutis
VILKAUSKAS
Member

Office of the Committee consists of the Head of the Office, Ms Kosma Gulbinskienė, Advisers to the Committee, Prof. Arūnas Augustinaitis, Ms Ieva Lavišienė, Ms Miglė Paulauskė, Dr. Giedrius Viliūnas, and Assistant to the Committee, Ms Giedrė Mickienė.

Committee for the Future is composed following the principle of proportional representation of the Seimas political groups:
Homeland Union – Lithuanian Christian Democrat Political Group: 6 members; Political group of Democrats 'For Lithuania': 3 members; Lithuanian Farmers and Greens Union Political Group: 2 members; Liberals Movement Political Group: 2 members; Freedom Party Political Group: 2 members; Lithuanian Social Democratic Party Political Group: 2 members; Labour Party Political Group: 1 member; Lithuanian Regions Political Group: 1 member.

Article 58[1] of the Statute of the Seimas provides for eight areas of activity of the Committee for the Future. The aim is to coordinate the development of Lithuania's long-term vision as well as ensure implementation control of long-term progress strategies. The remit of the Committee consists of preparation of and discussion on modelling of the future national and social development, development of innovations and technological progress, as well as emigration and re-emigration processes and their impact on the development of the society; drafting laws and other legal acts regulating state modernisation and strategic reforms, as well as submission of and discussions on proposals on these issues.

Part II. Examples of Committee work

During the first three full parliamentary sessions since its establishment, the Committee has held 58 Committee meetings; 37 debates with policy-makers, social partners and academia; and 10 debates with international counterparts; has delivered several reports to the Seimas on pressing issues of state and social life; has taken the leading role in embedding the futures thinking element into the system of strategic governance of Lithuania; has served as a platform for discussing strategic laws and reforms; and has placed new topics of strategic importance on the political agenda.

The scope of the Committee work may be illustrated by the following examples:

- Participation in the governing structures involved in preparation of Lithuania's long-term strategy *Lithuania 2050* and input into the process;
- Amendments to the Law on Strategic Governance, introducing elements of foresight and futures thinking;
- Constant focus on shaping and development of the national futures-thinking ecosystem. It includes both suggestions for the Government and strengthening of the analytical capacities of the Seimas;
- Matching strategic governance with budget funding;

- Constant focus on public sector innovation, GovTech, CivicTech, in particular exploring the possibilities of crowdsourcing and nudging;
- Serving as the lead committee for the approval of the Law on Official Statistics and Data Governance that will create an integrated platform for the use of public data and big data analytics;
- In-depth discussions on key reforms implemented by the Government in public governance, education, science, technology and innovation;
- Support to the development of trans-sectorial policies on skills, evidence-informed policy making and data-driven governance;
- Discussions on trends in national demographic development, migration, integration, talent attraction and retention;
- Serving as a sounding body for reforms and strategies on the Green Deal, Digitalization, Sustainable Development and Smart Specialization;
- Particular focus on strategies on the future of transport, energy, transformation of industry and agriculture;
- Input to parliamentary discussion of crisis and emergency management from the perspective of continuity, institutional change and coordination, with a focus on stress-testing and cross-checking of policies and institutions;
- Hearing of strategic foresight reports of the European Commission and serving as a catalyst for their integration into the Lithuanian policy-making;
- Bringing forward the need of vision and joint policy for strengthening and developing the civic society, including the aspects of resilience and public participation.
- On 30 June 2021, the Chair of the Committee, Prof. Raimundas Lopata, presented the report 'Challenges of Designing the Future of Lithuania' at the plenary session of the Seimas.
- On 7 December 2021, the Seimas adopted the Resolution on Future Digital Transformation and Digital Sovereignty in Lithuania prepared by the Committee for the Future.
- On 18 February 2022, the Committee adopted the Resolution on the Future of Demographic Policy and Social Development.

Part III. Committee suggestions

1. **Purpose and scope of CFF in parliamentary activity**. Futures thinking as a distinct area of activity is still a novelty in parliamentary practice. It needs conceptual underpinnings and practical agenda. We believe that this should be a constant topic in further fora of CFFs.
2. **Ecosystem of anticipatory governance**. In order to achieve their goals, foresight and other futures-thinking related activities should be embedded in structures and processes of public governance across all parts of the state. Exchange of good practices and discussions on what parliaments could and should do in order to enhance the formation of culture of anticipatory governance would be very helpful.

3. **International and global agendas of CFF**. CFFs should become instrumental in joining the efforts of parliaments to face global and regional challenges. We could elaborate on what we can be best at with the view to implementing SDGs, Twin Transition (Europe) and other international strategies. With this intention in mind, we shall discuss connecting to ESPAS as well as establishing constant relations with the EP, the relevant bodies of UNESCO, etc.
4. **Parliaments and technology foresight**. Technology ranks among the major drivers of global change, both posing challenges and opening opportunities for preserving the natural environment and fostering human development. Many parliaments may feel stressed by the volume of changes in the field of technology; joining the efforts to understand and manage these changes may bring value added to the service that SFFs provide to their parent parliaments and internationally.

Future of democracy. Parliaments are guards and guarantees of democratic governance and civic society by their very nature. As we can see, democracy in under threat in many parts of the world. New forms and possibilities of revitalising and securing democratic future of the world would be a timely and appropriate topic for parliamentary CFFs around the globe. •

Technology ranks among the major drivers of global change, both posing challenges and opening opportunities for preserving the natural environment and fostering human development.

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CONGRESS OF PARAGUAY



SPECIAL COMMITTEE FOR THE FUTURE FOR MID AND LONG TERM STRATEGIC AFFAIRS

Part I. Committee facts

Paraguay's Lower Chamber's *Special Committee for the Future for Mid and Long term Strategic Affairs* was created on March 30th 2022 (Resolution 3154), with the main objective to deal with strategic issues concerning technology, innovation and society overall to proactively focus on the major discussions that must take place in Paraguay bearing in mind current context and thinking about how major structural changes could be driven through public policies that go beyond a 5-year Constitutional legislative term.

This initiative has been created with the objective to discuss Paraguay's major structural challenges and proactively bring up challenges that are to come, based on experiences from other Parliaments around the world, but specifically thought to complement the initiative carried out by Paraguay's Executive Branch called National Innovation Strategy (Estrategia Nacional de Innovación, created by Presidential Decree 2314/2019) from Paraguay's Legislative Branch.

For operative purposes, the Special Committee was created as a Sub-Committee of the Information and Communication Technology (ICT) Committee, therefore, Chairman and Advisory is same for both Committees.

An Agenda beyond Elections

The idea of creating a Legislative Special Committee for the Future for Mid and Long term Strategic Affairs comes from recent experiences with Paraguay's Legislative Branch's need to set a proactive roadmap to deal with issues that have either been discussed in the region or are being discussed globally. Paraguay's legislative productivity tends to be affected by frequent electoral periods (Every 2 and half years), causing many decisions and legislative

initiatives to be reactive, sometimes leading to a superficial approach, rather than following in-depth discussions which tend to be postponed.

Therefore, there is a need to add *the future* in decision-making, thinking beyond a 5-year term, not focusing so much on elections but bringing future generations to the agenda, identifying signs of what could represent opportunities, threats, transformations currently in place, and disruptive changes that are to come.

The fact that the Special Committee started its sessions at the end of current term, and with upcoming Presidential and Legislative Elections expected to take place in April

2023, sets an interesting challenge which is to present most issues discussed during sessions that take place until the end of the year to Presidential Candidates through a Resolution to be approved by Lower Chamber to suggest these discussions are included in their campaign agendas and proposals.

Part II. Examples of Committee work

The Special Committee had its opening session on May 26th 2022, with participation of Legislators from all Political Parties represented in Paraguay's Lower Chamber and it took place in the form of a public hearing, with representatives of Private Sector, SMEs and Entrepreneurs' Associations, representatives of Public and Private Universities, Ministries and Directors from Executive Branch, Director of National Innovation Strategy, representatives of Secondary School Student Councils, and several civil society organizations.

This first session brought up the issues they considered most relevant to be part of Special Committee's Agenda for the rest of the year. Most of the issues discussed concerned post-Covid initiatives regarding the future of education, future of health services, and public services, and urgent measures for economic recovery.

Furthermore, in June 2022, another session of the *Special Committee for the Future* took place, addressing issues concerning *the future of Democracy*, leading to presentation of Committee's first legislative initiative which consisted of a draft bill to digitalize Constitutional Popular Initiatives procedures presented

to Paraguay's Congress. The Popular Initiative is one of the four mechanisms established in Paraguay's Constitution to present a draft bill to be debated in Congress (others are through Legislative, Executive, and Judiciary Branches), however as of now the mechanism was inapplicable because of the high number of manual signatures required which made and actual barrier. This bill intended to adapt updated electronic identification and signature legislation to this mechanism, in order to incentive civic participation. The bill has now been approved by both Chambers and is expected to be passed by Presidential decree.

In addition, the *Special Committee* recently supported the opening of *The* Catapult, which is leadership program for Paraguayan youngsters in their final high school year, organized by Feliciano Martinez Foundation in partnership with Konrad Adenauer Foundation, expecting to guide young adults in their final school year into tools to develop leadership skills and guide them through their first year of a professional roadmap.

The *Special Committee* is currently setting up its next sessions that will discuss The Future of Asunción (Paraguay's Capital City), bringing together both Municipal and excecutive authorities, as well as representatives of Private sector

and Civic Society to discuss urgent projects to be implemented in the city. In addition, their plans in place for sessions to discuss *Future of Business* in Paraguay in collaboration with Paraguay's Venture Capital Association, *Future of Education* in collaboration with a well-known global platform for online education, and *Work for the Future.*

Part III. Committee suggestions

The *Special Committee* is developing a participative process in all its sessions, with support of experts in each of the issues that are addressed. The immediate plan is to set an agenda on all the issues that were considered top priority in the opening sessions, especially considering the electoral period currently in place, hoping to have an outcome by the end of the year which can set grassroots for a roadmap of legislative discussions that should take place next year, especially those that must be considered top priority for incoming Government.

National Innovation Strategy

During this Presidential term, the *National Innovation Strategy* has come up with the pillars of the main challenges it wants to focus on for the upcoming years. However, the operative unit still faces the challenge to stay in place during the next Presidential term, considering experiences that took place in which new coming Governments erased what was done before, forcing them to start all over again. Therefore, it is important that the *Special Committee* becomes a political support for this initiative which has gone through discussions of main challenges Paraguay is expected to face in the near future.

Beyond traditional legislative procedure

The *Special Committee for the Future* plans to go beyond traditional discussion format followed by Lower Chamber's permanent committees which study legislative initiatives based on draft bills or projects presented by Legislators, those passed by the Senate, or promoted by the Executive or Judiciary Branches. Upon open discussions that take place based on the agenda set for the year, the Committee intends to present its own bills o resolutions after previous open discussions with stakeholders and representatives from both private and public sector who attend the public hearings.

Paraguay faces interesting challenges in the upcoming years to set itself on the road of growth, development, and opportunities. Therefore, addressing issues before they take place, or at least while still on time, can make a big difference in helping obtain better results for its people, and consequently for the region as a whole. The road to prosperity can become smoother and shorter if we are able to guide through broad discussions that involve society as a whole using a futures perspective that goes far beyond quick immediate results as usually expected but instead provide a holistic approach that looks a bigger result following a sleek process that looks at a bigger picture and thinks in the long term. •

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CONGRESS OF THE PHILIPPINES



THE PHILIPPINE SENATE COMMITTEE ON SUSTAINABLE DEVELOPMENT GOALS (SDGS), INNOVATION, AND FUTURES THINKING

Part I: Committee Facts

The Philippine Senate Committee on Sustainable Development Goals (SDGs), Innovation, and Futures Thinking was created through the efforts of Senator Pia S. Cayetano in 2019, during the 18th Congress. This is the first time that a Committee on futures thinking was established in the Philippine Senate. This was inspired by Finland, which established its Committee for the Future back in 1993.

