The future of AI governance

The G20's role and the challenge of moving beyond principles

The authors:

Julia Pomares
Executive Director,
CIPPEC

María Belén Abdala
Senior Coordinator,
CIPPEC

The institution:

CIPPEC

CIPPEC (Center for the Implementation of Public Policies for Equity and Growth) is an organization that strives to create an efficent, democratic, and just state to improve the quality of life for all Argentine citizens. It focuses its efforts on analyzing and promoting public policies that encourage equity and growth in Argentina.

THE CHALLENGE

The transition to a digital age has already begun and is moving fast. Artificial intelligence (AI) is bringing about new challenges and putting pressure on public institutions to change. Algorithms are increasingly being used by governments and businesses. They are transforming employment by means of automated evaluation tools, assisting in the provision of public services, streamlining government procedures, changing the way in which criminal justice works through predictive policing, and re-shaping educational systems by incorporating automated evaluation tools. But many of these developments have low levels of transparency, public knowledge, and lack supervision mechanisms. The risks of this transition are also substantial, posing severe governance challenges (Dafoe, 2018).

In their 2019 Communique, G20 leaders took a stand on this and stated the need to help societies adapt to the digital transformation of our economies. They have also endorsed the OECD's Artificial Intelligence Principles, setting-up the ethics or base values for AI deployment, voicing their desire to develop an AI centered on people, with respect for ethical and democratic values, which is transparent, safe and accountable. Nevertheless, few governments worldwide have launched comprehensive plans to promote the use and development of AI, setting national guidelines for its future. Those that have set an outline for AI tend to focus their roadmap on principles rather than on concrete goals (Dutton, 2018; Akerkar, 2019). No two governance strategies for digital technologies are the same, and differences between G20 countries are already surfacing. They vary in terms of the approach taken, the degree of institutional development and the link with the corporate sector. But there are cross-cutting issues to be addressed, such as the interoperability of systems, privacy and inclusion, which require common understandings, mechanisms and norms (WEF, 2019).

»Algorithms are increasingly being used by governments and businesses.«

Principles are the starting point of a much more complex process and little progress has been made yet on the policy aspect of AI and the regulations that are needed to reach those objectives. An extensive and successful incorporation of AI requires governments to redefine strategies based on the use of new technologies and to develop adequate governance structures. This paper seeks to contribute to the discussion by outlining the state of AI as a subject of regulation, presenting new questions for the debate about how to move beyond principles, and exploring the role the G20 could have in facing this challenge.

REGULATORY PATHS: AI AS A SUBJECT OF PUBLIC POLICY

As more automated decision systems are being used by public agencies, experts and policymakers worldwide are beginning to debate when and where automated decision systems are appropriate (Reisman, Schultz, Crawford, and Whittaker; 2018). The challenges for an equitable and inclusive AI implementation are many. It is not clear yet how to assess AI's effects or whether algorithms can fully cope with complex social and historical settings. Algorithms are human creations and as such, subject to the same biases people have. Its deployment depends, to a large extent, on the absorption of large stocks of data that can also be potentially biased (Lodge & Mennicken, 2017). Since much of the processing, storage and use of information is performed by the algorithm itself and within a virtually inscrutable black-box, experts are raising concerns as well about whether we can understand how this information is dealt with in order to scrutinize the decisions made and assign both ethical and legal responsibility for the results reached (European Parliament Research Service, 2016). Information is power and the usage and recollection of information without people's express

consent and knowledge infringes on their rights (Kerry, 2019; Schrock, 2018).

As a result, several experts, sector leaders and policymakers have agreed on the need to act, and have launched a series of guidelines for the set-up of AI systems. But the debate about the best path for AI is not settled, the possible models are varied, they cover a myriad of activities occurring across multiple jurisdictions, and few have been tested. The following lines present a conceptual approach for the existing AI regulations, assessing the landscape of technology governance across four different dimensions regarding: (i) the regulatory lens through which technologies are implicated, that is, the existence of vertical, sector-specific standards or transversal regulations; (ii) their governance geographical scope: whether they are pushed forward by supranational organizations, countries or subnational governments; (iii) the regulatory approach: whether more or less coercive; and finally (iv) the public-private divide in its making. In doing so, the brief's goal is not to put forward all the regulations that exist but to discuss the possible alternatives currently under debate and challenges they bring about.

