Inter-Parliamentary Union
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IPU Charter on the Ethics of Science and Technology

The exponential growth of new technologies and their current and potential profound ramifications on society and the environment provide a compelling reason for parliamentarians, scientists and researchers to forge a synergy by cultivating a mutually-beneficial working partnership. Parliamentarians face the daunting task of crafting legislation in an era of unprecedented technological advancements that outpace the current legislative process and framework, necessitating a growing need to align policy with evidence and facts.

In 2014, the IPU Secretary General initiated discussions with the scientific community on how to apply scientific evidence-based approaches to politics. Subsequently, the IPU institutionalized this science-oriented strategy by signing a Memorandum of Understanding with the European Organization for Nuclear Research (CERN) in 2016. In this context, the IPU Working Group on Science and Technology (WGST) was established in 2021, and its members quickly identified the crucial need to protect the human rights and dignity of people, even in the economic realm, taking into account their overall well-being worldwide and acknowledging their connection to their respective ecosystems.

Accordingly, the WGST members devoted three years to developing a Charter on the Ethics of Science and Technology (the Charter) to ensure that the development and deployment of science and technology were carried out in a responsible, ethical and sustainable manner. It should serve as a reference point for parliaments, national governments, international organizations, scientists and researchers and other stakeholders, in the process of developing legislations, laws, policies and regulations related to science and technology. By promoting a global dialogue on ethical issues in science and technology, the Charter should facilitate international cooperation, foster innovation and enhance public trust in science and technology. It should also help parliamentarians embrace and promote science as a tool for advancing peace and development, while addressing the public's concerns and misconceptions often amplified by social media.

To meet this objective, the Charter establishes a framework of principles, values and guidelines that serve to guide decision-making, research and development, ensuring that science and technology are used for the betterment of humanity, society and the environment. This framework helps bridge the gap that separates scientific innovation from legislative and parliamentary oversight and ensures that technological progress aligns with human values and principles, particularly those enshrined in the United Nations Universal Declaration of Human Rights.

At the 148th IPU Assembly in Geneva, held from 23 to 27 March 2024, the initial draft Charter, signed off by the WGST members, was circulated to all IPU Member Parliaments and relevant partners to solicit their feedback and input. During this consultation process, feedback was received from the Parliaments of Canada, Nicaragua, the Russian Federation and Switzerland, as well as from academics, scientists and partner organizations, which helped enrich and enhance the Charter, making it more comprehensive and inclusive. Following the feedback deadline of 7 September 2024, the WGST convened in two meetings to review the proposed amendments. After carefully integrating relevant feedback, the WGST officially signed off on the finalized Charter on 23 September 2024. The IPU Executive Committee is invited to review this final version and recommend it to the Governing Council for formal adoption.

IPU Charter on the Ethics of Science and Technology

Preamble

Reaffirming the Inter-Parliamentary Union's commitment to peace, democracy and development, and *convinced* that scientific knowledge and expertise should substantively inform the efforts of parliamentarians, parliamentary researchers and decision and policymakers to attain the goals,

Reaffirming also the calling and commitment of the Inter-Parliamentary Union to prioritize a common understanding of science, placing humanity at its core, and to foster ethical considerations in the realm of science and technology, leveraging its platform to promote informed discussions, exchange good practices and develop frameworks that align scientific progress with ethical principles,

Acknowledging the profound impact of science and technology on humanity's progress, welfare and environment, the ethical responsibilities inherent in the pursuit and application of scientific knowledge, and the importance of ethical considerations in guiding the development, deployment and governance of emerging technologies,

Acknowledging also the persistent inequality between the Global North and South in accessing, benefiting from and contributing to scientific and technological progress, and the inherent gender, social and economic inequalities therein, and *emphasizing* the need for ethical frameworks that address these disparities and strive for equitable global participation, including youth participation, gender equality and social equality in accessing knowledge and contributing to advancements,

