



Third meeting of the
**Conference on Science, Innovation
and Information and
Communications Technologies** of the
**Economic Commission for
Latin America and the Caribbean**

Virtual meeting, 13–15 December 2021

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**REPORT OF THE THIRD MEETING OF THE CONFERENCE ON SCIENCE, INNOVATION
AND INFORMATION AND COMMUNICATIONS TECHNOLOGIES OF THE ECONOMIC
COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN**

Virtual meeting, 13–15 December 2021



UNITED NATIONS



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A. ATTENDANCE AND ORGANIZATION OF WORK

Place and date of the meeting

1. The third meeting of the Conference on Science, Innovation and Information and Communication Technologies of the Economic Commission for Latin America and the Caribbean (ECLAC) was held in hybrid format from 13 to 15 December 2021.

Attendance¹

2. Representatives of the following member States of ECLAC participated in the meeting: Antigua and Barbuda, Argentina, the Bahamas, Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Honduras, Italy, Japan, Mexico, Nicaragua, Norway, Panama, Paraguay, Peru, Plurinational State of Bolivia, Portugal, Republic of Korea, Saint Vincent and the Grenadines, Spain, Suriname, United States and Uruguay.

3. The following associate members of the Commission also participated: Anguilla, Aruba, British Virgin Islands, Curacao, Martinique and Puerto Rico.

4. The United Nations Secretariat was represented by the Resident Coordinators of the Dominican Republic and Panama, as well as representatives of the Resident Coordinators' Offices of Argentina, Barbados and Belize.

5. Also represented were the following United Nations agencies, funds and programmes: United Nations Population Fund (UNFPA), Food and Agriculture Organization of the United Nations (FAO), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Industrial Development Organization (UNIDO) and International Labour Organization (ILO).

6. Representatives of the following intergovernmental organizations also participated: Caribbean Community (CARICOM) and the European Commission.

7. Representatives of cooperation agencies and non-governmental organizations also attended.

B. AGENDA

8. The Conference adopted the following agenda:

1. Election of the Executive Committee.
2. Adoption of the agenda and organization of work.
3. Presentation of the position paper *Innovation for development: the key to a transformative recovery in Latin America and the Caribbean*.
4. Keynote presentations.

¹ See annex 2.

5. Thematic discussion panels.
6. Other matters.
7. Consideration and adoption of the proposed biennial programme of activities for regional cooperation in science, innovation and information and communications technologies, 2022–2023.

C. SUMMARY OF PROCEEDINGS

9. The opening session, held in person, was addressed by Alicia Bárcena, Executive Secretary of the Economic Commission for Latin America and the Caribbean (ECLAC); Daniel Filmus, Minister of Science, Technology and Innovation of Argentina; Paola Vega Castillo, Minister of Science, Innovation, Technology and Telecommunications of Costa Rica; and Santiago Cafiero, Minister of Foreign Affairs, International Trade and Worship of Argentina (pre-recorded video message).

10. The Executive Secretary of ECLAC noted the collective work to continue positioning science, technology and innovation (STI) issues at the centre of the debate in the region and referred to the importance of achieving a regional STI strategy. In the context of the COVID-19 pandemic, the key importance of science, technology and innovation to development had become more evident than ever, but it had also become very clear how far behind the region had fallen. She underlined the development in record time of vaccines against coronavirus disease (COVID-19) and noted that the pandemic had exposed serious asymmetries between the developed and developing world, as were clearly manifested in access to vaccines. STI initiatives were expected to be very important in achieving a transformative recovery, with equality and sustainability at its core. The international community and the multilateral system had not been up to the task of a collective response, and each country had had to respond individually, which meant that a great deficit in international solidarity had had to be contended with. The risk was that global asymmetries would become even more acute.

11. She stressed that the Conference would discuss the role of science, technology and innovation in such important areas as self-sufficiency in health matters and that it was imperative to make progress in the health industry and bridging the digital divide. She recalled that the region had been the hardest hit by the pandemic and that this stemmed, in part, from overcrowding in cities, lack of public goods and fragmentation of health systems. This had resulted in a fall in GDP which, in turn, had led to higher levels of informality and poverty, as well as the closure of many companies. She said that this had exacerbated structural problems and warned of higher debt levels, interest payments, inflation and fiscal space. Referring to the region's growth forecasts, she said that they were neither realistic nor based on STI, and that it was necessary to move from an extractive model to one of sustainable production, from a culture of privilege to one of equality, from a culture of income and wealth concentration to one of redistribution (especially of knowledge).

12. She said that the region had the capabilities to produce vaccines and was ready to create a platform for clinical trials and vaccine regulatory bodies. In the areas of digital technology, robotics and new technologies to decarbonize the economy, among others, science, technology and innovation were required, and they did not necessarily have to be developed country by country, but through a regional strategy by which progress could be shared. She said that STI initiatives had hitherto been in the hands of the public sector. The need to import vaccines and equipment had demonstrated the region's dependence. She reflected on the opportunity to create regional—and perhaps subregional—digital markets and said that it was not infrastructure, but regulation that prevented this; regulatory systems needed to be aligned. Capacities did not develop on their own but were long-term processes that required complex investments and production structures. Lastly, she stressed that there were some issues, such as STI, on which countries wanted to act together, and that it was essential to move towards the structural change that had been so elusive in the region.