The Committee, through its Chairperson, makes interventions on various pieces of legislation and in the deliberation of the national budget to prepare for various futures and shift to a futures-oriented mindset, through the use of strategic foresight and futures thinking tools.

Senator Cayetano is the first and incumbent Chairperson of the Committee. The Rules of the Philippine Senate provide that the jurisdiction of the Committee is *"[a]ll matters relating to the United Nations 2030 Agenda for Sustainable Development and the assessment of the country's performance in attaining said development goals through policies, strategies, and actions for the development of desirable futures by using a multi-disciplinary approach in illuminating possibilities, outlining policy choices, and assessing alternatives."*

Part II. Examples of committee work

During the COVID-19 pandemic, the Committee held a series of hearings and invited futurists from all over the world to discuss the different futures of the Philippines beyond the pandemic, primarily on education, work, and health. From these hearings and from the Committee's own study and assessment even before the pandemic, it was able to work on the following:

A. National budget interventions: futures offices

Senator Cayetano, as the Senior Vice Chairperson of the Senate Committee on Finance, handled the national budget for the education sector for fiscal years (FY) 2020 to 2022, and the health sector for FY 2021 and 2022. Her amendments to the Philippine national budget sought to future-proof and use strategic foresight in its development.

The Senator pushed to grant the Development Academy of the Philippines additional funds tosupport lifelong learning and capacity building for government officials and employees instrategic foresight.

Through the initiative of the Senator, the Department of Education, the Department of Health, and the Department of Science and Technology established a Futures Office within their respective departments. A Sub-Committee on SDGs under the National Economic and Development Authority (NEDA) was also created.

In line with the initiative to empower citizens and institutions to be strategically prepared for all possible futures, funding for pilot research on the futures of food systems and food security was also provided for in four State Universities and Colleges. Funding was also given to the Department of Science and Technology to conduct research on the future of food production.

B. On futures thinking

Senator Cayetano filed Senate Resolution No. 393 in 2020, calling on the Committee to investigate how the COVID-19 pandemic affected various sectors, their plans to adapt and innovate in preparation for the New Normal, and their action plans to prepare for all possibilities and outcomes post-COVID-19, taking into consideration strategic foresight to analyze possible futures based on available intelligence and knowledge.

The Committee invited Dr. Tuomo Kuosa and Saku-Juhani Koskinen, futures thinking experts from Futures Platform, Helsinki, Finland. They discussed the use of their Foresight Radar, which charts how various trends and phenomena will be impacted by certain events. This tool, among other foresight tools such as the futures triangle, has helped the Committee in its work in advancing and institutionalizing futures thinking in policy-making.

C. On the futures of health

In relation to SDG 3, or Good health and Well-being, COVID-19 highlighted the need for innovation in healthcare. Senator Cayetano filed Senate Resolution No. 404 in 2020, entitled, Health Service Delivery For The New Normal, which called for the Committee to hold hearings on the effects of the COVID-19 pandemic on the future of health service delivery in the country for the new normal, and in preparation for future pandemics and other health emergencies.

The Committee concluded that the best future for health service delivery in the Philippines should have the following elements — focus on primary care, patient-centered care, increased use of technology (ex. telehealth, artificial intelligence, use of simulations in medical school), engagement with different communities (community healthcare), and prioritizing wellness and prevention (holistic health and promoting a healthy lifestyle) in the country.

D. On the futures of cities and transportation
In the Philippines, there is a need to improve transport infrastructure to keep people safe. Thus, Senator Cayetano authored and sponsored the Safe Pathways Network Act (Senate Bill No. 1582),[1] which passed in the Senate on third reading in 2021, during the 18th Congress, after hearings held by the Committee. This mandates more carefully planned and protected bicycle lanes and slow streets all over the country, promoting biking as a sustainable and accessible mode of transportation.

Senator Cayetano refiled this measure in 2022, during the 19th Congress, as Senate Bill No. 19, and the Committee held hearings once again to discuss the issues and push for the bill's passage into law. Senator Cayetano also filed bills to support sustainable cities in the future, such as the Sustainable Cities and Communities Act (Senate Bill No. 18)[2] and the Sustainable Transportation Act (Senate Bill No. 20),[3] which are likewise pending in the Committee for further hearings.

E. On the futures of education
In relation to SDG 4, or Quality Education, in 2020, the Committee held a series of hearings on the futures of education and work. The discussions and insights made can be applied when crafting education policy that will prepare Filipino students for the very different demands of education and work in the future.

The result of these hearings is the filing of the Committee Report on the Futures of Education, which seeks to provide direction and foresight to ensure the flexibility and responsiveness of the Philippines' education system to the volatilities, uncertainties, complexities, and ambiguities (VUCA) of the future, and allow learners to adapt to new careers and skills required for the future.

For the current 19th Congress, which began on 30 June 2022 and ends on 30 June 2025, the Committee hopes to continue its work on sustainable transportation, as well as address issues related to sustainable cities, the futures of food and food security, futures of health, and water sustainability, among others.

Part III Committee suggestions

Building on the work done by the Philippine Committee on Sustainable Development Goals, Innovation and Futures Thinking, the following are important challenges and opportunities that may be discussed in the World Summit of the Committees of the Future:

A. The Futures of Water
The growing global population has increased the demand for fresh drinking water, in combination with the climate crisis bringing unprecedented drought in many parts of the world.

According to UNESCO, 80% of the world is exposed to water insecurity, with an impending water crisis to emerge in 2070.[4] With water being vital to all forms of life, how do we meet the water requirements needed to support living organisms and their ecosystem?

B. The Futures of Food
According to the World Bank's Food Commodity Price Index, food prices around the world have increased by 80%, as compared to two years ago. Current threats like the COVID-19 pandemic and disputes among countries have disrupted the global supply chain, resulting in higher input costs and policy restrictions.[5]

In the next 30 years, the global population is expected to grow from 7.6B to 10B. This requires the world to produce 50% more food crops than it currently produces. With the climate crisis, how do we ensure global food security?[6]

C. The Futures of Cities
Cities all over the world are changing as the role of modern technology is slowly integrated into day-to-day activities. SDG 11 or Sustainable Cities and Communities, aims to "make cities and human settlements inclusive, safe, resilient, and sustainable". How do we create a city that provides for the social, economic, and environmental needs of people, while supporting the planet?

D. The Futures of Education and Work
COVID-19 highlighted that education needs to be flexible and adapted to different contexts. Whether in physical or distance learning, there is a need to ensure that students learn both hard skills (robotics, coding) and soft skills (leadership, adaptability, creativity, empathy) to prepare them for jobs of the future.

The future of work and the 4th Industrial Revolution are being characterized by the rise of automation, artificial intelligence, the gig economy, and various demographic and social changes. There is a need to plan and innovate toward a future of work that takes into account the different needs and possible disruptions of the future. How can we create an educational system that prepares and equips our children with the skills and jobs needed in the future?

E. The Futures of Health
Globalization and the risk of infectious diseases challenges how the government prevents, tracks, and responds to health risks in order to prevent dire economic and public health consequences. How do we transform the current healthcare system to adapt to the changing global landscape, taking into consideration future pandemics, climate change, environmental degradation, and technological advancement?

F. The Futures of Transportation
The view on transportation has slowly shifted from being car-centric to being people-centric.Instead of moving cars, sustainable mobility focuses on "transporting people and goods in ways that are safe, affordable, and ecologically-friendly." How do we seamlessly shift from traditional modes of transportation to more sustainable ones? •

How can we create an educational system that prepares and equips our children with the skills and jobs needed in the future?

1 Safe Pathways Act shall create pop-up bicycle lanes and emergency pathways connecting users to essential destinations.This may be adopted permanently even after COVID-19, as a solution to our congested roads and pollution.

2 The Sustainable Cities and Communities Act which seeks to address the problems brought about by rapid urban growth, and ensure that the development of cities and communities in the country will be geared towards sustainability, by encouraging and providing the necessary support to local government units so that they can transition into sustainable cities and communities.

3 The Sustainable Transportation Act which seeks to develop sustainable and alternative modes of transportationin order to reduce greenhouse gas emissions, lessen energy consumption, use precious urban areas efficiently, reduce time and travel costs as well as promote an active lifestyle.

4 https://en.unesco.org/courier/2019-1/delivering-water-security-changing-world

5 https://blogs.worldbank.org/opendata/food-prices-continued-their-two-year-long-upward-trajectory

6 https://www.jpmorganchase.com/news-stories/future-of-global-food-security

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SEJM OF THE REPUBLIC OF POLAND



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COMMITTEE ON DIGITISATION, INNOVATION AND MODERN TECHNOLOGIES

The Committee on Digitisation, Innovation and Modern Technologies is a body of the Sejm of the Republic of Poland, established to consider and prepare matters constituting the object of the Sejm's work and to express opinions on issues referred to it by the Sejm, the Marshal of the Sejm, the Presidium of the Sejm. It is also the body of the Sejm's control within the scope specified by the Constitution and laws of the Republic of Poland.

The first committee of this nature was established in the sixth term of the Polish Sejm. It dealt with innovation, computerisation and the development of information society and was called the Committee on Innovation and Modern Technologies. The Committee's name, and its scope of activities, remained in force for the subsequent seventh term of the Sejm.

The 8th Sejm renamed the Committee to its current name – Digitisation, Innovation and Modern Technologies – and extended its scope to include radio and telephone communications, computer networks and telecommunications.

The Committee's current tasks include working on legislative changes in innovation, computerisation, the development of the information society, radio and telephone communications, computer networks and telecommunications.

In carrying out this task, since its inception, the Committee has dealt, for example, with amendments to legislation that would facilitate innovative activities in the business sector and science. To this end, for example, the Act on Certain Forms of Support for Innovative Activity was amended and the Act amending certain acts in connection with support for innovation were passed. Among other things, the introduced provisions made it possible to speed up the payment of subsidies in the form of the so-called technology bonus; particularly, for companies presenting innovative products and services whose payback period could be significantly longer. They contributed to an increase in the interest of companies in technology credit and the development of creative activities. In addition, many legal barriers encountered by Polish scientific institutions were removed, including, among other things, the cooperation between science and

business. Taxation on in-kind contributions of intellectual and industrial property has been abolished, disposal of property by universities and research institutes has been facilitated, employment of specialists and taking up studies in Poland by foreigners has been made more manageable, and research and development activities have been supported. The solutions introduced have also contributed to the development of the venture capital market in Poland.

The Committee's work also focused on legislative changes in computerisation and digitisation of public administration, allowing digital services to be provided by public administration, digitisation of administration and many aspects of life. The idea behind these changes was to simplify the legal environment and create facilitations for citizens and entrepreneurs to make their contacts with the authorities more efficient and effective. The mechanisms and legal instruments introduced were necessary for developing e-government and e-economy.

Such results were brought about, among others, by the amendment to the Act on Computerisation of the Activities of Entities Performing Public Tasks. The amendment introduced mechanisms and instruments enabling the use, development and improvement of the functioning of the ePUAP platform (Electronic Platform of Public Administration Services) and introduced solutions in the regulations, which ensure the provision of e-services. The effect is an increase in the number and improvement of the quality of services provided electronically, as well as their accessibility, acceleration of specific activities in administrative proceedings, saving time previously spent on attending the office in person, and financial savings for the citizen, resulting from settling matters electronically.