Recognizing the imperative for global collaboration and adherence to ethical principles in shaping the trajectory of scientific and technological advancements, mitigating their potential risks for the betterment of present and future generations without distinction and discrimination of any kind,

Recognizing also the profound influence of science and technology on societies, with the potential for both beneficial and adverse effects, the need for parliaments and parliamentarians to safeguard the interests of the people they serve and the ethical complexities inherent in the advancement of science and technology for the benefit of all humanity,

Taking into account the imperative of respecting the diversity of religions, beliefs, cultures and civilizations, of treating different social groups with fairness, equity and inclusiveness, and avoiding discrimination and biases in the pursuit and governance of scientific and technological advancements,

Recognizing the crucial need to safeguard and protect humanity from the potential risks and hazards inherent in scientific and technological advancements, including the risk of compromising human agency, autonomy and democratic principles, and from humanity being disempowered by present and future technological advancements,

We, parliamentarians present at the 149th IPU Assembly in Geneva, adopt the following Charter on the Ethics of Science and Technology, to serve as a framework of ethical principles to uphold the dignity, human rights and well-being of individuals and societies, while fostering innovation, sustainability and responsible stewardship of scientific and technological endeavours, sharing of knowledge, advocacy for policies that promote ethical practices in science and technology, and the harmonization of progress with the values and aspirations of our constituents and the global community. We urge governments, parliaments, international organizations, civil society, the private sector, academic and research institutions, and all other relevant actors around the world to be guided by its content.

PART I: Key ethical principles for regulating science and technology

In order to establish a comprehensive ethical framework, it is important to first clarify the scope of science as addressed by the present Charter. Science is referred to as a collective endeavour to advance knowledge and innovation across multiple fields, each contributing uniquely to the understanding, improvement and protection of human life and the environment, encompassing diverse disciplines such as natural, social and applied sciences.

Article 1 – Duty, responsibility and rational decision-making

Parliaments and parliamentarians are endowed with the significant responsibility of crafting laws that promote societal values, well-being, human fulfilment and harmony. This responsibility underscores the importance of rational and evidence-informed decision-making in the legislative and anticipatory governance process. To achieve this, proactive understanding, assessment, shaping and regulation of scientific and technological developments, while considering their long-term impacts and ethical ramifications, are of the utmost importance.

Article 2 – Rule of law

Acknowledging the foundational importance of the rule of law in enacting ethical principles for scientific and technological advancements, science and technology must be developed and applied within the framework of the rule of law at the national and international levels. Any development of science and technology should adhere to the ethical principles of equality, fairness, accountability and justice, established national and international legal principles, and human rights standards enshrined in international human rights law and international humanitarian law. Due process should guide the governance of technological innovation and its integration into societies. Upholding the rule of law safeguards against arbitrary use of power, fosters transparency, and promotes responsible behaviour in scientific and technological domains, ensuring alignment with ethical principles and societal well-being.

Article 3 – Preservation of research freedom and independence

Scientific curiosity, intellectual freedom and independence are fundamental values of research, requiring the autonomy of scientific enquiry to be upheld and protected, with ethical considerations guiding the process to ensure responsible and morally sound practices throughout scientific endeavours. Researchers have the right and liberty to explore, investigate and disseminate their findings without undue influence, censorship or restrictions that inhibit the pursuit of knowledge and the advancement of scientific understanding. This includes safeguarding intellectual property rights and the rights of researchers to choose methodologies, pursue innovative avenues of enquiry, and communicate their results transparently and responsibly to contribute positively to societal progress and the common good.

Article 4 – Transparency and accountability

Promoting transparent processes in scientific research, technological development and policymaking entails holding all involved parties accountable for their actions. It necessitates clear communication regarding the objectives, methodologies, outcomes and limitations of scientific research, as well as the reasoning behind policy decisions leading together to more comprehensive and inclusive public policy outcomes. Engaging a broad spectrum of stakeholders, including but not limited to scientists and researchers, ethicists, industry experts and civil society representatives in policy dialogue is essential, in order to ensure that scientific knowledge is properly integrated into political decision-making. Particularly in areas such as artificial intelligence and robotics, this principle underscores the need for clarity, transparency and human oversight to ensure societal well-being.