13. The Minister of Science, Technology and Innovation of Argentina reflected on growth, equality and the productive model in the region, which was based on Fajnzylber's "empty box" concept. He recognized that there could be no productive process with sustained development unless STI components were incorporated and that it was necessary to aim for a comprehensive development programme incorporating such elements. The lack of economic and logistical integration in the region was an obstacle to regional trade, which, in turn, was an obstacle to the development model. Regarding vaccines against COVID-19, he recalled that 85% were concentrated in the G20 countries and pointed out that Argentina and Brazil were in a position to create vaccine production platforms and that it was necessary to aim at regional integration to meet the challenges of the pandemic. In Argentina, a call had gone out to the scientific community, which had focused its work on pandemic-related issues, and work was under way on the development of four national vaccines for use in the region. With regard to digital technology, he said that the countries of the region exported their most highly skilled workers (scientists and technicians working from their own countries for the major powers) because it was not possible to compete with the salaries offered to them in other countries. He also said that it was necessary to develop common strategies at the regional level to better address this challenge.

14. The Minister of Science, Innovation, Technology and Telecommunications of Costa Rica said that the Conference was a space that would allow the region to continue advancing with the enormous potential it had. The pandemic had shown how scientific teams from different parts of the world had made great efforts and, thanks to digitization, shared knowledge for a common good. One of the great lessons of the pandemic had been to re-emphasize the importance and potential of digitization. The pandemic had also shown how much could be done to harness the intellectual potential of the region. In that regard, she lamented the brain drain from the region and said that international knowledge networks could help to prevent it. The pandemic had also exposed the digital and knowledge divide, and there were still major challenges ahead in terms of connectivity, digital literacy and scientific literacy to reposition science, technology and innovation in all its dimensions in order to build the desired society. In a world where traditional jobs were being displaced and new types of work were emerging, women's participation was key. In that regard, she said that the gender dividend in the countries of the region was an opportunity to achieve the critical mass of scientists needed to combine efforts and achieve development goals. Lastly, she reiterated that the challenges posed could be overcome by working together.

15. In his video message, the Minister of Foreign Affairs, International Trade and Worship of Argentina said that Argentina considered ECLAC a strategic partner in promoting a new regional agenda that would improve the prospects of a region facing such challenges as the need to improve social inclusion, economic growth expectations, physical infrastructure and investment levels. The Conference agenda reflected that, while continuing to address the pandemic, governments were also sharing experiences in current and future issues. He said that the knowledge economy was the sector with the greatest potential, since it generated value and employment, expanded export capacity and had a direct impact on the real economy and on people's quality of life. One of the main objectives was to educate for the new "economy 4.0" with a productivist vision, and the Government of Argentina was working to build a smart State that would provide quality public goods and seek to be the natural partner of the private sector. Together with all the region's countries, Argentina would remain committed to designing policies to help reduce scientific and technological, social, environmental and gender gaps. Lastly, he expressed particular appreciation to ECLAC for preparing the document on the plan for self-sufficiency in health matters presented at the sixth Summit of Heads of State and Government of CELAC, held in Mexico in 2021.²

² See Economic Commission for Latin America and the Caribbean (ECLAC), *Plan for self-sufficiency in health matters in Latin America and the Caribbean: lines of action and proposals* (LC/TS.2021/115), Santiago, 2021.

Election of the Executive Committee (agenda item 1)

16. The following members were elected to serve on the Executive Committee of the Conference on Science, Innovation and Information and Communications Technologies of ECLAC:

<u>Chair:</u>	Argentina
<u>Vice-Chairs:</u>	Costa Rica Guatemala Mexico Peru Saint Vincent and the Grenadines

Presentation of the position paper *Innovation for development: the key to a transformative recovery in Latin America and the Caribbean* (agenda item 3)

17. The paper was presented by Mario Cimoli, Deputy Executive Secretary of ECLAC, who said that it would serve as a basis for discussion at the meeting. The analysis of the topics addressed in the paper should be frank and direct. Global asymmetries had become plain in the production capacity of COVID-19 vaccines and in the investment in research and development linked to the production system. Science and technology had played a decisive role in the COVID-19 crisis. In the region, research was underfunded, and little had been spent on science and technology for many years, while the production system exported raw materials with no value added and expertise was shrinking. In addition, production segments outside the region were being replaced with digital technologies and there would come a point when value chains would no longer serve the region.