The first dimension to assess regulatory schemes has to do with the divide between those who favor the sanction of vertical standards (eg. AI Sector Deal in the United Kingdom), and those who call for cross-cutting regulations (eg. Sample, 2017; Mulgan, 2016). The former argue that specific policy domains such as health or education have their own trajectories, regulatory frameworks and risks. Therefore, a national body of AI would have difficulties complying with these specialized requirements. The latter consider the need to develop shared standards and ensure interoperability, for example, of privacy systems. Some of the proposals include the creation of a guardian organ of AI responsible for monitoring how algorithms make decisions (Sample, 2017); a Council of National Robotics, without police power but with technical capacity to make recommendations (Calo, 2014); a Federal Algorithm Directorate, modeled after the US's FDA, with regulatory powers to evaluate the systems before they are launched on the market (Tutt, 2016); or a Machine Learning Commission that can create algorithms but without power to certify or approve these developments (Mulgan, 2016).

»The EU seeks to enhance cooperation on AI across Europe to boost its competitiveness and foster trust.«

A second dimension refers to the geographical scope of the regulatory initiatives and whether they are generated by supranational, national or subnational governance structures. While supranational norms set common standards for all countries that are part of these agreements, and therefore ensure a baseline of rights and guarantees for their citizens, such norms can overlook stark regional and local differences that may emerge not only in terms of the countries' technical capacities but also regarding their cultural and political context. Simultaneously, while national and local norms can allow for this diversity more easily, a fractionalized world in terms of people's access to rights, for example, to privacy, can not only reinforce present inequalities but can also lead to more tension as a result of uneven technological developments.

Many proposals have emerged from international organizations in the past few years, as geopolitical entities such as the UN, the EU and the OECD have begun to encourage the discussion on AI regulation. The goal behind many of these recommendations is to generate a human-centered approach for the development of AI, reducing differences among countries and ensuring a minimum of guarantees for all citizens. The OECD for instance, has launched a Council on Artificial Intelligence that published a series of general recommendations signed by 42 countries (36 belonging to the OECD, including the US, Argentina, Brazil, Colombia, Costa Rica, Perú and Romania)[1]. This document, geographically comprehensive, points to both responsibility and transparency in the creation of technology and its use, as well as a public, governmental drive for research, development and international cooperation in subjects related to AI. At the G20 Ministerial Meeting on Trade and Digital Economy, held in 2019 at Japan, the ministers approved these principles for AI as an annex to their declaration, which was later on ratified at the Osaka Summit.

Likewise, the European Union and the Nordic-Baltic region have also generated strategic plans for the development of AI. From the EU perspective, it is not only about leading technological development but also leading on regulatory matters. The European Commission seeks to enhance cooperation on AI across the EU to boost its competitiveness and foster trust based on EU values and ethics. The logic is human-centered and includes several requisites for AI systems to be considered reliable, regarding agency and human supervision; technical robustness, safety and the need for resilient systems to prevent or minimize unintentional damages; privacy and data governance; transparency; diversity, non-discrimination and fairness; social and environmental well-being; and accountability[2]. The Commission has presented these ethical guides to EU member states and different sector-specific actors, setting-up a pilot phase with a High-Level Expert Group on AI, comprised of 52 independent experts representing academia, industry and civil society, to gather feedback.

Moreover, the expert group also presented 33 recommendations to maximize AI's impact on citizens, businesses, administrations and academia, ensuring sustainability, growth and competitiveness, while empowering, benefiting and protecting individuals[3]. Among the many topics covered, a key recommendation is the proposal to adopt a risk-based governance approach to AI and to develop an appropriate governance structure and regulatory framework by mapping relevant

laws, assessing whether these are fit for purpose in an AI-driven world, and adopting new measures where needed to protect individuals from harm. The next step would be a revised version of the EU joint plan on AI. But the challenge this approach possesses is the interoperability of norms in countries with different cultural and political backgrounds. That is, the application of guidelines and shared values, rather than the principles themselves.