Article 5 – Data and privacy

The ethical handling of data is a critical pillar in mitigating the risks of scientific and technological advancements, including emphasizing the importance of responsible management and use of data and advocating for robust frameworks that prioritize and protect the privacy rights of individuals,

while harnessing the potential of data for societal progress. The ethical handling of data entails transparent data practices, informed consent and mechanisms to ensure accountability for data misuse. Cooperation and collaboration among nations is pivotal to establishing international standards for ethical data practices, fostering a future where scientific and technological advancements align with the ethical principles and values upheld by different societies.

Article 6 – Risk assessment and management

Scientific and technological advancements must be subject to regular evaluation for risks, including in relation to any unintended consequences emerging from their use. Effective strategies should be put in place to manage, communicate and address risks as an essential component for maintaining public trust, for safely integrating new technologies into societies and for mitigating any harm caused to various societies, in both the Global North and Global South. Ensuring protection against foreseeable risks is integral to the responsible development, deployment and use of technological advancements. This approach will contribute to the creation of safer and more resilient technological and digital landscapes in societies.

Article 7 – Continuous learning and adaptation

Acknowledging the rapid evolution of science and technology, the establishment of responsive policies and regulations founded on continuous learning is of crucial importance. This approach advocates for an iterative policymaking process that evolves in response to new information and changing circumstances. It emphasizes the need for ongoing learning, capacity-building, critical thinking and education that keeps pace with technological advancements and leads to the review and revision of standards, laws and regulations.

Article 8 – Preservation of peace and harmony

The primary objective of legislation and policymaking, including in the area of technological advancements, must be to ensure integral and lasting peace, understanding and cooperation among individuals and nations. The fundamental goal of these legislative and policy endeavours remains the fostering of harmonious relations, both within societies and across borders, underscoring the importance of steering technological advancements in a direction that not only serves human progress but also actively contributes to the development of humanity, global peace and international cooperation. While science can be used to advance national or regional interests, it should also stand as a unifying force transcending geopolitical boundaries, enabling mutual understanding and cultivating shared endeavours among nations. This includes leveraging the transformative potential of science in fostering diplomacy through dialogue, better international understanding, trust and collective problem-solving.

Article 9 – International cooperation

Humanity is a community with a shared future. Acknowledging that science transcends borders and should serve for the collective benefit of humankind, it is essential to strengthen worldwide collaboration and exchange in scientific knowledge development and related technological innovations, their ethical considerations, the assessment of impacts and mitigation of risks. Guided by principles of mutual respect, justice, equality, equity and non-discrimination, all countries and scientific research entities must have equal access to participate in international scientific and technological cooperation through inclusive and transparent international institutions. Any attempt to politicize, instrumentalize or militarize such cooperation must be firmly opposed. Countries must uphold genuine multilateralism, explore new models for global technological cooperation and partnerships that are mutually beneficial, and ensure that the achievements in scientific and technological innovation benefit humanity.

Article 10 – Sustainability and environmental stewardship

Recognizing the growing impact of technology on the environment, and ensuring that scientific and technological advancements are sustainable and environmentally benign, is of paramount importance. It is important that relevant actors advocate for and incentivize the development of technologies that contribute to the long-term sustainability of our planet, and call for international collaboration in formulating model regulations and international agreements that balance ecological sustainability with human rights, human integrity and human dignity.

Article 11 – Social justice and equity

A commitment to a fairer and more equitable distribution of the benefits of scientific and technological advancements across societies must underpin the work of all parliaments and governments. This approach addresses concerns that technology may exacerbate social inequalities, by ensuring that vulnerable groups, including people with disabilities and the poorest and most marginalized, are not overlooked, and advocating for technology to serve as an enhancer of human capabilities for all, actively combating societal disparities and ensuring equal access to knowledge for all.