18. The relationship with the private sector, which received few incentives, needed to be strengthened. Multilateral models were wearing out and it would be increasingly difficult to access technology. The region also lagged far behind in terms of patents to facilitate development. As for the institutional framework, science and technology were ministerial-level matters; however, in practice, such ministries played a limited role and were not allocated a sufficient budget. Furthermore, science and technology policies should be State policies and not be subject to changes in government. It was a critical moment to prevent asymmetries from continuing to widen, to generate processes at the local level adapted to the needs of the countries in the region, and to take advantage of the benefits of international agreements. Lastly, he noted that action was needed to build a science and technology base for equality and sustainable development.

19. Following the presentation of the paper, Diego Hurtado, Secretary for Planning and Policies on Science, Technology and Innovation of the Ministry of Science, Technology and Innovation of Argentina, pointed out that science and technology were the result of cumulative processes and that institutional instability in Latin America and governments with “re-foundational” intentions were an obstacle to such processes.

Keynote presentations (agenda item 4)

20. Four panels and a round table were held virtually, which are detailed below.

Institutions, policies and instruments for science, technology and innovation

21. The panel was moderated by Lidia Brito, Director of the Regional Bureau for Science in Latin America and the Caribbean of the United Nations Educational, Scientific and Cultural Organization (UNESCO); participating were Diego Hurtado, Secretary for Planning and Policies on Science, Technology and Innovation of the Ministry of Science, Technology and Innovation of Argentina; Paola Vega Castillo, Minister of Science, Innovation, Technology and Telecommunications of Costa Rica; Delia Aideé Orozco Hernández, Assistant Director of Technological Development, Linkage and Innovation of the National Council for Science and Technology (CONACYT) of Mexico; Phillip Jackson, Science and Technology Coordinator of the Ministry of Education and National Reconciliation of Saint Vincent and the Grenadines, and Claudio Maggi, Regional Adviser of the International Labour Organization (ILO).

22. The Director of the Regional Bureau for Science in Latin America and the Caribbean of UNESCO introduced the participants and explained that the purpose of the panel was to analyse the main strengths and weaknesses of the science, technology and innovation systems of the countries of Latin America and the Caribbean, in order to look for ways to act together to build knowledge societies and ensure for citizens the human right to the benefits of science and technology in a region where inequalities were a major challenge for public policies and development actors.

23. The Secretary for Planning and Policies on Science, Technology and Innovation of the Ministry of Science, Technology and Innovation of Argentina explained that one of the goals of the government's STI work agenda, linked to a previous diagnostic assessment of the national situation, was to make progress on territorial imbalances and develop local—that is, provincial and regional—agendas, based on an increase in human resources and infrastructure in the interior of the country, as well as on policies that focused on demand for scientific and technological knowledge in each of Argentina's regional economies. The onset of the pandemic had forced a reshuffle of priorities, and emphasis had been given to the generation of interministerial and inter-institutional coordination processes and the promotion of public-private partnerships in order to produce the necessary expertise to tackle the pandemic. As examples of the necessary but scarce scientific and technological collaboration in the region, he mentioned the Centro Latinoamericano de Biotecnología and the Latin American and Caribbean Space Agency (ALCE).

24. The Minister of Science, Innovation, Technology and Telecommunications of Costa Rica explained that, in order to strengthen the STI system in Costa Rica, changes had been made to the law, which had provided for a confused allocation of responsibilities between the National Council for Scientific and Technological Research (CONICIT) and the Ministry of Science, Innovation, Technology and Telecommunications (MICITT). This had made it possible to allocate resources more efficiently and facilitate project implementation. In addition, the concept of innovation had been explicitly included in law and a loan had been renegotiated to boost STI areas in the private sector, strengthen fast-track training of people for their incorporation into the technology industry, and generate entrepreneurial capacities in e-commerce, diversification of knowledge-based products, or the bioeconomy and circular economy, and so on. The region had renowned experts in different disciplines, but investment constraints made it impossible to achieve certain objectives. Therefore, in addition to continuing efforts to improve national STI systems, it was important to connect those experts in order to take advantage of the complementary capabilities of the different countries.

25. The Assistant Director of Technological Development, Linkage and Innovation of Mexico's CONACYT framed her remarks within the context of Mexico's public policy on the humanities, science, technology and innovation. First, she underscored the importance of CONACYT for the Government of Mexico as the linkage hub for national STI capabilities that ensured that the country's scientific expertise

could be translated into sustainable solutions for social benefit and that would allow it to become increasingly less dependent on foreign technologies. The objective of the Mexican innovation model was to transform the local reality and its priorities were health, human security and energy. She remarked on the great contribution of private enterprise to co-investment projects with the government and referred to the development of a Mexican COVID-19 vaccine and the design, production and scale-up of two invasive mechanical ventilators, explaining that the national innovation ecosystem had made it possible to complete in five months a process that normally took three to five years. Lastly, regarding international cooperation, she said that an open science and innovation approach was needed to meet the new challenges.