On the other hand, several countries have developed their own national strategic AI projects. Some with an explicit focus on stating their will to foster technological development, others focused on establishing ethical values and principles for AI research and development (see Annex I for a detailed case-by-case description). Estonia and China are clear examples of this. While Estonia brought together a group of experts from the public and private sectors to work on the preparation of a law that encompasses AI in a comprehensive manner, China presented the objectives of its plan, but postponed any regulations to the future. As for the question of the values of AI, China has launched the "Beijing principles of AI", a code of conduct for the research, development, use, governance and long-term planning of AI, elaborated by the Beijing Academy of Artificial Intelligence (BAAI), supported by the Ministry of Science and Technology, in collaboration with AI centers and universities[4]. The initiative was made public in mid-2019, as China-US tensions rose, and states the goal of supporting the construction of beneficial AI for both humankind and nature. While China's government is widely criticized for using AI to monitor citizens, the mentioned guidelines do not differ substantially from the ethical frameworks laid out by Western governments, which could signal a certain willingness to rethink its use of technology or, once again, that the principles themselves are not the main issue at hand[5].

As the interest in artificial intelligence rose, several subnational governments also decided to take the lead. The United States presents an interesting case in this matter. Despite having developed a national AI strategy and debating several bills within its territory, especially in matters of privacy (driven by legislators of the main parties and jointly designed with private companies or groups), the US does not yet have a comprehensive national regulation (Kerry, 2019)[6]. Still, the federal configuration of the country has enabled the sanction of some regulations at the state level. An example of this is the case of Nevada, where the first bill to regulate autonomous vehicles was sanctioned in 2011, although it did suffer some challenges that required subsequent modifications as autonomous vehicles were initially defined as any replacement of human operators by artificial intelligence, which encompass more instruments or tools than autonomous vehicles (Calo, 2014). Regulatory efficiency also brings about a certain learning curve. Moreover, in 2018, the state of California enacted one of the country's strictest laws on personal data protection, emulating the European law (Lecher, 2018). In 2019, activists and organizers across the US successfully advocated to pass laws banning facial recognition in several cities and members of the United States Congress proposed several bills to move this forward, such as a Commercial Facial Recognition Privacy Act of 2019, the Facial Recognition Technology Warrant Act, and the No Biometric Barriers Act of 2019 (Crawford et al, 2019).

Discussions about AI regulation concern a large part of the world, but as the previous cases show, few governance structures (regardless of their scope) have sanctioned specific norms or binding standards for research, production or use of AI. This leads to the third dimension: variations in the regulatory intensity. According to the Regulatory Institute (2018), Japan is the only country that has promoted a specific binding regulation on AI. In addition to developing a comprehensive national robotics program, in 2015 an information protection bill was approved to regulate the use of personal data. Its approach facilitates innovation through links between the public and private sectors and protects personal data rights (Regulatory Institute, 2018). This law also sets forward the creation of a commission to monitor compliance. Despite this, no other sensitive areas have been addressed, such as the regulation of autonomous vehicles, aviation devices, or security.

»Several countries have developed their own national strategic AI projects.«

Others, such as the United Kingdom, carried out an analysis on the state of AI and promoted the creation of bodies to study and monitor its needs. In line with this, the House of Lords studied the impact of AI and determined not to support the sanction of a broad regulation of AI, considering that specialists in each sector are better prepared to analyze their specific implications (House of Lords Selected Committee for AI, 2018). In addition, they urged the executive branch to create new government institutions: a government 'Office of Artificial Intelligence' and two advisory bodies – an AI Council and a Center for Data Ethics and Innovation. These institutions are tasked with connecting policymakers, industry leaders, civil society representatives, and the public, and analyzing the development of AI and the appropriate governance regimes for data-driven technologies. They are responsible for making technical and ethical proposals on its use and regulation, but do not have the capacity to impose legally applicable regulations (Blaikie & Donovan, 2018).

Singapore, on the other hand, recognized the need for a regulatory framework for AI, but initially adopted a lighter approach meant to promote its further development. In 2017, the Singapore government presented a guide for sharing data in accordance with the current law on the protection of personal data, in order to harmonize its use with the existing law. However, later on, the government established an AI ethics advisory council to give guidance both to government and businesses on the development and use of AI. Singapore also launched an AI programme (called AI Singapore) to coordinate the development of national capabilities and build a transparent ecosystem, and a National AI Strategy in which they

identified five key projects to ensure a successful adoption of AI. The national strategy also calls for support from the private and public sectors, and sets up a governance framework for AI, with guidelines for private-sector organizations to deal with key ethical and governance issues[7].