PART II: Guidelines and recommendations for legislators

Legislators should endeavour to:

1. Recognize the importance of maintaining, and promoting the creation of, parliamentary and inter-parliamentary structures for the presentation of regular, neutral and evidence-based information to parliamentarians on science and technology, including the provision of advice on the relevant ethical aspects of technological development.

2. Periodically interact with relevant national, regional and/or international competent organizations on the ethics of science and technology, to acquire the best and most up-to-date understanding of the ethical implications of ongoing research, studies and applications, as well as of the most probable future scenarios, as presented by scientists and technologists.

3. Periodically interact with relevant national, regional and/or international competent organizations with expertise in the field of ethics, to obtain diverse perspectives on current and future scientific and technological developments, including humanistic and philosophical points of view. This interaction and these exchanges will help to define the evolving ethical limits that science and technology must not exceed with regard to respect for human rights, human integrity and human dignity.

4. Make available in a usable format to parliamentarians evidence-based and validated information provided by “technical” internal parliamentary science and technology advisory bodies for specific consultations with competent organizations or groups of experts on ethics. This will provide parliamentarians with a solid basis to establish the ethical limitations when considering new legislation or amending and updating existing laws.

5. Develop and agree on simple and clear checklists, possibly in coordination with the international parliamentary community, that parliamentarians can use to scrutinize existing legislation against ethical aspects or their expected evolution over time, and to determine ethical principles when considering new legislation or amending and updating existing laws.

6. When considering, drafting and examining new legislation that requires scientific evidence, ensure from the outset that such evidence is openly accessible and of the highest possible quality, adhering to the validation standards of the relevant scientific community or communities. This scientific evidence, including impact assessments and risk mitigation, must be as comprehensive as possible.

7. Promote monitoring and regular exchanges of experiences with other parliaments, both multilaterally through the Inter-Parliamentary Union and directly through open-source databases and other tools, on any relevant acquired knowledge relating to the development and use of science and technology and any associated ethical considerations. Exchanges of good practices on how this knowledge is translated into legislation should also be promoted.

8. Set up adequate structures, tools and platforms to periodically inform and consult civil society and the general public on parliament’s actions and programmes regarding the ethical considerations of science and technology in legislation, at the national, regional and international levels.

9. Before incorporating ethical principles related to science and technology into legislation, familiarize themselves with and evaluate the ethical guidelines that the science and technology communities have already established on their own. The ethical principles should be aligned with both national and international laws. Their incorporation into legislation should be the result of dedicated collaborative discussions and decisions by parliamentary committees, adhering to the diverse rules and procedures governing the legislative processes of each individual parliament.

10. Informed by open dialogue and extensive consultations with relevant experts from the areas of science, technology and ethics, monitor the adoption of new charters on the ethics of science and technology and the international instruments signed in this area, as well as the development of existing ethical charters, and intervene in legislation if its provisions breach national or internationally recognized ethical principles.

11. Regardless of the specific domain of application, regarding new legislation on science and technology related topics and the revision of existing laws, ensure respect of human rights, human integrity and human dignity, as well as compliance with the existing international conventions and charters recognized by the international community, as applicable.

12. Periodically review regulations and legislation concerning scientific research and technological innovation to ensure that they keep pace with rapid scientific and technological advancements, are effective in practice as intended and have no unintended consequences. Should parliaments deem it necessary, it is recommended to establish specialized parliamentary committees, to support the review and assessment of these regulations and legislation.

13. Support the dissemination of the results of scientific and technological innovation through open-access and peer-reviewed publications by allocating dedicated funding and necessary budgetary resources.

14. Integrate the ethical principles outlined in the present Charter into their national development plans, as well as into regulations and legislation related to scientific and technological advancements, ensuring that such progress prioritizes the well-being of humanity.