26. The Science and Technology Coordinator of the Ministry of Education and National Reconciliation of Saint Vincent and the Grenadines explained that, as small island developing States (SIDS), they were consumers of STI products, rather than producers, so the social innovation aspects that enabled technology transfer and adoption were the most important in their case. He said that the necessary components for technological innovation were in place in the region but that they did not function in a dynamic and systemic manner, and that one of their main drivers was to respond to demand from entrepreneurs for assistance and financing. Other initiatives to stimulate the system included the establishment in 2020 of the Caribbean Climate Innovation Center, under a World Bank programme, and technology extension services, through which research centres in different areas had been able to provide collaboration and advice to companies with specific technological needs. Lastly, he advocated regional cooperation, which could be facilitated through a multilingual platform where service providers and companies could share best practices and opportunities, and that such cooperation be fostered not only among high-level technical mechanisms, but also among ordinary citizens, whose motivation was the resolution of immediate conflicts at the community level.

27. The Regional Adviser of ILO noted that local innovation economies had already been under strain for years as a result of the technological changes caused by digital transformation. Technological change had opened up many opportunities, but it had the potential to exacerbate the differences between those who were able to take advantage of it and those who were not. The pandemic had led to huge job losses, especially in the informal sector, and the way in which small and medium-sized enterprises (SMEs) were encouraged to take advantage of the opportunities created by the crisis had been rethought. It was also time to promote digital skills-development programmes for workers, including those that involved adapting to the new digital work environment. He also said that it was essential, in addition to strengthening capacities, to improve the linkage between STI systems in the region and to incorporate a mission-oriented perspective into public policies. Lastly, he said that creating learning communities was essential for moving towards a knowledge society, and many of those communities had to be at the regional level. He gave the example of the internationalization spaces provided by the Pacific Alliance, which allowed entrepreneurs to access markets in other countries.

The role of science and technology in health sovereignty

28. The panel was moderated by Nicolo Gligo, Economic Affairs Officer of ECLAC; participating were Ricardo Palacios, international expert in clinical and pharmaceutical research; Ennio Vivaldi Véjar, Rector of the University of Chile; Genaro Rodríguez, Deputy Minister of Science and Technology of the Dominican Republic; Arturo Reyes Sandoval, Director-General of the National Polytechnic Institute of Mexico; Rolando Pérez Rodríguez, Director of Science and Innovation of the Higher Organization of Business Management (OSDE) BioCubaFarma of Cuba; Clara Ocampo, Director of Knowledge Generation, Ministry of Science, Technology and Innovation of Colombia; Graciela Ciccía, Director of Innovation and Technological Development of Grupo Insud of Argentina; and Marco Aurélio Krieger, Vice-President of Production and Innovation in Health of the Oswaldo Cruz Foundation (Fiocruz) of Brazil.

29. The Economic Affairs Officer of ECLAC opened the discussion by explaining that the panel was part of the work carried out by ECLAC at the request of the Community of Latin American and Caribbean States (CELAC) to develop a plan for self-sufficiency in health matters for Latin America and the Caribbean. The plan proposed strengthening the region's drug and vaccine research and production capabilities to increase its resilience and autonomy in these areas, so that what transpired during the COVID-19 pandemic would not happen again. Although the plan offered a comprehensive overview in the area of health (regulatory aspects, clinical trials, intellectual property, public procurement and consortia formation), its focus was on industrial policy, since the aim was not only to provide drugs and vaccines to the population, but also to develop a regional industry to meet those needs. The objective of the panel was to address the more specific aspects of science and technology from the business, academic and public sector perspectives.

30. In his introductory remarks on science as a strategy for national and regional security, the international expert in clinical and pharmaceutical research referred to the ecological imbalance created by human occupation of natural spaces, which was the main cause of the emergence of new viruses such as HIV, Zika and, possibly, the COVID-19 virus. This, coupled with the current high level of interconnectedness of populations, was expected to make public health emergencies increasingly frequent. He mentioned that the effects of pandemics were not only short-term, since, although mortality had been decreasing thanks to vaccination, COVID-19 (and other diseases such as chikungunya) had sequelae that could also affect people's health in the long term. Moreover, health and the economy were closely interrelated, with the result that public health problems could have very serious and lasting consequences at the economic level. However, inaction was often observed in terms of the region's preparedness for such situations. Pandemics were to be treated as matters of national security, as was the case, for example, in the United States in the case of influenza. Since viruses knew no borders, international cooperation was also essential to prevent their spread. In addition, scientists had to find a way to get through to society and its different strata, the political class, trade unions and civil and military organizations, among others, in order to convey a clear and explicit message that science should be considered a priority, so that countries could react in a timely manner and have better chances in the face of future pandemics.