»Differences in the way new technologies are implemented can make it more difficult to ensure citizens have access to equal rights.«

Broadly speaking, the few regulations that do exist were sanctioned in developed regions and countries (where the use of AI is more expanded) and try to deal mostly with the handling of information and the use of personal data, but they have not included – so far – a more comprehensive regulation toward an adequate governance structure, monitoring and accountability regimes, or a clear consensus on the best way forward to achieve it.

Finally, AI regulations differ across a fourth dimension: that of the role of public vis-a-vis private institutions. Public-sector governance of emerging technologies often involves, but is not limited to, the development of legal or regulatory instruments to guide the research and implementation of these technologies. But governance mechanisms can also be privately created and enforced. Emerging technologies blur traditional boundaries. An interesting example is that of organizations such as the International Organization for Standardization (ISO), the world's largest developer of voluntary international standards, or the Institute of Electrical and Electronics Engineers (IEEE) and the International Electrotechnical Commission (IEC).

The case of AI has highlighted a growing influence of private companies in public domains and the need to rethink ways to achieve private accountability in an era of algorithms (Katyal, 2019). Therefore, many governments are also pursuing the expansion of public–private partnerships to accelerate advances in AI and enhance government capabilities. It is not just about regulating private-sector action but also about collaborating in the development of secure, transparent and accountable systems. This comes especially in the form of three-way collaborations between the government, private industry and research institutions. For instance, in 2019, the US Office of Science and Technology Policy launched an updated version of their National AI Research and Development Strategic Plan, a document that aims to guide agencies in their AI R&D priorities and endeavors, directing federal agencies to collaborate with the private sector and universities to accomplish their goals[8].

DISCUSSION

Despite the growth of ethical frameworks, AI systems continue to be implemented rapidly across spheres of considerable significance both by the public and private sectors – in healthcare, education, criminal justice, and many others (Abdala, et al, 2019) without appropriate safeguards or accountability mechanisms in place. The future of politics is still uncertain. Many challenges remain, and no single initiative, country, or company can tackle these challenges alone.

Emerging technologies are increasingly cross-border and significant opportunities could be lost without some level of alignment in the regulations and norms that guide technological development and implementation across jurisdictions (WTO, 2019). In a fragmented world, new tensions could emerge both within and between nations. In terms of economic prosperity, it could become more expensive for some technological systems to be developed, delaying innovation. This can also foster inequity and new types of divides between the more technologically advanced countries or regions and the lagging ones.

Moreover, regarding human rights, stark differences in the way new technologies (and AI specifically) are managed and implemented can make it more difficult to ensure that citizens have access to equal rights and opportunities across territories. New technologies can be used as fresh digital tools for surveillance, allowing governments to automate the monitoring and tracking of citizens; or they can help policymakers allocate public goods and resources more efficiently; or even be powerful mechanisms for private companies to predict our behavior. The storage and use of our personal data that is managed to power AI can be publicly or privately led. It can be given voluntarily, as a type of currency or taken without consent or knowledge. Overall, the road to the digital future is full of conflicts over who has access to our data, who has the authority to decide over it and who has the power to enforce that authority.

This does not mean, however, that all technology governance must be global. It is important for regions, states and cities to be able to respond to the specific social, economic and cultural demands of their citizens. In this sense, as most of the research has focused on developed countries, there is also a need for more knowledge on the locally specific impact of AI systems on countries in the Global South and the ways new technologies may reinforce historical inequities in these regions.

But global processes are valuable, even when they do not result in integrated systems, because inequality tends to get the upper hand in the absence of common standards. Defining comparable global levels for ethical, humanitarian, legal and politically normative frameworks will prove decisive in managing the digital transition and searching for social inclusion. Even more, there will be a growing need to move beyond ethical principles and focus on the standards needed for algorithms, taking into consideration the geopolitical and cultural differences that arise. The role of the G20 in aligning interests and leading such processes will prove to be key in the years to come. The G20 brings together the main political and economic forces of the world. It is geographically representative and it includes the world's largest economies.