The second law with a significant contribution to e-services was the Law on Trust Services and Electronic Identification. The entry into force of the Regulation of the European Parliament and the Council implied a new legal order in the area of trust services, which necessitated adapting national law to EU regulations. Above all, the Act was intended to unify trust services and lead to a situation where EU countries would mutually recognise electronic identification means. All that was done so that a citizen with, for example, an electronic signature could use it when using the administration e-services in any EU country.

In the current legislature, the Committee on Digitisation, Innovation and Modern Technologies has been proceeding with legislation on electronic delivery. That is a new service in Poland, which is becoming increasingly common thanks to the law regulation. Electronic delivery is the electronic equivalent of a registered letter with acknowledgement of receipt. With this service, it is possible to send and receive electronic documents via the Internet.

Nowadays, every Polish citizen can handle most official matters via the Internet, using a digital electronic signature, using applications and documents, and representatives of public entities make their services available electronically free of charge.

The legislation prepared to support the development of e-government made it easier to get through the difficult period of the pandemic and for the administration to use modern technologies in such areas as health care and education through applications supporting state services and citizens. These solutions concerned the quarantine system, control of the spread of infection, self-monitoring and the use of medical assistance by infected persons, and the provision of remote teaching.

The Committee on Digitisation, Innovation and Modern Technologies also exercises its right to initiate amendments to legislation. The most recent legislative initiative is a draft amendment to the Act of 23 May 1991 on trade unions. It is the result of the work of the Standing Subcommittee on Digital Algorithm Regulation, established by the Committee on 13 February 2020. In the course of its activities, the subcommittee cooperated, among others, with the Ombudsman, Chief Labour Inspector, President of the Office of Competition and Consumer Protection, representatives of academia (University of Łódź, Jagiellonian University), trade unions, social and economic organisations, initiating discussions and exchanging experiences on the challenges and risks of using digital algorithms for employees and employers. In addition to the legislative amendments prepared, the subcommittee also monitored national and EU activities concerning artificial intelligence. Among other things, it considered the Polish Government's position on the Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence and the Communication from the EC to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on promoting a European approach to artificial intelligence.

The Committee has also monitored the work of the Government by periodically asking members of the Council of Ministers, primarily the Minister of Digitisation, to present information on the Government's actions undertaken for the development of the information society, access to broadband Internet, counteracting digital exclusion and support for people with special needs. The Committee's area of interest also includes issues related to disseminating modern technologies, promoting good practices, and access to public information. In addition, the Committee's work has also focused on matters related to telecommunications and computerisation.

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In addition to the meetings held in the committee rooms in the Sejm building, the Committee organises thematic away sessions during which it visits interesting initiatives and participates in international events. In the current legislature, the Committee participated in the UN-IGF Digital Summit held in Poland in December 2021. Among others, MEPs participated in a Parliamentary Roundtable on user-centred regulatory approaches in the digital space and two parliamentary sessions. The first concerned privacy and data protection legislation in the digital age, while the second focused on the issue of the balance between freedom of expression and combating harmful content. The visit was also an opportunity to exchange experiences and talk to representatives of parliaments of other countries participating in the Summit.

One of the ways to promote and disseminate knowledge about modern technologies is to organise scientific conferences, seminars and other types of meetings. The Committee's track record includes the organisation of conferences entitled: "Generation 50+ – New Technologies and Financial Services," "The Role of Innovation in Increasing Growth and Solving Global and Social Problems" and "Smart Cities." Such events are of great interest, bring together many distinguished experts, and serve to expand knowledge in the field of modern technology.

In addition, the Committee is assisted in its work by a group of experts from various scientific fields. Ongoing scientific advice to the Committee is provided by Dr Radosław Nielek, who attends its meetings and produces expert reports and materials. Also, the Committee cooperates with sectoral organisations, local government, trade unions, and employer organisations.

MPs – the Committee members – also undertake international cooperation activities and receive foreign delegations interested in our field of action and the exchange of experience. During the pandemic, this form of Committee activity was severely restricted. International meetings were held by videoconference.

International cooperation at the level of parliaments and committees dealing with digitisation and innovation is an opportunity not only to exchange experiences but also to seek common answers to global, transnational challenges. The hallmark of such challenges is that dealing with them effectively is beyond the individual capacity of even large countries. Among the many challenges, from the perspective of the Committee on Digitisation of Innovation and Modern Technologies of the Polish Parliament, three areas are particularly relevant: cyber security, the development and regulation of the use of artificial intelligence algorithms, and effective regulation of the operation and fair taxation of transnational corporations providing online services.

The development of crime related to the hacking of IT systems is inextricably linked to the increasing digitisation of our lives. A particular challenge, however, is the transnational nature of these attacks. Not only are there often thousands of kilometres separating the victim from the perpetrator but also two or more different legal systems exist. In addition, more often than not, a single attack simultaneously affects citizens of many countries using the same IT solutions. It is therefore crucial not only to deepen cooperation in the effective detection and prosecution of criminals but also to work on supranational cyber security standards for IT devices and systems. However, the response to the threat should not be turning to the monitoring and surveillance of all internet users' activities. The right to privacy must not fall prey to the fear of cyber criminals, but neither should it become an excuse for creating safe havens for cybercriminals.

If cybercrime can be seen as a critical threat associated with the growth of information technology in everyone's life, the development of artificial intelligence algorithms is seen as the most significant opportunity. The more elements of our activity that have been computerised in some way, the more sensors that surround us, the more data for training artificial intelligence algorithms and the greater their impact on our daily lives. Today, we already see artificial intelligence supporting doctors in making diagnoses or helping to detect attempts at financial fraud. On the other hand, artificial intelligence is increasingly deciding how we work, how we are paid for our work, and what amounts we will pay for car insurance. The very way the algorithm works is often hidden from those directly affected by its actions. It also happens that the rationale the AI uses to make decisions is discriminatory. The most important models are built based on data collected from many countries and then applied, without considering the legal context, simultaneously in Poland, Brazil, Finland and dozens of other countries. For this reason, national regulations concerning restrictions and rules for using artificial intelligence algorithms must be coordinated at a supranational level. The complexity of the matter further reinforces the need to exchange ideas and experiences of legislators from different countries in this area.

The leading creators and significant beneficiaries of the development of artificial intelligence algorithms are major multinational corporations providing various services via the Internet. Although their activities have a direct and significant impact on the socio-economic reality of individual countries, e.g. by shaping a country's media market or key logistics chains, they are generally not effectively regulated at the level of particular countries. And this is true in terms of organisation, legal liability,y and taxation. Being aware of the value of the free flow of services and content online, it is necessary, at the level of international organisations and bilateral cooperation, to look for fairer solutions in the tax area and more space for the state in the implementation of its socio-economic policy, also concerning these corporations.

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Thanks to the global digital society's development, much of the world has shrunk to 300 ms – the time it takes for information to get from Australia to Poland. Cooperation between countries in the area of innovation and digitisation must follow the same pattern. It must be effective both in sharing experience and information and building standard regulatory solutions harmonised between multiple countries. We must also not forget that although the digital revolution is global, many countries still stand on the sidelines of this process. It is our duty and responsibility, as beneficiaries of this process, to look for solutions and tools that will help to include as many countries as possible in this revolution. Here, too, there is an essential space for coordination between committees. •

Parliaments are guards and guarantees of democratic governance and civic society by their very nature.

NATIONAL ASSEMBLY OF THAILAND

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THE COMMITTEE ON SCIENCE, TECHNOLOGY, RESEARCH, AND INNOVATION, HOUSE OF REPRESENTATIVES, THE KINGDOM OF THAILAND

Part I
Duties, Responsibilities and Background

The parliament is the main legislative body with duties and powers to enact laws, control the administration of the State affairs, be acknowledged, or provide an approval of significant matters and submit a general debate for the opinions of Members of the Parliament for common interest of the nation and well-being of the people as a whole. The legislative body consists of Members of the House of Representatives and Members of the Senate. The Speaker of the House of Representatives serves as the President of the National Assembly.

The control of the administration of State affairs is a balance of power between the legislature and the administration bodies. The Constitution of the Kingdom of Thailand, B.E.2560 (2017), Section 129 empowers the House of Representatives and the Senate to elect members of each House setting up Standing Committees to perform any activities, conducting fact-finding inquiry or studying any matters related to the duties and powers of each committee and report to the House. In addition, the Rules of Procedure of the House of Representatives, B.E. 2562 (2019) is provided that the Committee shall have the right to carry out, control and examine the exercise of executive powers as the government has announced its policies to the National Assembly.

The Committee on Science, Technology, Research and Innovation, House of Representatives shall have its duties and powers to perform any activities, conduct fact-finding inquiry or study any matters concerning science, technology, research and innovation planning, promotion and development, and report to the House.

The Committee is in charge of the matters related to the Ministry of Higher Education, Science, Research and Innovation, including various departments under its ministry consisting of Office of the Permanent Secretary, Ministry of Higher Education, Science, Research and Innovation, Office of National Higher Education, Science, Research and Innovation Policy Council, Thailand Science Research and

Innovation, Department of Science Service, Office of Atoms for Peace, State Higher Education Institutions, Thailand Institute of Scientific and Technological Research, National Science Museum, National Science and Technology Development Agency, National Institute of Metrology, Geo-Informatics and Space Technology Development Agency, Thailand Institute of Nuclear Technology, Synchrotron Light Research Institute, National Astronomical Research Institute of Thailand, National Innovation Agency, Hydro-Informatics Institute, and Thailand Center of Excellence for Life Sciences.

Part II
The Implementation of the Committee

The Committee on Science, Technology, Research and Innovation, House of Representatives highlights the importance of national development of science, technology, research, and innovation to benefit the economy and society as a whole, and to solve problems for people in various aspects such as education, economy, society, public health, environment, technology and innovation. As a result, the Committee emphasizes the planning, promotion and development of science, technology, research, and innovation to keep up with the rapid changes in technology and innovation.

The tangible results of the implementation that have been proposed to the government is to consider the study of guidelines for planning the production of graduates, improve the curriculum of education at the higher education level to be in line with the demands of labor market and Thailand 4.0 policy in order to keep up with the current coronavirus 2019 (COVID-19) epidemic. In addition, several fields of research conducted in Thailand have been studied in order to further benefit the country and the people in the local areas. This is the best value for money received from the national budget. The Committee has also study visit and organize seminars in different areas in each region to recognize and solve problems in such areas.

Part III
Issues for the Summit

The rapid changes have resulted in changes of people's lives, communities and cities including the country's competitiveness in the global value chain affecting both directly and indirectly which have never taken place. Sometimes, it creates problems and urgent issues which have been waiting to be solved. The foresight indicates signs of change, the assessment of uncertainty recognizes and predicts the future including the picture of changes and their impact in the future are necessary for the country's development planning and preparation. This leads to direction setting, strategic decision making, and alternative futures that are consistent with changing conditions in various future situations.