31. The Rector of the University of Chile reflected on the need to make explicit the fact that many political decisions were based on the rationale that it did not make sense for the region's countries to invest in science and technology, since they considered it more profitable to buy it from other countries that were more developed in those areas. That is what had happened in the case of Chile, which in the past had decided to halt domestic vaccine production. Hence, he explained, the existence of a project to restart vaccine production in the country by building a centre that would be part of the large academic project in Parque Carén, along with other innovation centres related to food and construction. He also said that the academic sector had tried to reach out to persons in the political arena to provide scientific support for the measures adopted to deal with the pandemic, but it was up to the politicians to decide whether or not to incorporate their input. Universities needed production centres that incorporated the private sector, so it was very important to strengthen the link between public universities, the State, international organizations and private enterprises. Coordination and working together in crisis situations were essential.

32. The Deputy Minister of Science and Technology of the Dominican Republic reflected on the concept of health sovereignty, which he defined as the power of sovereign States to establish policies that allowed them to take the necessary steps to avoid dependence on other countries in the area of health. Collaboration between States should not be at the expense of their sovereignty. The pandemic had shown that health problems could lead to political, economic, food, educational, social and environmental crises, so it was important to apply the "one health" principle to address health in all its aspects from a systematic perspective. The fundamental problem in the context of the COVID-19 pandemic had been the lack of preparedness of countries to deal with such a crisis. In that regard, he referred to the need to train human

resources at the highest level in research, development and the different fields that had an impact on health; ensure science and technology infrastructure to address emerging problems; improve the relationship between the academic, productive and governmental sectors to boost the production of knowledge and transfer that knowledge to the health sector and industry; and implement policies that favoured the investments needed to guarantee the health sovereignty of countries.

33. The Director-General of the National Polytechnic Institute of Mexico noted that the crisis had given countries the opportunity to learn about their main problems and to address them. He stressed the need to invest in science and technology so as not to continue perpetuating the economic patterns —such as exporting oil and buying gasoline— that were a feature of the region. Although this type of investment was often unattractive because it did not immediately bear fruit, science should be a priority. The training of human resources was extremely important, as someone had to be in charge of managing innovation centres, developing the relevant regulations or developing vaccines or other inputs. For that reason, Mexico was committed to the creation of a postgraduate degree in vaccinology, the first of its kind in the world, and was interested in sharing that idea and promoting collaboration with the rest of the countries in the region.

34. The Director of Science and Innovation of OSDE BioCubaFarma of Cuba highlighted that the three vaccines developed by the country had already completed their phase 3 clinical trials and received authorization from the Cuban regulatory authority for emergency use. The factors that had determined this outcome were, firstly, the fact that Cuba had invested heavily in biotechnology since the 1980s, which showed that investment in science and innovation had a direct bearing on response capacity in health emergencies and was a determinant of the technological sovereignty of countries. Second, Cuba's installed industrial capacity was coupled with a health system with an immunization and primary care programme of wide coverage and accessibility. Third, Cuba's regulatory authority had played a key role in the vaccine development programme. Other factors that had had an impact were the proactive and mindful participation of the population, health education, social communication and efficient innovation management. Among other things, he recommended promoting good practices in the area of vaccine manufacture, investing in experimentation for the production of active pharmaceutical ingredients and in vaccine development laboratories (based on regional collaboration networks) and promoting regulatory harmonization among the agencies of the different countries in the region. Lastly, he underscored the need for a multidisciplinary, inter-institutional management model that would promote direct dialogue with government authorities.

35. The Director of Knowledge Generation of the Ministry of Science, Technology and Innovation of Colombia said that the different academic, business and governmental sectors had shown an enormous capacity to react to the emergency, and that the response to the different calls from the Ministry to reduce dependence on foreign inputs or to strengthen the diagnostic capabilities of laboratories, among others, had been very positive. However, there were structural problems that often hindered the full development of projects. She underscored the linkage difficulties encountered between companies and the academic sector in reaching the production and marketing stages, owing to the risks entailed in the large investments required. Some calls for proposals (related to the production of chips or vaccines) had met with little success, which had made it necessary to consider implementing a comprehensive road map for building capacity in the country, encompassing the entire production chain, from basic research for knowledge generation to production. There were also obstacles related to intellectual property or financial sustainability, as well as tax and regulatory issues (since the regulatory systems in some countries were very rigid and not favourable to research). She also recalled that, if quality research was what was intended, it was necessary to have the capacity to finance it.

36. The Director of Innovation and Technological Development of Grupo Insud of Argentina listed some of the country's capabilities: specialized human resources (especially in the area of biotechnology), regulatory authorities with extensive experience in the approval of biological products, a regulatory framework for the promotion of investments and a developed biotechnology industry. She said that the pandemic had highlighted the value of having the productive infrastructure and human resources necessary to produce technology, as demonstrated by the development of proprietary vaccines in Argentina. She also defended the importance of the linkage between the knowledge of scientists, who were more innovative and disruptive, with that of technologists, who were familiar with regulation, marketing and production according to standards. The Director also reflected on the need for integration, not only at the regional level, but also between the public and private sectors, and gave as an example a hyperimmune equine serum whose development and marketing had been possible thanks to the collaboration of several Argentine private companies and public agencies.