As a key forum for debate and dialogue, both executive and parliamentary, it is the perfect platform to discuss the future of digital governance and respond to one of the biggest existing threats and challenges our world is facing today. There is not yet one right answer about the best roadmap for AI, but several options. We need to work together in defining which road will benefit the many. By engaging in this debate and leading the conversation, the G20 has the potential of becoming the spinal column of a new architecture for the 21st century and ensure a better future for all.

[1] https://www.oecd.org/science/forty-two-countries-adopt-new-oecd-principles-on-artificial-intelligence.htm

[2] https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai

[3] https://ec.europa.eu/digital-single-market/en/news/policy-and-investment-recommendations-trustworthy-artificial-intelligence

[4] https://www.baai.ac.cn/blog/beijing-ai-principles

[5] https://www.technologyreview.com/s/613610/why-does-china-suddenly-care-about-ai-ethics-and-privacy/

[6] Regarding ethics, the Trump administration launched an executive order in 2019 to set up the concept of an AI that follows 'American values', by which AI systems must reflect ideals such as human rights, freedom, and respect for privacy and the rule of law. The main focus lies in the idea of trustworthy, secure and understandable AI.

[7] https://www.imda.gov.sg/-/media/Imda/Files/Programme/AI-Data-Innovation/Model-AI-Governance-Framework---First-Edition.pdf

[8] https://www.whitehouse.gov/wp-content/uploads/2019/06/National-AI-Research-and-Development-Strategic-Plan-2019-Update-June-2019.pdf

Annex I: Examples of countries that have made it public that they are developing AI National Strategies (as of December 2019).

The federal government of Argentina announced the creation of a national AI plan (July 2018) but the plan has not been published yet. Available at: https://www.argentina.gob.ar/ciencia/desconferencia-plan-nacional-de-inteligencia-artificial (last accessed December 2019).

The federal government of Australia has dedicated $29.9 million in the 2019 country's annual budget to promote and guide the development of AI. Available at: https://www.industry.gov.au/strategies-for-the-future/boosting-innovation-and-science (last accessed November 2019).

The Austrian government set up an advisory Robot Council and is developing a national AI strategy. Available at: https://futureoflife.org/ai-policy-austria/ (last accessed December 2019).

The federal government of Canada has a national Pan-Canadian Artificial Intelligence Strategy. Available at: https://ppforum.ca/articles/keeping-up-with-the-speed-of-disruption-presentations/pan-canadian-ai-strategy-for-ppf-02march18/ (last accessed December 2019).

The Chinese government created a national AI strategy under the "New Generation Artificial Intelligence Development Plan". Available at: https://flia.org/notice-state-council-issuing-new-generation-artificial-intelligence-development-plan/ (last accessed December 2019).

Denmark's digital strategy includes a focus on AI along with other technologies. Available at: https://eng.em.dk/media/10554/digital-strategy-fact-sheet.pdf (last accessed December 2019).

Estonia is developing a legal framework for the use of AI, which includes a bill on AI liability. Available at: https://e-estonia.com/estonia-accelerates-artificial-intelligence/ (last accessed November 2019).

Finland set up an Artificial Intelligence Program within the Ministry of Economic Affairs and Employment. Available at: https://tem.fi/en/artificial-intelligence-programme (last accessed January 2020).

The French government defined a "AI for Humanity" strategy. Available at: https://www.aiforhumanity.fr/en/ (last accessed January 2020).

Germany launched an Artificial Intelligence Strategy (November 2018). Available at: https://www.de.digital/DIGITAL/Redaktion/EN/Meldungen/2018/2018-11-16-federal-government-adopts-artificial-intelligence-strategy.html (last accessed January 2020).

India announced a national policy on AI in a working paper "National Strategy for Artificial Intelligence #AIforAll". Available at: http://niti.gov.in/writereaddata/files/document_publication/NationalStrategy-for-AI-Discussion-Paper.pdf (last accessed January 2020).

Ireland hosted AI workshops and launched a national AI master's program. Available at: http://www.idaireland.com/IDAIreland/media/Infographics/IDA_AI_Ireland.pdf?ext=.pdf (last accessed December 2019).

Italy has an interdisciplinary AI Task Force – the Agency for Digital Italy. Available at: https://www.agid.gov.it/it/agenzia/stampa-e-comunicazione/notizie/2017/09/07/al-task-force-sullintelligenza-artificiale-al-servizio-del-cittadino (last accessed December 2019).