Under this ongoing change and uncertainty, policy and capacity development on science, technology and innovation become the country's key competitiveness. The Thai government recognizes and anticipates the importance of developing science, technology and innovation potentials to meet the needs of the future which can be divided into important issues as follows:

1. The use of technology and innovation for Thai people in the future

Megatrends, signals of change and significant changes in consumer behavior have resulted in the development of living conditions of human society in a better direction and may cause new incidents or problems that have never happened before. This drives to become a bigger problem at the national or global level. The development of technology and innovations to meet these changes is therefore essential to the development of the country in terms of economy, society and environment. However, the changes occurred may affect Thailand in many dimensions with a dramatic surge in three main aspects as follows:

- Competitiveness — The world economy and trade in the next generation will be more affected by the macro context. This is a partly problem arising from the impact of the Covid-19 pandemic. That makes many countries have more closed international economic and political policies. Another problem is geo-politics that changes the global value chain. These have created a deglobalization that will affect international trade and economy causing Thailand to look back at the ability to be more self-reliant.
- Inequality —The impact on the economy caused by the Covid-19 crisis affecting the expansion of social inequality. More unemployment from shutdowns and relocations leads to widespread poverty and inequality in society. Even online learning is becoming more modern and growing in the age of social distancing, youth who lacks the potential to access technology will lose more educational opportunities and widen the inequality gap. In addition, Thailand is facing an aging society that affects overall productivity of the country and is a problem in the social welfare system in the future.
- Climate Change —The impact of climate change in the form of natural disasters in various ways seems to be intensifying and increasing dramatically around the world. Many countries have become aware of the need to take action and come up with serious measures to control and reduce the impact of industry on the environment. At the 26th Session of the United Nations Convention on Climate Change (COP26) in 2021 in Glasgow, Scotland, the meeting reached an agreement to curb the problem of climate change and the push to end the use of fossil fuels. The problems of drought, flooding and smog pollution in Thailand are the effect of climate change that has greatly affected Thai people's lives. Thus, proper preparation for the future is required.

To cope with changes in order to mitigate the impact of the three main aspects requires technology and innovation as the key elements. As a result, the developing technology and innovation potential for the future is, therefore, an ambitious agenda for the country by means of the promotion of research and development, building manpower and expanding innovation. The key areas of technology and innovation for future developments are as follows:

1) Smart Farming —The agriculture sector of Thailand is facing challenges in several areas consisting of climate change, the increasing number of the world's population that has resulted in increased demand for world food, and disruptive technology. Therefore, "Smart Farming" is an important technology of Thai agriculture in the future. Today, the world's largest innovative companies are investing heavily in high-tech agriculture. For example, the Amazon Web Service (AWS) offers AWS implementations linking with digital and electronic devices to measure and track agricultural factors and environments. This leads to forecasting and planning for farming to achieve maximum productivity in the decreased cultivation area. Therefore, new agricultural goods and products are of high quality at reduced prices to be competitive with traditional ones. Thailand's agricultural sector must speed up its adaptation and develop its potential especially knowledge and expertise in smart agriculture and smart agricultural market. In Thailand, there is an average growth of 21% per year when compared from 2017-2022 and it has a tendency to grow steadily.

2) Food —The United Nations has predicted and signaled a state of crisis and global food security due to the increasing population while the agricultural land for food production has decreased as a result of global warming. In addition, the previous protein sources from livestock are facing new types of deprivation because it is the world's greenhouse gas production source including the crisis of the epidemic of the Covid-19. These factors directly affect food consumption. The consumers will pay more attention to healthy food, dietary supplement, food for specific groups of people, and a high protein food source that does not harm the environment including processed foods that can be stored for long. Thailand has developed technology and innovation to meet the needs of food of the country and of the world very well.

3) Genomics — Due to the rapid advancement of genomics and genetics technology, some of them have been applied extensively in medicine so as to study the causes and the mechanisms of genetic diseases, diagnosis and prognosis including the development of new drugs and treatments that can treat patients at the point and be specific to each person. Examples of medical applications include genome editing to lead to a therapeutic approach by sequencing or genome manipulation in diseased cells or tissues and precision medicine by using the patient's genetic data to be processed together with other environmental data to make the diagnosis and treatment more accurate.

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4) Vaccines and Biologics —The production of vaccines to prevent diseases caused by emerging infectious diseases (EIDs) which tend to increase in number and intensify. For example, how to deal with the spread of the Covid-19 that affects health systems and economies around the world. As a result, many countries have to accelerate the capacity for building in research testing and production of vaccines on an industrial scale to be used to stop the outbreak of disease effectively.

5) Next-Generation Automotive — A modern vehicle that has zero emissions is so-called a Zero Emission Vehicle (ZEV) can drive automatically. It is seen as a future solution to solving the problem of air pollution caused by transport and increasing road safety. Due to the technology of electric engines, batteries, the application of digital technology on the road that has made great advances, it is, therefore, expected that the development and growth of modern automobiles will rapidly grow. In addition, the behavior of consumers around the world has changed because of the outbreak of Covid-19. This will become a New Normal that will cause the need for transportation services in different forms.

6) Artificial Intelligence (AI) — Artificial Intelligence (AI) is a technology that is rapidly advancing and capable of transforming many fields especially in today's world that is driven by data and digital technology. It is estimated that the economic value generated by artificial intelligence will reach US$15.7 trillion by 2030. Also the artificial intelligence market in Thailand is estimated to be valued at 1,140 billion baht by 2030, and the adoption of the artificial intelligence could increase by 50% from 17% in 2019.

7) Quantum Technology —The application of quantum physics principles in measurement (metrology), computation, processing, cryptography, transmission and storage makes these operations more efficient and powerful than classical methods. Modern quantum technology or quantum technology generation 2 (QT2) is based on the ability to precisely control quantum conditions. Currently, the research and development of quantum technology 2.0 is brought to the attention of both education and private sectors. It is estimated that global investment in quantum technology in 2021 is $22.5 billion. (up to 1 billion USD compared to 2020), and the largest investor countries are the United States, China, Japan and Germany.

8) Advanced Materials Technology — Advanced materials technology is any material controlled to have a precise and specific structure. It produces special properties that are better than the base material or makes the material special functions that are demanding and controllable. These advanced materials are processed and used by advanced technologies such as atomic arrangement and nanostructure technologies. This allows us to better define and design material properties. From the forecast of advanced material economic figures, the global activated carbon

nanomaterials market will grow from approximately 85,000 million baht in 2019 to 120 billion baht in 2027, or the growth of polymer nanoparticles and nanopolymer materials which is nanoscale composites could grow 150-200% from 2021-2028. Such advanced materials are used as components in products such as electronic devices and hard disk drive, and in various industries in the future.

9) Space Technology —The world is entering a new space age, driven by new space exploration and pioneering projects, led by the United States, the European Union, China, Russia, Japan and India. This leads to the transmission of space technology to the private sector, and the space technology can be applied commercially as well. For example, Starlink satellite internet service, a satellite transport service that can reuse carrier rockets, space junk collection and satellite repair services, space tourism, hyperspectral service, etc., where more products and services in the aerospace industry are gradually introduced into the market in order to respond to the rapid changes in the world in terms of economy, society and space security.

It can be seen that these technologies and innovations are the main driving mechanisms. Thailand realizes the importance of technology utilization and innovation development focusing on driving the economy with innovation in 3 dimensions as follows:

1) Inclusive Economy — An economic system that responds to strengthening communities and local people focusing on enhancing knowledge and developing skills which is consistent and necessary to upgrade entrepreneurship for farmers, general laborers and low-income and unstable groups to create economic growth in local area. Information technology to create business opportunities and access to information, and knowledge of technology and innovation to increase production efficiency and create added value for products, etc. are important for the inclusive economy.

2) Bio-Circular-Green Economy (BCG Economy) — A Bio-Circular-Green Economy is a concept of hybrid economic development based on bio-economy, circular economy and green economy to create an economic system that supports the efficient use of resources and the preservation of the global environment. This tends to occur in various countries around the world. Thailand focuses on technology development and innovation in key fields such as agriculture and food, energy, biomaterials and biochemical materials, medical field and health services, etc.

3) Creative Economy — An economic system that responds to the context of Thai society with an emphasis on driving a knowledge-based economy, intellectual property, and research studies which is linked to the underlying historical cultural background accumulation of knowledge

of society, technology and innovation is used in business development, production of goods, and services in new styles that create added value to the economy or social values.

2. The role of Thailand and global health security, preventing and reducing the likelihood of outbreaks, fast threat detection, and responding to threats quickly and efficiently

Innovation plays a crucial role in tackling the impact of global crises, especially after the Covid-19 pandemic leading to a New Normal and causing a change in concepts, lifestyles, business operations and health safety. Therefore, it has become an indispensable necessity to lead the country beyond its current limitations amid the crises, changes and uncertainties that will take place in the future.

In-depth technology research capacity has become a key competency for countries to prepare for these changes. In addition to increasing the competitiveness of Thailand, the development of innovations that use deep technology will allow Thailand to create innovations on its own without having to rely on importing technology, expertise, machinery or parts alone. This is as though Thailand will be able to break the cycle that makes the cost of innovation of Thailand so high that it cannot compete with foreign innovation. It can also create innovations that use deep technology in a shorter period of time and keep up with the new global challenges. Just as the United Kingdom or the United States can invent and produce a vaccine against the Covid-19 virus in a shorter time to reduce the damage and impact on the economy and people than countries that are less able to do in-depth technology research.

The Ministry of Higher Education, Science, Research and Innovation of Thailand is an agency that plays an important role in driving the development of the country's in-depth technology research capabilities, for example, the development of the Covid-19 vaccine in Thailand. This derives from the knowledge and research of Thai research universities and agencies under the Ministry of Health. Currently, it is in the testing phase in humans, a total of 4 species, each of which will continue to develop and make progress. For example, Type 1 is ChulaCov19 vaccine, an mRNA vaccine, developed by the Vaccine Research Center, Faculty of Medicine, Chulalongkorn University. It is expected to be used in the middle of 2022. Type 2 is a vaccine developed from tobacco leaf cells by Chulalongkorn University. Type 3 Vaccine DNV-HXP-S, an inactivated vaccine by the Government Pharmaceutical Organization and Mahidol University. It has been tested in humans and is expected to be successful in the middle of 2022. Type 4 Covigen vaccine is a DNA vaccine developed by Bionet-Asia Co., Ltd. This Covid-19 vaccine developed in Thailand is our hope in building a vaccine security against Covid-19 virus in the country and preventing further outbreaks.

In the future, our world may face many other public health and epidemic problems. Transboundary animal diseases are the other issues to pay attention. The world of globalization driving the international and intercontinental animal and meat trade with exponential growth causes some animal diseases that occur in one continent which took decades to spread to another continent in the past. Today, it may take just overnight to spread and cause economic damage to the destination country affecting food security, animal labor loss, the higher cost of animal production due to the cost of treating and preventing animal diseases. This makes farmers poorer as the loss of animals which is an obstacle to the international animal trade and the government expenditure on prevention and control higher.

In addition to the implementation of administrative and legal measures to control the international trade in animals and meat, applying science and technology to agriculture known as agricultural biotechnology which is originally important will become more vital for preventing transmigrant animal diseases in the future. The major epidemic in animals, vaccines are considered an essential tool for disease control and prevention from the situation of the pandemic of the Covid-19 virus. Currently, vaccine development technology has become more advanced. A theoretical model of vaccine manufacturing technology that has never been used like mRNA has been used in the situation of epidemic of Covid-19. In addition, it has been proven to be an effective technology and can be produced in a very short time compared to the development of conventional vaccines. In the future, genetic engineering vaccines will become increasingly important for animal disease control while conventional vaccines may be less important. Therefore, producing highly effective vaccines can prevent animals from getting sick and dying. This leads to food security and decrease in the loss of labor from animals affecting a reduction in cost of animal production as the cost of maintain animals is reduced. It causes farmers to have higher incomes, reduce income inequality, reduce barriers to international animal trade, generate more income into the country. In addition, the government has reduced expenses for disease control and prevention.

Apart from the public health issues, sustainable development is another issue that Thailand realizes the importance of driving the country towards the future with the world's increasingly growing demand for resources and consumption resulting in environmental changes that affect people and living things all over the world. Obviously, the impact of environmental problems in both short and long terms make it undeniable that there must be drastically reformed the resource management and sustainability management. Certainly, the resource and environmental crisis such as water quality, air quality, flooding, drought and the problem of microplastics in water source and marine life affects way of life, health and quality of life of all living things on earth severely. Thus, every country has to collaborate with each other on sustainable development.