37. The Vice-President of Production and Innovation in Health of Fiocruz of Brazil explained that the Foundation had been created 121 years before to combat epidemics of bubonic plague, smallpox and yellow fever in the country, so Brazil already had a robust ecosystem, ranging from basic research to production, capable of developing new products. That ecosystem had made it possible to respond to the challenges of the pandemic, although it had been necessary to increase the production capacity at facilities and resolve numerous logistical challenges for the development of diagnostic kits and vaccines. The necessary capabilities and platforms in the region were essential to provide a rapid response; for example, the Foundation had been able to complete the technology transfer process for the production of the AstraZeneca vaccine in a few months, something that could normally have taken up to 10 years. He said that the importance of epidemiological surveillance and preparedness for future pandemics had been one of the main lessons to be learned from the crisis and emphasized the need to combine genomic surveillance for early detection of variants of concern, digital monitoring to assess their impact on the health system and immunological surveillance to assess the level of protection afforded by vaccines and to be able to modify them if necessary.

Digital technologies for a new future

38. The panel discussion was moderated by Raúl Echeberría, Executive Director of the Latin American Internet Association (ALAI); its participants were Martin Hilbert, Full Professor of the University of California, Davis (UC Davis), in the United States; Guido Girardi Lavín, Senator of the Republic and Chair of the Committee on Future Challenges, Science, Technology and Innovation of the Senate of Chile; Félix Chang, Deputy Minister of Information and Communications Technologies of Ecuador, the country chairing the Ministerial Conference on the Information Society in Latin America and the Caribbean; Yuri Castro, Director of Information Technology of the National Secretariat of Science and Technology of Guatemala; Carlos Kan, National Director for Innovation of the National Authority for Government Innovation of Panama; Gabriel Hernandez, Director of Information Technology Infrastructure and Operations of the National Agency for e-Government and the Information Society (AGESIC) of Uruguay; Rodney Taylor, Secretary-General of the Caribbean Telecommunications Union (CTU); and Olivier Bringer, Head of the Unit of Policy Outreach and International Affairs of the Directorate-General for Communications Networks, Content and Technology of the European Commission.

39. The Executive Director of ALAI introduced the panel and explained that, in analysing the role that technologies had played during the pandemic, the role of digital development in economic recovery and growth strategies, and the acceleration of digital transformation, it was clear that there had been many achievements in Latin America and the Caribbean. However, the countries of the region were not well positioned in global digital competitiveness rankings. They were progressing along the path of digital

transformation, but not as efficiently as other countries. The world was going through a period of change that offered countries the opportunity to reposition themselves in the global order, and the region needed to reflect on how to do so with a more strategic perspective that would allow it to see both the opportunities and the challenges of technological evolution.

40. In his introductory remarks, the Professor from UC Davis in the United States said that a migration was under way from the information age to the knowledge age. For several years, the world's most highly valued companies had been classifying themselves as artificial intelligence companies, in other words, knowledge companies, and they had a great deal of power and influence over the world's economies. Companies such as Uber, Amazon, Spotify or Airbnb were creators and owners of knowledge; they possessed information on the behaviours and preferences of their users and, through algorithms, controlled all that knowledge acquired in their respective sectors and could predict consumption patterns. In that regard, he pointed out the importance for Latin America and the Caribbean to start creating knowledge about their local industries and sectors, to prevent it from being absorbed by companies from outside the region. He also spoke of the need to "evangelize" on the subject of digitization, given that the changes taking place were enormous. The goal was to create a knowledge economy by adding value to the economy of the analogue world. Another major challenge, he said, had to do with consumers. It was necessary to protect the brains of the citizens, because, ultimately, it was their knowledge that was being competed with. Latin America was a world leader in terms of time spent on social networks, and Internet browsing was constantly monitored by Google or Facebook, so citizens had to learn to protect themselves in a world where it was the content of the mind that created economic value.

41. The Senator of the Republic and Chair of the Committee on Future Challenges, Science, Technology and Innovation of the Senate of Chile said that an epoch change was under way in which everything that was known (universities, politics and ideologies created from the second industrial revolution) was dying, and the new era reflected a different speed. For the first time, humans had created technology that their brains were not capable of governing. This was giving rise to uncertainty and the need for immediate solutions. The future was not a political subject and was not reflected upon, since human beings lived governed by social networks, which did not allow for reflection. Geopolitics had changed: the oil of the twenty-first century was data, which the digital platforms fought over, and the engines were algorithms. The whole economy of the twenty-first century was focused on capturing attention, so the brains of human beings had to be protected from that continual assault and from false, polarizing and aggressive content. What happened online was transferred to social existence in the real world, so it was necessary to regulate the virtual world by implementing in it the same rights and obligations as in the real world. He said that the most important technology for the survival of humankind was artificial intelligence, which could help it overcome its most serious problems, but could also destroy it. The question was how to ensure that technological evolution did not remain in the hands of a small number of actors and how to democratize data and regulate cyberspace so that the neoliberal model would not be deepened, leaving control of the world to the owners of large technology companies.