Japan launched an "Artificial Intelligence Technology Strategy" and included AI in its "integrated innovation strategy." Available at: https://www.nedo.go.jp/content/100865202.pdf (last accessed December 2019).

Kenya has a Blockchain & Artificial Intelligence task force. Available at: https://ai4d.ai/blog-africa-roadmap/ (last accessed December 2019).

Lithuania released The Lithuanian Artificial Intelligence Strategy (April 2019). Available at: http://kurklt.lt/wp-content/uploads/2018/09/StrategyIndesignpdf.pdf (last accessed December 2019).

The Mexican federal government published a white paper "Towards an AI Strategy in Mexico: Harnessing the AI Revolution." Available at: https://www.gob.mx/mexicodigital/articulos/estrategia-de-inteligencia-artificial-mx-2018 (last accessed November 2019).

The Netherlands launched the Strategic Action Plan for Artificial Intelligence in October 2019. Available at: https://www.rijksoverheid.nl/ministeries/ministerie-van-economische-zaken-en-klimaat/documenten/beleidsnotas/2019/10/08/strategisch-actieplan-voor-artificiele-intelligentie (last accessed January 2020).

New Zealand launched an AI Forum to advance the country's AI ecosystem. Available at: https://aiforum.org.nz/ (last accessed January 2020).

Russia released a national AI strategy in October 2019. Available in English at: https://cset.georgetown.edu/wp-content/uploads/t0060_Russia_AI_strategy_EN-1.pdf

Saudi Arabia established a National Center for Artificial Intelligence and an organization called the National Data Management Office, which will be linked to the Saudi Data and Artificial Intelligence Authority, in line with the objectives of the Kingdom's Vision 2030 program to enhance the drive toward innovation and digital transformation (September 2019).

Singapore launched a National AI Strategy with ethical guidelines and a national AI program called AI Singapore (November 2019). Available at: https://www.aisingapore.org/ (last accessed January 2020).

South Korea created an Artificial Intelligence Information Industry Development Strategy. Available at: https://english.msit.go.kr/english/msipContents/contents.do?mId=NDYx (last accessed December 2019).

Spain published an AI RDI strategy (March 2019). Available at: http://www.ciencia.gob.es/portal/site/MICINN/menuitem.26172fcf4eb029fa6ec7da6901432ea0/?vgnextoid=70fcdb77ec929610VgnVCM1000001d04140aRCRD&lang_choosen=en (last accessed January 2020).

Sweden released a "National Approach for Artificial Intelligence". Available at: https://www.vinnova.se/contentassets/29cd313d690e4be3a8d861ad05a4ee48/vr_18_09.pdf (last accessed January 2020).

Tunisia created an AI Task Force and Steering Committee to develop a national AI strategy. Available at: http://www.anpr.tn/national-ai-strategy-unlocking-tunisias-capabilities-potential/ (last accessed December 2019).

United Arab Emirates launched a national strategy for AI. Available at: http://www.uaeai.ae/en/

The United States of America launched the American AI Initiative. Available at: https://www.whitehouse.gov/ai/ (last accessed January 2020).

The United Kingdom released a Sector Deal for AI, taking into account the advice of the Parliament's Select Committee on AI. Available at: https://www.gov.uk/government/publications/artificial-intelligence-sector-deal/ai-sector-deal (last accessed January 2020).

Uruguay launched a public consultation of Artificial Intelligence for the Digital Government in April 2019 and is developing a strategy. Available at: https://www.gub.uy/participacionciudadana/consultapublica (last accessed January 2020).

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China and its Long March: End in sight? Not yet

Three reasons China started the "New Long March"

The author:

Wang Wen

Professor & Executive Dean of Chongyang Institute for Financial Studies and Deputy Dean of Silk Road School, Renmin University of China

The institution:

Chongyang Institute for Financial Studies at Renmin University of China (RDCY) was established on January 19th, 2013. It is the main program supported by an education fund with the 200 million RMB donation from Mr Qiu Guogen, an alumni of Renmin University of China, and now Chairman of Shanghai Chongyang Investment Group Co., Ltd.

RDCY is a new style think tank with Chinese characteristics. We have invited more than 90 former politicians, bankers, and preeminent scholars from over 10 countries as senior fellows. We also maintain cooperation with think tanks from over 30 countries.