There are many dimensions of sustainability such as society, economy and environment. In Thailand, laws and economic models for sustainable development, Bio-Circular-Green Economy (BCG), have been integrated in 2019 to support and push forward changes, and develop technologies, business models and policies that can seriously address problems related to resources, environment, society and other dimensions relevant to sustainability.

Sustainability management of the dimension of natural resources and the environment integrated policy for sustainable development is a holistic action which is integrated all sectors together. There is a need for solving sustainability problems in every dimension. This is because the cooperation among public sector, private sector and people has resulted in the issue of policy solutions that meet the needs of each stakeholder group and create equality and equity in access to resources or services (tailored equality) for all citizens with limited natural resources and pollution problems at the moment. The environmental and tax measures against negative externality, whether in the form of credit or Pigouvian taxes, are strongly encouraged in order to raise awareness of environmental problems and change the behavior of consumers and a manufacturing industry.

Appling innovations to solving environment problems and creating sustainability whether in the forms of alternative and renewable energy technologies or carbon capture, storage and recycling are an effective way to reduce greenhouse gas emissions or other environmentally harmful chemicals. Health innovations can also help consumer behavior changes such as holistic management of human well-being. This includes guidelines for the use of natural therapy and natural extracts of preventive medicine in order to achieve well-being. Therefore, AI and big data play a vital role in solving sustainability in other dimensions as well.

From the issues of public health and sustainable development, it can be realized that human security in the future will not be a problem of any country. That public health problems or environmental problems take place in one country will inevitably affect other countries. An important starting point for solving problems and leading to a stable future is the knowledge sharing and international cooperation to prepare for coping and solving problems together in a sustainable way.

3. Innovations to solved social inequality problems and international cooperation

The social, environmental and inequality problems have become increasing serious and interesting issues in the world. The United Nations (UN) has set the Sustainable Development Goals (SDGs) as a framework and direction for sustainable development which has been accepted at the international level on many platforms.

The 17 goals of SDGs of the United Nations are in line with the country's development guideline according to the National Strategy Framework 2018-2037. This is the goal of sustainable development of the country in accordance with the principles of good governance so that "the nation is stable, the people are happy, the economy continues to develop, the society is fair, the natural resource base is sustainable".The 17 goals of SDGs are linked to the 6 national strategies and the master plans under the 23 national strategies. In driving the SDGs in Thailand, the Committee for Sustainable Development has been established as a national mechanism to support country development guidelines including development policies and strategies covering economy, society and environment in balance and integration in accordance with the relevant international agreements or cooperation to be able to meet the need of people both at present and in the future for a better quality of life as well as to promote and support the implementation of national development to achieve the sustainable development goals.

It is important to use science and technology to meet sustainability needs by creating opportunities to access knowledge of science, technology and innovation at all levels and in all areas and promote the decentralization of structure and knowledge of sciences and technologies. That will stimulate the development of change equally and support sustainable solutions. The Ministry of Higher Education, Science, Research and Innovation, an agency that oversees manpower development and advanced research, national research agency including state universities across the country, emphasizes the application of knowledge and research from the education sector to solve social and people's problems at the local level as follows:

- Policy setting for 38 Rajabhat Universities across the country to be educational institutions for local development by establishing a 20-year strategy for Rajabhat University for Local Development (2017-2036) to drive local development based on mutual knowledge and understanding,
- The work of research agencies that focuses on meeting the needs of communities and people in different areas to strengthen the community through various projects such as the Coupon wit Project for OTOP, Economic Development Project on the Foundation of Ornamental Plants, Project to upgrade the OTOP in the area of the Institute of Scientific and Technological Research of Thailand (TISTR), etc.,
- The establishment of a research and innovation fund management unit at the local level, allocating research and innovation funds for area-based development, community or local development with the objective of making people's lives better, having a good quality of life, and enhancing the competitiveness of new entrepreneurs, small business, small and medium enterprises, community enterprises, and social enterprises at the local level.

Under the economic model for sustainable development or the BCG economic model which Thailand has set as an important direction of driving the economy, it will help Thailand being in balance, fair and sustainable. The BCG economic model is consistent with the Sustainable Development Goals (SDGs) and in line with the principles of the Sufficiency Economy Philosophy which is a key principle in the economic and social development of Thailand. The BCG economic model integrates upstream to downstream development using knowledge of science, technology and innovation, and creating value based on the diversity of biological and cultural resources through a quadruple helix mechanism that connects the public, private and education sectors including civil society to work together.

In summary, the 3 areas of "future problems" composed of a change in lifestyle, crisis response and various threats including sustainable development that creates equality and reduces environmental impact have become a global agenda every country has to encounter. Any problem that arises in one corner of the world will be able to make an impact on the other sides of the world. Therefore, it could be said that these future problems are not the problem of any country. Rather, it is a global challenge that requires international cooperation to drive a common measure against such problems.

For this reason, Thailand as the host of the APEC meeting in 2022, recognizes the importance of preparing and making understandings with other countries in dealing with future changes. It is a good opportunity to open the stage for various countries to set a common vision and goals (APEC – Global Futures Impact) to lead to the creation of a collaborative network in the exchange of knowledge, technology and innovation, a collaboration, including enhancing the potential in order to create opportunities and equality for all nations to solve problems together effectively. •

Under this ongoing change and uncertainty, policy and capacity development on science, technology and innovation become the country's key competitiveness.

DRAFT

PARLIAMENT OF URUGUAY



SPECIAL FUTURES COMMITTEE, PARLIAMENT OF URUGUAY.

Bringing the Future to the Present from an Anticipatory Framework[1]

The Special Futures Committee (Comisión Especial de Futuros, CEF) was created by Law 19.509, passed by all Political Parties on July 4th, 2017. It has 15 members[2] and its main task is to prepare a "Report on the Future" on issues of strategic relevance to the country within each legislature. The CEF is an innovative initiative in the Parliament. It has a purpose and functioning that is different to the rest of the committees mainly in two aspects: 1- it has been designed as a collective intelligence system working with a broad and representative extra-parliamentary advisory group[3], and 2 – each topic is addressed in 'future terms', adding a set of specific knowledge and methodological frameworks. Opting for collective intelligence knowledge creation processes with focus on anticipatory capabilities resulting in a cutting-edge initiative of 'anticipatory innovative governance'. (Tõnurist and Hanson, OECD, 2020)

The CEF seeks to spread information about the future in a literate way, with the purpose of making it available to the different Parliament Committees. At the same time, it encourages collective reflection in multiple institutional spaces, and invites them to be part of the knowledge co-creation processes. In order to address complex problems and challenges, the future is used to see the present differently. In this sense, the Parliament is playing a key role in navigating this change of era by enabling the use of anticipatory capabilities to better perform the ambidexterity needed to navigate the emergent and to articulate the 'here and now' with long term vision. This contributes, both to incorporate the future in the present as well as to give continuity to the great issues that concern today's society and involve future generations.

In other words, the CEF seeks to promote a virtuous synergy between: (i) a collective intelligence system for knowledge creation; (ii) a capacity building process to strengthen endogenous anticipatory capabilities; and (iii) better futures-oriented information on the high-level policy decision-making processes.

I – The Special Futures Committee of the Uruguayan Parliament. Some aspects of the process for its creation and implementation.

This section highlights the development of the CEF. It started with the initial idea of having a Futures Committee

researching on foresight experiences inside governments (i.e., Canada, Chile, England, Finland, Korea, New Zealand, Scotland, among others). Law 19.509, which created the Committee, was passed on 2019. Then members were selected, and it finally started working a year and a half ago. In other words, it is important to understand that it was not born 'done', complete, finished. One of the main tasks during these five years was to work on creating the conditions to develop anticipatory and Innovative governance practices through collective knowledge and anticipatory and forward-thinking capabilities.

Delving on the know-*what*, know-*how* and know-*for what* is a way to reflect, share and learn 'in real time'. There are double and triple learning loops that enable reflection and reframing which in turn, enable transformation (Argyris and Schön, 1978. Is to put the focus on the *being and becoming,* on the *emergent* phenomena in itself (which is not straightforward, homogeneous nor it is given or finished). It is coherent with the capacities and skills needed to accompany change in terms of change and also to create the conditions for the wanted change (Miller, 2028). In other words, sharing sense-making and making-sense 'using the future' in a literate way, opens up the possibilities to understand continuity and difference (which includes 'seeing different' what already exists).

We are immersed in a context of disruptive changes and emerging novelties that demand approaching things in a new way to deal with permanent novelty, uncertainty, and complexity. This context calls for a s a legislative work that accompanies this dynamic of constant change from a strengthened anticipatory approach and capacities and not only reacting or adapting after events happened.

Changes in the technological, environmental, economic, demographic, cultural, social, areas, among others, are intertwined with transformations in the ways of doing, organizing, producing and relating, as well as the speed with which it accumulates, generates, spreads and it applies knowledge – and its flip side, obsolescence and disorientation in the face of so much information, demands new frameworks to define and address problems. There are aspects of these dynamics of change multiplicity of interactions and simultaneous interweaving, that result in complexity and uncertainty. Furthermore, the 'use' we make of the future (the anticipatory assumptions) affect our present and the different options we have to frame problems, require that we find adequate theoretical and methodological frameworks. Hence, to better distinguish, and choose alternatives, it is necessary to strengthen the anticipatory skills used to include the future in the present in a 'literate' way; in other words, having knowledge and skills of how to 'use the future' in the present.[4]

Incorporating a rigorous and systematic anticipatory approach, agile, strategic as well as innovative, could better orient the parliamentary task making sense of the emer-

gent and at the same time, addressing a long-term thinking. This contributes to a better understanding on how to deal with uncertainty and complexity, and a better position to identify present and future alternatives and possibilities. In other words, we can welcome an era of "anticipatory, innovative and strategic governance" in accordance with the context of accelerated and disruptive changes.

Managing ourselves in a context of complexity, uncertainty, surprise, ambiguity, and the permanent creation of novelty requires specific conditions and capacities that are qualitatively different from those we would generally apply in 'expected' situations on which logics of projection and linear progression or extrapolation can be applied. The COVID19 pandemic brought multiple learning opportunities by exposing shortcomings in global and local capacities and competences to deal with change and the supervening novelty.

The Parliament has been proactive and started to quickly adapt its capacities and skills to incorporate the future to its role. The choice to bring the future into the parliament is part of what is called Experimental Governance (Sabel and Zeitlin 2012), which advocates for collective learning processes through rigorous experimentation. The other choice was related to a methodological approach to incorporate the future, taking into account the nature of the parliamentary work.

To warrant an adequate 'use of the future' for decision-making the CEF chose the Futures Literacy Framework (Miller, 2028), a cutting-edge approach in Future Studies based on complex theory and collective intelligence knowledge creation processes. It is an action-learning-research approach that builds anticipatory capacities through daily practice. Moreover, it is suitable to be filled with cultural aspects. Sociological cultural studies award a very high score on resistance to uncertainty (Hofstede Insights online)[5] to the Uruguayan society, but at the same time, history gives an account of how ahead of the times Uruguay has been in multiple issues. From its secular, free and universal education system almost 150 years ago; a democracy that allows people to be involved and participate, and a great level of social welfare at the beginning of the last century. Uruguay has a very progressive legislation, being the first Latin American country to allow women to vote; an abortion law has been passed; it recognizes same-sex marriage; the regulation of cannabis; an energy matrix almost entirely based on renewable energy or the early-innovative traceability system for livestock production (Garrido, 2016). Both aspects, simultaneous resistance and open-mindness, seem to have an effect on the slower pace in which change is accepted in this society but it also allows systemic integration through collective debates and critical reflection.