42. The Deputy Minister of Information and Communication Technologies of Ecuador, the country chairing the Ministerial Conference on the Information Society in Latin America and the Caribbean, noted that governments should play a facilitating role by adopting modern policies and fostering clear long-term strategic partnerships in different industries. They also had to play an incentivizing role aimed at accelerating the digital transformation of industries that required support in the areas of research or education, as well as boosting innovation, technology, business incubators and start-ups by offering subsidies or tax benefits. Ecuador was seeking to reduce its large digital divide and, to that end, it was crucial to establish partnerships with the academic sector. He also mentioned the need for greater interaction between central government institutions to achieve common goals. The government was trying to expand

4G network coverage in the country, but in the medium term the goal was to take advantage of that network deployment to achieve 5G technology. Lastly, as important elements for the country's digital development, he highlighted the expansion of fibre-optic connectivity and the creation of centres of excellence for 5G technology, digital inclusion, public policy and regulations on spectrum allocation and management of its optimization, promotion of cybersecurity and data protection, promotion of employability through new skills and curricula adaptation, digitization of administrative procedures and citizen participation in matters of public interest to improve decision-making.

43. The Director of Information Technology of the National Secretariat of Science and Technology of Guatemala said that, to avoid being left behind, governments should develop their digital agendas with an eye on the future, including disruptive elements; in other words, not only traditional education, but also digital education. Digital technologies could help solve various problems in countries, so Guatemala needed to adapt its curriculum to include systemic knowledge, such as computational thinking, and provide education in the use of technology, not only for social network consumption, but also for people's development and that of the country's economy. The digital divide was very wide in the country, which was a challenge, but it was necessary to create new opportunities for children by incorporating science and technology into education and modifying the education system to familiarize them with digital technologies from a very early age, which in the long run would also help to improve research and development.

44. The National Director for Innovation of the National Authority for Government Innovation of Panama said that the digital agenda was a guide for the joint work of the various STI agencies and increased investment in science and digital government, not only with the aim of developing or implementing disruptive technologies, but also and above all, to solve the region's problems. One of the most important issues was that disaggregated data were either not available, or not accessible, timely, accurate or reliable. In addressing the pandemic, data quality had been prioritized above all else, to enable public policies to be generated in a coordinated manner and with collective intelligence. He also said that human capital was essential to fostering the participation of micro-, small and medium-sized enterprises (MSMEs) in the digital economy: adapting working frameworks or digital skills models was key. Accordingly, Panama had reformulated public sector jobs through the Skills Framework for the Information Age (SFIA), in order to have officials trained to meet the demands of MSMEs. However, it was also essential to mainstream and increase the availability of services at all levels, which was why work was being done to improve citizens' competence and skills in digital procedures.

45. The Director of IT Infrastructure and Operations of AGESIC of Uruguay highlighted the importance of the availability of connectivity, infrastructure and services for consumption by citizens and for government agencies to interact with each other and facilitate processes. AGESIC had created the infrastructure and developed and maintained the technologies necessary to make various services available to citizens, including cloud services. It was still making significant efforts to look to the future and see how to streamline processes that had already been digitized, as well as testing new technologies. In that regard, data were essential not only for decision-making, but also for making predictions and working to meet the future needs of citizens. A significant challenge was how to use artificial intelligence responsibly in the public domain. AGESIC worked mainly in three areas: capacity-building related to the generation of data and algorithms, capacity-building in the agencies that owned the data, and analysis and use of information. Work was also being done to control biases in the use of artificial intelligence and to improve management of the ethical aspect of decision-making on information held by the government about citizens. With regard to the generation of algorithms, the aim was to improve transparency in their development and use, and permanent monitoring of their results using indicators and impact assessment tools created for that purpose.

46. The Secretary-General of the Caribbean Telecommunications Union noted that the challenges of the Caribbean subregion were similar to those experienced by all Latin American countries, particularly with regard to the need to focus on the development of long-term government strategies and policies to support and encourage innovation and entrepreneurship with the necessary investment. The pandemic had forced governments to accelerate digital transformation initiatives, and significant investments had been made through loans from the Inter-American Development Bank (IDB) and the World Bank to modernize public sector services. Investment was essential to develop a digital innovation ecosystem linked to the public sector that would enable the creation and growth of local ventures that developed home-grown technological solutions. The Caribbean had the mechanisms to develop a digital market, but it was important to go beyond the regulatory and commercial framework provided by the Caribbean Community (CARICOM) and consider the countries of the region as a single market that could provide opportunities for the creation and commercialization of home-grown solutions. Lastly, he proposed positioning the region as a leader in the emerging technology of the metaverse, the next step in the evolution of the Internet, following the example of Barbados, the first country in the world to create a digital embassy.