The Special Futures Committee is promoting anticipatory capacities and futures thinking ahead the Parliament but also is tributary from capacities from other areas of

government, institutions and society built through many activities in the last decades. Although it does not fit within the usual parameters of the category of a "National Foresight System" with institutions and actors in a well-defined and systematic way, there are anticipatory and future thinking capacities in Uruguay that are consistent with a process that has more than two decades (although we can go back to the 1960s with the first experiences). The effective management of the COVID19 pandemic in Uruguay is a concrete example of these anticipatory capabilities for agile orientation in the face of novelty, collective coordination, and material conditions built in advance (Plan Ceibal -One Laptop per Child - the Universal Educational System, the Universal National Health System, technological capabilities and accessibilities, high-level scientific and practical capacities)(Garrido, 2020b). Other examples are Energy Policies with a 94% of the Energy matrix based on renewable sources and second generation Energy policies that allow the automotive transition towards a post-carbon era. The theme chosen by the CEF to focus its substantive effort 2021-2023 for systemic anticipatory knowledge and adequacy is related to the Future of Work and Work of the Future.

Without failing to recognize the extensive background, it is important to highlight that the CEF acts as a binding space and pivotal axis for reflection and anticipatory action that extends and intertwines within society. We are aware of what a Parliament means for democracy, as the Institution that brings together not only the various political sectors in a plural sphere of exchanges, discussion, and decision, but it is also the home of the people, society as a whole. The CEF updates its vision and mission placing the future to the exchange, reflection, and inclusive decision of the present at the center.

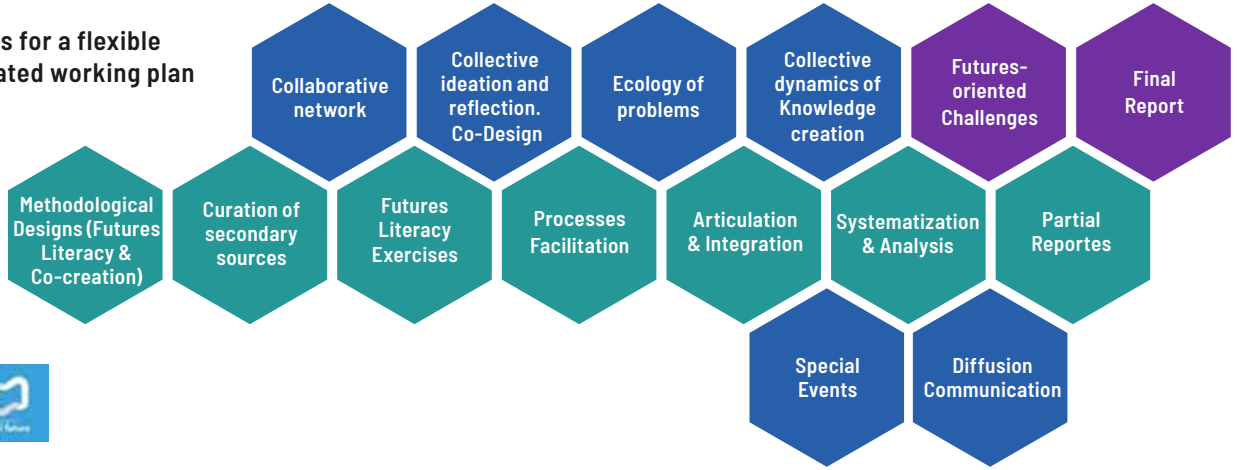
These are the three aspects that seem relevant to the development and purpose of the CEF: (i) a collaborative approach collective knowledge creation, for plural, well-informed, inter and transdisciplinary conversations.; (ii) the 'use of the future' in the present, with adequate methodological frameworks to strengthen anticipatory capacities and competences; (iii) frames to better address the complexity, emergence, uncertainty, novelty in the issues and problems parliamentary decision-making needs to deal with.

This requires focusing on the applied methodological approach used by the CEF for its purpose and functioning.

II – The Applied Approach of the CEF

As a step in the co-design process, a set of primary components were proposed to be validated by members of the CEF and the nuclear group of the external collaborators. These components emerged in the meetings at the start of the CEF. Later, they were integrated into a Working Plan.

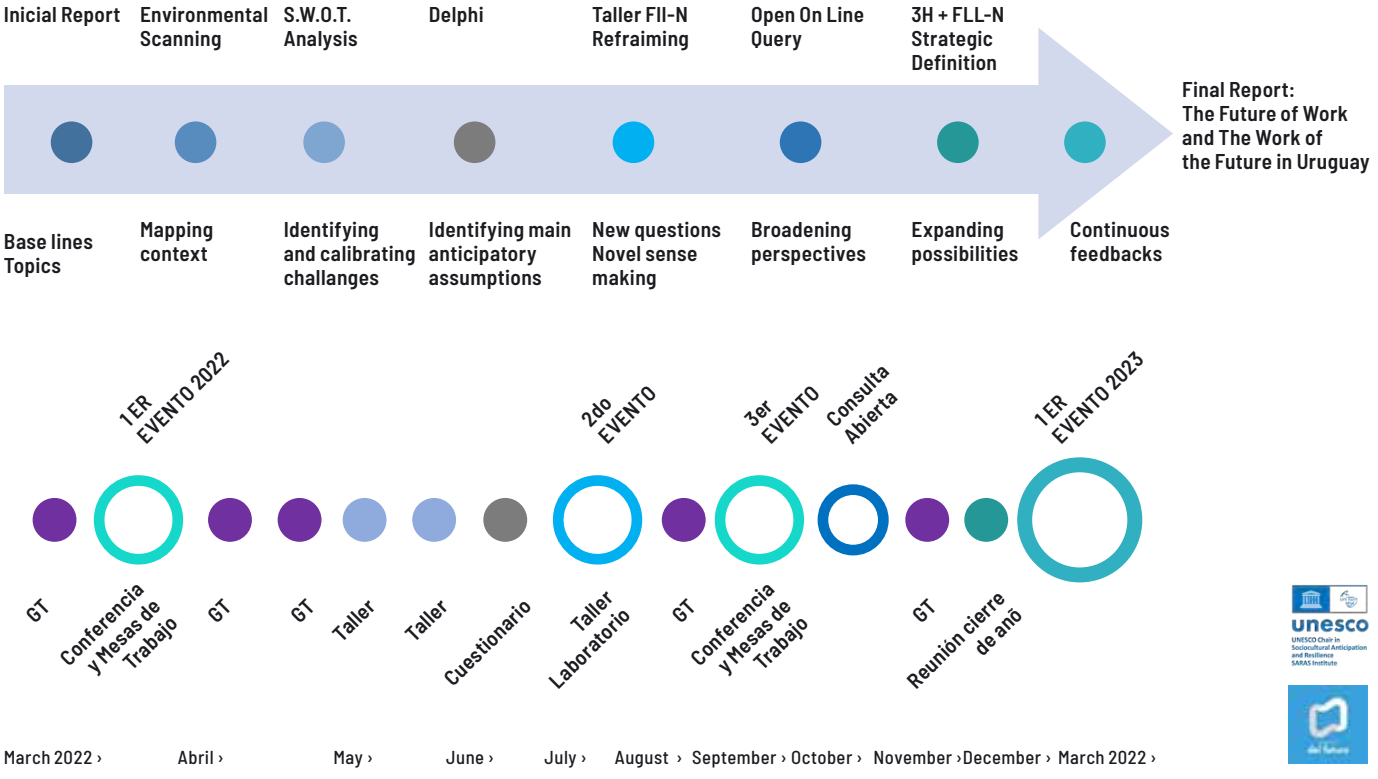
Components for a flexible and articulated working plan



The Methodological Working Plan[6] (PTM in Spanish) serves as a guide for the Special Futures Committee of the Parliament of Uruguay. It is a 'practical arm', with a conceptual and heuristic guide for its functioning and achievements. It highlights how to reach the general objective to produce collective knowledge, deep reflection and accurate information to better address complexity, novelty, and uncertainty for decision-making. Its challenge is to articulate middle and long-term visions with the present. In order to facilitate the fulfillment of its purposes, it provides and designs tools and methods to produce knowledge as inputs for the Report on The Future of Work and the Work of the Future to be presented in March 2023 (the last year of this Legislature). The Methodological Working Plan facilitates the journey of co-creation processes with technical support. It is not an external document provided by a consultant, but rather a robust heuristic for a collective knowledge creation process.

A flexible schedule detailing activities, participants, tools, and techniques to be used, milestones and expected achievements which could be modified or changed to the extent that the internal methodological consistency is not compromised. It is a "road map" to achieve products and processes in accordance with the purpose and mandate of the CEF that guides its members and the extended support group.

FUTURES LITERACY APPLIED TO COLLECTIVE KNOWLEDGE CREATION PROCESSES
Products, activities, timeline



The design process was a hands-on experience that allowed the formation and consolidation of the most nuclear support group of the CEF (made up of Parliamentarians and some external experts and sponsors **x**) and an opportunity to begin an ad-hoc futures literacy process, building shared language, and starting to make explicit knowledge and anticipatory assumptions. It allowed to introduce the conceptual and heuristic framework, details about the various techniques, selection criteria, the fundamental contribution of the reframing heuristics and the main expected contributions to the process.

A triple process has started and various objectives have already been achieved: (i) starting the creation and strengthening of anticipatory capacities to 'use the future' taking into account the purpose of the CEF; (ii) a base for organizing activities, through which the purpose, goals and commitments/ milestones can be achieved, and (iii) concrete information and knowledge that is being systematized and analyzed. There are two publications already made and another one in process.

The design of the Methodological Working Plan is a comprehensive action-research and practical-learning process based on the latest information available on anticipatory systems and models, complexity theory and complex thinking, and co-creation pedagogies, all oriented to produce high quality information and knowledge to address the chosen topics and problems (2021-2023 The Future of Work and The Work of the Future).

A qualitative attribute to highlight is the iterative process of knowledge creation, based on collective intelligence with double and triple learning loops. This allows, on the one hand, to generate and strengthen anticipatory capacities (for an innovative anticipatory governance) and on the other, to become a 'live' system for generating qualified information in real time. In this sense, it is not a rule book or something 'finished' but a learning system in permanent beta.

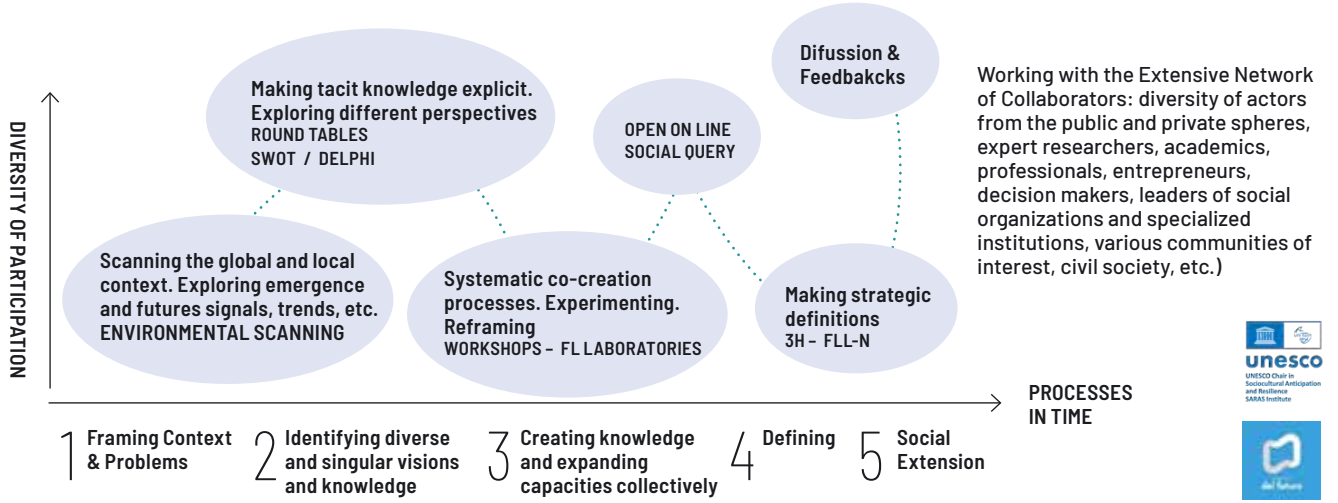
Another advantage is that the CEF has a framework that allows to embrace complexity and uncertainty with the help of heuristic methods for making sense and sense making. A Conceptual-Heuristic Framework for Transformational Processes (MaCHT) helps to design, facilitate, and interpret outcomes and a heuristic tool to discover transformational synergies (Heptagram), both helpful when framing and reframing tasks. (Garrido, 2021). Finally, another important aspect is how to address ethical aspects through an Anticipatory Responsible approach.

As a Futures Literacy Action-Learning-Research, it distinguishes and articulates different contexts, purposes, and methodologies illustrated in the following graph: The Plan follows a 'knowledge creation learning curve' according to the general methodological framework of the Futures Literacy Laboratories (FLL), whose purpose is to shape a working agenda. The three PHASES of a standard FLL design (1- Recognition, 2- Reframing, 3- New questions and pro-

duction of knowledge to create alternatives in the present) are covered through the various activities that are proposed, as a means to generate information and knowledge, and, as part of a capacity building process to strengthen individual and collective anticipatory competencies.

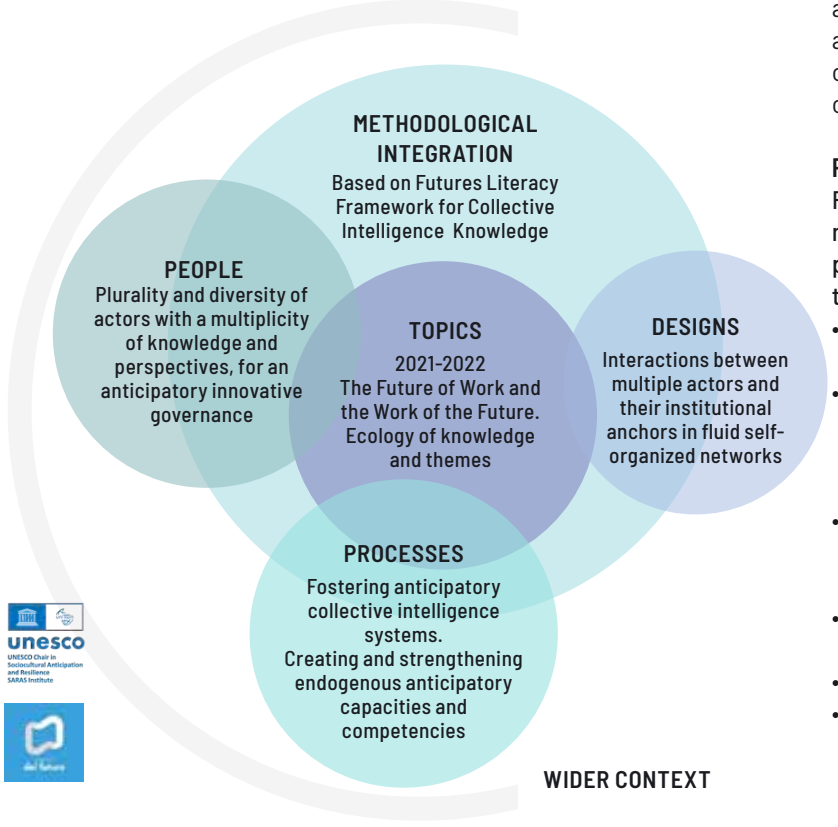
The design of the Methodological Working Plan articulates progressively and iteratively diverse activities and actors. The choice of techniques and participants is directly related to the purpose of each phase of the process. Multiple methodologies and work techniques were integrated (work groups, workshops, Delphi survey, techniques for collective and prospective reflection, Futures 'Laboratories' for co-creation, online public consultation, interviews, reports, events, etc.). Although each activity produces inputs and is a 'unit' in itself, (specifically designed, implemented, and evaluated), in turn, they feed the unique learning curve for 'using the future' and the knowledge generation process.

FUTURES LITERACY COLLECTIVE KNOWLEDGE CREATION PROCESSES
purposes, technics and participation



SPECIAL FUTURES COMMITTEE, PARLIAMENT OF URUGUAY
Figure of components, functioning and outcomes

Creating an ecosystem for anticipatory innovation governance



In sum, the practical work of the CEF articulates three fundamental components: (i) people, (ii) designs and (iii) processes, with (iv) a transversal methodological base that supports its operation: Futures Literacy Framework, for (v) a theme: the future of work and the work of the future, all of this (vi) with the aim of generating informed futures-oriented input for informed decision-making based on collective intelligence.

People:

Focus: To ensure diversity and plurality of actors within multiple areas of knowledge and perspectives, promoting participatory practices and Futures Literacy skills in order to advance in Anticipatory Innovative Governance.

- Promote plural, representative, and diverse participation using knowledge co-creation approaches.
- Ensure that they have the capacities to generate knowledge in terms of futures (literacy in the use of the future) and support their development (strengthening endogenous anticipatory capacities.
- Have institutions that support the generation of key skills critical mass and competencies to make a paradigmatic change.
- Invest in the capacities and skills of both young people and older generations (intergenerational dialogue).
- Put values in the front (ethical responsibility)
- Encourage the creation and active participation in local and international networks.

Designs:
Focus: promote interactions and learning opportunities between diverse actors and their institutional backgrounds in fluid, self-organized networks that feed the CEF with information and knowledge in real time and in terms of the future.

- The CEF is a key element in the articulation of different spheres of government, and social institutions and organizations, but also a natural promoter of intergovernmental dialogue, being open to broader social dialogue.
- Generate agile, open mind and accessible designs for plural and diverse interaction and learning opportunities (capacity building).
- It can be tested and allows acquiring knowledge on the go.
- It has tailor-made designs for context, purpose, and participants.

Processes:
Focus: knowledge co-creation through collective intelligence systems using the future literacy to improve how decision-making is informed in terms of futures, while creating and strengthening endogenous anticipatory capacities and competencies.

- Facilitate processes with 'tailor-made' designs and development processes (flexibility, ductility, ease).
- Encourage the creation of knowledge as part of collective intelligence processes encouraging thinking differently (embrace ways of creating shared meaning that allow agreement in disagreement/difference).
- Multiple and diverse knowledge (inter and trans-discipline).
- Facilitate specialized technical processes.
- Systematize and integrate this diverse amount of knowledge acquired. Multiple translations to generate understanding and shared languages and meanings.

III – On the substantive issue: The Future of Work and Work of the Future.

The purpose of addressing changes on work issues is *not to predict* what will happen in the future in the world-of-work, but to explore alternatives and reflecting on different types of change in the many aspects that society, communities of practice and economic endeavors are creating value (material and non-material) using the future to explore novelty and change. The aim is to better capture 'emergent', 'vectors of change', interactions and complex interdependencies to rethink the 'known' through entering new systemic parameters. In other words, the purpose is to reframe the 'known', the 'usual', accepting complexity, novelty and uncertainty to rethink. At the end of the day, we want to open up alternatives, discover new understandings and create opportunities. We seek to produce high quality, relevant content and information to expand the pool of options we have at present. These inputs can be useful for decision-making and to transform the future in the present (in other words, an anticipation that creates 'new' futures).

The issue has been addressed:

- As an ecosystem of knowledge & problems (that is, placing the focus on the relationships and interactions between various aspects, levels, dimensions and inter-twining of themes). Inter and transdisciplinary approach. Complex thinking.
- Focused on the interrelations between the 'here and now' and the medium and long-term visions.
- Contextualized inside the global-local interactions and multi-causality.
- Using Hybrid Scenarios (Miller, 2007) taking advantage of diversity of methods, context, purposes.
- Local and global knowledge created through collective intelligence. CEF has invited over 50 national experts (part of international networks; some living or working abroad) to have collective conversations as main primary sources. Other consultations and exchanges at the regional and international levels have also taken place.
- Wide bibliographic review in an Environmental Scanning mode.
- Systematic and Integrated Analysis as concrete output for decision-makers.

In order to prepare the Report on the Future of Work, the CEF has been working on designs to promote rich exchanges with a diversity of experts and participants based on the following five thematic axes:

1. Transformation and emerging vectors that encourage rethinking of the world of work as we knew it in the last century: permanence and differences, what challenges do they pose?
2. Transformation and emerging vectors that imply a rethinking of the economic and value production practices of the future: new technologies, sectors, practices, values and actors in the production of economic and non-economic value for a sustainable world from a framework of innovative ecosystem.
3. New skills for the 21st century: learning as a permanent process ("Intensive Learning Societies", Miller, 2006).
4. Long-standing societies (100+): Transition towards a future of longevity. Its impact on the world of work. Opening the menu of change beyond the problem of pressure on the Social Security system.
5. The governance of the Work of the Future: regulation and labor policy for a change of era.

These axes have been addressed in various work meetings with the participation of members of the group of experts and legislators of the CEF. In addition, they are integrated with seminars (some public and others internal in CEF sessions) where members of the group of experts present their work. Furthermore, in-depth interviews, focus groups and workshops have been carried out. The input is systematized and analyzed using the Futures Literacy Framework (Miller, 2018) to experiment and identify challenges to work on: vectors of systemic transformation, signs of change,

emergent phenomena, identification of threats, opportunities, inhibitors and change enablers, anticipatory assumptions. Multiple methodologies of the Futures Studies are articulated using FLF as a meta-framework (Environmental Scanning, SWOT Analysis, Delphi, 3 Horizons Framework, Causal Layered Analysis, Futures Literacy Laboratories and Hybrid Scenarios). The 'outcomes' are 'inputs' for decision-makers (inside and outside Parliament, in public and private institutions)

Having a Futures Committee in the Parliament as a specialized space for reflection and strategic futures analysis using processes of knowledge co-creation is a milestone towards an Anticipatory Innovative Governance. The Parliament is perhaps the sphere of government that makes the most intensive use of the future since it always legislates for tomorrow. Having a collective intelligence system for rigorous information and knowledge creation in futures key, expands democracy, sustainable development and responsible anticipation, social resilience, and innovation. Hence the emphasis on the importance of a relevant methodological approach for capacity building. •

1 Lydia Garrido Luzardo. Futures Methodological Advisor for the Special Commission on Futures of the Uruguayan Parliament, August 2022.

2 These include institutions aimed at support research, innovation, and development (ANII ANDE, INIA, INAC, Uruguay XXI, LATU, CEIBAL among others) Universities (Public and Private), Research Centers (Pasteur Institute, Clemente Estable, SARAS), Academy of Sciences and CONICYT, Chambers and Associations of entrepreneurs, technological entrepreneurs and workers, Think Tanks (Cuesta Duarte Institute, CED, CERES, CINVE, specialized journalists).

3 To 'use the future in a literate way' requires an explicit awareness of distinctive anticipatory systems and the associated logic that connects specific tools to specific tasks" Miller et als, 2018:59

4 See at: https://www.hofstede-insights.com/fi/product/compare-countries/. Geert Hofstede (2015) defines 'Uncertainty Avoidance': the extent to which the members of the culture or the national society feels threatened by ambiguous and unknown situations.

5 The Methodological Working Plan as well as the Technical Accompaniment is in charge of the UNESCO Chair in Sociocultural Anticipation and Resilience. The theoretical and methodological approach is based on Futures Literacy Framework (UNESCO, Miller, 2018), Discipline of Anticipation, Complexity Theory and Thinking and Action Learning & Co-Creation Pedagogies for Collective Intelligence processes.

6 The institutions that are supporting the technical support of the CEF are currently UNESCO through its Chair in Sociocultural Anticipation and Resilience at the SARAS Institute, UNDP with the Technical Secretariat, and the World Bank.

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The Parliament is perhaps the sphere of government that makes the most intensive use of the future since it always legislates for tomorrow.

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NATIONAL ASSEMBLY OF VIETNAM



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INTRODUCTION OF THE COMMITTEE ON SCIENCE, TECHNOLOGY AND ENVIRONMENT

I. Tasks and functions of the Committee

The National Assembly's Committee on Science, Technology and Environment is an agency of the National Assembly of the Socialist Republic of Vietnam, elected by the National Assembly for each term of the National Assembly.

Pursuant to the Law on Organization of the National Assembly, the tasks and functions of the Science, Technology and Environment Committee are specified in Article 77 as follows:

1. Verification of law and ordinance projects in the fields of science, technology, natural resources, environmental protection, response to climate change, natural disaster prevention and control and other projects assigned by the National Assembly and the National Assembly Standing Committee.
2. Supervising the implementation of laws and resolutions of the National Assembly, ordinances and resolutions of the National Assembly Standing Committee in the fields of science, technology, natural resources, environmental protection, response to climate change, natural disaster prevention and control; supervising the activities of the Government, ministries and ministerial-level agencies in the implementation of policies on development of science, technology, natural resources, environmental protection, response to climate change, and natural disaster prevention and control in national socio-economic development plans and programs.
3. Supervising documents of the Government, Prime Minister, Ministers, and Heads of ministerial-level agencies in the fields the Committee is in charge of.
4. Submitting a law project to the National Assembly, or an ordinance project to the National Assembly Standing Committee on the areas the Committee is in charge of.
5. Proposing issues related to the organization and operation of concerned agencies and issues of development of science, technology, natural resources, environmental protection, response to climate change, natural disaster prevention and control.

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2. Organization and operation of the Commission

The organizational structure and operation of the Committee on Science, Technology and Environment are stipulated in the Law on Organization of the National Assembly and the working regulation of the Committee on Science, Technology and Environment.

2.1. Organization of the Committee

At the first session of the 15th National Assembly (2021-2026), the National Assembly elected 43 members of the Committee, including 11 full-time members at the Committee. There are 04 full-time members in the locality who are the deputy head of the National Assembly Delegations of Can Tho City, Hai Phong City, Ha Nam and Nghe An provinces; other National Assembly deputies working directly at central and local agencies, research institutes, universities and enterprises; some deputies have had many terms as National Assembly deputies, others have academic titles, high scientific degrees, deep professional qualifications, extensive experience in National Assembly activities as well as in professional work.

2.2. Organization of the Standing Committee

The Standing Committee on Science, Technology and Environment Committee consists of 11 full-time National Assembly deputies, including 01 Chairman of the Committee who is also a member of the Party Central Committee, a member of the National Assembly Standing Committee, 04 Deputy Chairmans, 04 Standing Members and 02 full-time Members. Standing Committee on Science, Technology and Environment works under the collective mode and makes decisions by majority.

The Standing Committee shall perform its duties and authorities in accordance with the Regulations on the operation of the Ethnic Council and Committees of the National Assembly.

2.3. Organization of the Sub-Committees

Pursuant to Resolution No. 386/NQ-UBKHCNMT15 dated January 12, 2022 on the establishment of Sub-Committees, the Committee on Science, Technology and Environment has 04 sub-committees as follows:

a) Science, Technology and Innovation Sub-Committee: In charge of the Commission's activities in the fields of science and technology, innovation, information and communication technology, economy and finance.
b) Sub-Committee on Environment and Climate Change: In charge of the Committee's activities in the fields of natural resources, environment and climate change.
c) Agriculture and Rural Development Sub-Committee: In charge of the Committee's activities in the fields of agriculture, rural development, irrigation, biodiversity, natural disaster prevention, and food safety.
d) Sub-committee on Construction, Traffic, Industry and Trade: In charge of the Commission's activities in the fields of construction - architecture, urban, traffic, industry and trade.

The Sub-Committees work regularly to study and prepare issues in the areas of the Committee's activities; be responsible for researching and preparing the contents of work within the functions and tasks of the Sub-Committee in the areas assigned by the Committee and other issues assigned by the Committee, the Standing Committee, and the Chairman of the Committee.

The Committee on Science, Technology and Environment has a specialized agency to advise and assist is the Department of Science, Technology and Environment - Office of the National Assembly.

II. Some main contents and activities of the Committee

The main activities of the Committee on Science, Technology and Environment focus on verifying law projects, supervising and participating in deciding important issues of the country in the fields of science, technology, natural resources, and environmental protection, response to climate change, prevention and control of natural disasters.[1]

From the beginning of the 15th term (July 2021), the Committee on Science, Technology and Environment has continuously inherited, perfected and promoted its role in performing the assigned political and professional tasks, contributing to building and perfecting the relevant legal documents system; making science and technology to be the main driving force of the country, associated with stable, sustainable socio-economic development and protection environment, respond to climate change, and prevent and control natural disasters. The Committee on Science, Technology and Environment has focused on implementing a number of specific activities as follows:

1. Legislative work

The Committee focused on the implementation of the contents according to the Action Program of the National Assembly to implement the Resolution of the 13th National Congress of the Party and Resolution No. 161/2021/QH14 of the National Assembly on the work for the term of 2016-2021 related to legislative work in the areas the Committee is in charge of; at the same time, propose relevant contents in the functions, tasks of the Committee, serving the Strategy for building and perfecting the legal system by 2030, with orientations to 2045 to meet requirements for building and perfecting the socialist rule of law state of Vietnam. Accordingly, the legislative work of the Committee in 2021 and orientations for the 15th term will focus on reviewing to further improve the law on science, technology and innovation; natural resources, environment, climate change; information and communication technology, in order to promote the realization of the national digital transformation goal; circular economy development in Vietnam.

Since 2021, the Committee has focused on examining a number of Law projects, such as: Amending and supplementing the Electricity Law in the draft Law on Public

Investment (amended), Law on Investment in the form of public-private partnership, Law on Investment, Law on Bidding, Law on Electricity, Law on Enterprises, Law on Special Consumption Tax, Law on Civil Judgment Execution (approved by the National Assembly at the first abnormality Session on January 2022); The draft Law on amending and supplementing a number of articles of the Law on Radio Frequency (the National Assembly gives comments at the 3rd session in May 2022 and is expected to be approved at the 4th session in October 2022); Law on Consumer Protection (amended) (The National Assembly gives comments at the 4th Session of October 2022 and is expected to be approved at the 5th Session in May 2023); The draft Law on Electronic Transactions (amended) (The National Assembly gives comments at the 4th Session of October 2022 and is expected to be approved at the 5th Session in May 2023).

2. Supervision work

The Committee regularly organizes thematic monitoring missions in the areas the Committee is in charge of, for example: *The implementation of policies and laws on response to climate change; The implementation of legal policies on management of aquaculture, seafood processing and control of illegal, unregulated and unreported fishing; The implementation of policies and laws on the use of budgets to perform scientific and technological tasks at ministries, branches, localities and science and technology enterprises; The implementation of policies and laws related to national digital transformation; The implementation of policies and laws on consumer protection...*

The Committee also supervises the implementation of the Resolutions of the National Assembly on important national works such as Ho Chi Minh Road, Reservoir project in Nghe An and Ninh Thuan provinces...; regularly supervise the performance of tasks and state budget in the field of Science and Technology; environmental protection, response to climate change....; participating in the monitoring delegations of the Standing Committee of the National Assembly on *"The implementation of policies and laws on planning work since the Law on Planning came into force", "The implementation of the law on citizen reception and settlement of complaints and denunciations from July 1, 2016"; "Implementation of policies and laws on thrift practice and waste combat in the period of 2016-2021"; "The implementation of policies and laws on energy development in the period of 2016-2021".*

3. Regarding the work of verification, recommendations on the decision of important issues of the country

The Committee examined the Project on *"Ensuring water security and safety of dams and reservoirs for the period of 2021-2030, with a vision to 2045".* In addition, the Committee also coordinates with the Ethnic Council and other committees in verifying and deciding important issues of the country as assigned by the Standing Committee of the National Assembly and the National Assembly (the implementation of the Ho Chi Minh Highway project, activities of the Enterprise Science and Technology Development Fund...)

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Since the beginning of the 15th National Assembly term, the Science, Technology and Environment Committee has actively implemented many new tasks under the direction of the National Assembly, the National Assembly Standing Committee and the National Assembly Chairman related to the implementation of policies and laws on disease control in livestock; scientific research, development and technology transfer for the production of vaccines against the COVID-19 epidemic in Vietnam; natural disaster prevention and control and search and rescue in natural disaster prevention and control; research, development, and technology transfer for the production of drugs to treat and support the treatment of COVID-19 (including traditional drugs), medical equipment and biological products; the role of technology and scientific data in developing and implementing measures to prevent, combat and adapt to COVID-19; institutional framework for controlled testing of new products, services, and business models (sandboxes); summarizing 15 years of implementation of Resolution No. 27-NQ/TW, dated August 6, 2008 of the 10th Party Central Committee on "Building a contingent of intellectuals in the period of accelerating industrialization and modernization of the country"...

III. Suggestions and recommendations

In the context of the current situation of the world and the country with many changes, especially after the COVID-19 pandemic has affected all aspects of socio-economic life during the past 3 years, in order to ensure the good performance of the Committee's tasks and functions, the Committee has several recommendations as follows:

- It is necessary to continue to strengthen parliamentary diplomacy between the National Assembly of Vietnam and the Parliaments of other countries to share information and experience in areas of mutual interest.
- Build a database network of members attending Committees of the Future World Summit to increase interaction and regular connection on summit-related content and future cooperation.
- Promote cooperation between specialized committees of the National Assembly of countries, especially in the fields of science, technology, innovation and response to climate change.
- Strengthening activities to connect, share experiences about legislation, supervision in the fields of science, technology, innovation, response to climate change through conferences and seminars; exchange of delegations between the Committees of the National Assembly of the countries in a flexible form (in person, online) to form a wide and close international information network.

- Connecting reputable international organizations to develop specific cooperation programs with the National Assembly of Vietnam, the Committee for Science, Technology and Environment of the National Assembly of Vietnam to contribute to strengthening the capacity and experience for the National Assembly deputies of the National Assembly of Vietnam.
- Introduce international experts with deep expertise and experience in science, technology, innovation, and response to climate change for the Committee to consult in related activities.

1 Article 77. Duties and authorities of the Committee on Science, Technology and Environment - Law on amending and supplementing a number of articles of the Law on Organization of the National Assembly, No. 57/2014/QH13 dated November 20, 2014.

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The wellbeing of the people and the planet requires increased future-orientation in decision-making. Parliaments are the most appropriate institutions to support this.



PARLIAMENT OF FINLAND

THE WORLD SUMMIT OF THE COMMITTEES OF THE FUTURE 2022