47. The Head of Unit of Policy Outreach and International Affairs of the Directorate-General for Communications Networks, Content and Technology of the European Commission broached the issue of cybersecurity, as there was a growth trend in illegal content and false information on the Internet. These were long-term issues and warranted a place in digital agendas. In that area, it was essential to engage with the various stakeholders to ascertain what the real problems were and develop public policies based on dialogue and their proposals. In Europe, a digital agenda had been developed that focused on the areas of infrastructure (to extend fibre optics and 5G networks across the region), skills (basic and advanced), modernization and digitization of companies, and modernization of public administrations (use of an electronic identity for access to public services). He mentioned that the European Union's digital COVID-19 certificate was a good example of how public policymakers could react quickly to resolve a crisis. In the context of the pandemic, a regulatory framework and the necessary technology had been created to allow the free mobility of people, while respecting their security, privacy and rights. Regarding the nationality of the large technology platforms operating in the European Union, he said that it was not a relevant issue, as any company wishing to offer services in the European market had to follow its rules, including those on data protection and information security. In all areas, including digital transformation, the European Union had adopted a human-centred, rights-respecting approach and taken a stand against any model that infringed on rights.

Eco-innovation, the energy transition and sustainable production

48. The panel was moderated by Joseluis Samaniego, Chief of the Sustainable Development and Human Settlements Division of ECLAC; participating were Diego Roger, Adviser on the Energy Transition of the Ministry of Science, Technology and Innovation of Argentina and Director of Biofuels of the Secretariat of Energy of the Ministry of Economic Affairs of Argentina; Armando Rodríguez Batista, Deputy Minister for Science, Technology and the Environment of Cuba; Pedro Bernal Pérez, Director of Policies and Programmes of the National Council for Science, Technology and Technological Innovation (CONCYTEC) of Peru; Carlos Eduardo Pereira, Director of Operations of the Brazilian Enterprise for Industrial Research and Innovation (EMBRAPII); and Monica Luz, international expert in eco-innovation and sustainability.

49. The Chief of the Sustainable Development and Human Settlements Division of ECLAC introduced the panel and explained that ECLAC, in the position paper of its thirty-eighth session, *Building a New Future: Transformative Recovery with Equality and Sustainability*, published in 2020, had put forward an approach to the 2030 Agenda that made it possible to determine the growth rates needed to be able to reconcile its three pillars (people, prosperity and planet). In Latin America and the Caribbean, the growth

rate needed to close the gaps and eliminate poverty by 2030 was high and had to be accompanied by a major redistribution effort. However, that rate was much higher than the one allowed by the structure for international insertion of the region and, therefore, of financing for development. Moreover, if nationally determined contributions (NDCs) were met, the region's growth potential was further diminished. The only alternative was structural change, with new incentives for investment, taking advantage of the opportunities offered by innovation and technological change to boost sectors that were more intensive in terms of creating employment, required fewer imported elements and had a smaller environmental footprint, such as renewable energies, electric vehicles, the circular economy, the bioeconomy, sustainable tourism, digitization or the health industry. Lastly, he emphasized that greater regional cooperation would flatten the learning curve in the various technological areas.

50. The Adviser on the Energy Transition of the Ministry of Science, Technology and Innovation of Argentina and Director of Biofuels of the Secretariat of Energy of the Ministry of Economic Affairs of Argentina said that the topic of energy transition would be included as a national challenge in the National Plan for Science, Technology and Innovation 2030. The great triad for the energy transition in terms of electricity supply comprised nuclear, hydroelectric and wind energy, since there were already technological and industrial capacities in the country to increase its scale (and Patagonian wind was an important advantage for the development of the third source). Gas was an abundant resource with a track record in the transportation sector, so it could serve as a transition source for displacing hydrocarbons from the energy mix. Therefore, the Ministry's work had focused on capacity-building in these areas, although other areas had also been targeted, such as solar thermal energy, which could help replace hydrocarbons in industry. Lastly, he mentioned that experimental hydrogen plants had been in operation for some time and that a large project had been announced to export green hydrogen to Europe, so this resource represented a comparative advantage in the market for Latin America. From the point of view of regional cooperation, one development possibility was in the area of energy security, which would require the development of a regional road map for energy transition, cooperation in infrastructure and natural resources, and a combination of the countries' energy mix.

51. The Deputy Minister for Science, Technology and the Environment of Cuba said that his country was promoting an STI policy with the environment as one of its fundamental pillars. The very creation of the Ministry of Science, Technology and the Environment sent a clear message of how essential it was to connect science, technology and innovation policies with economic and industrial policies and environmental protection. The concept of the environment was essentially anthropocentric, so improving the quality of life and developing a better social project for the country should be at the heart of public policies. The pandemic had provided a learning opportunity in the public policy sphere in general. The STI system in Cuba had made great contributions in countering the pandemic, and had allowed, among other things, more than 92% of the country's population to be vaccinated with Cuban vaccines, an important demonstration of technological sovereignty. At the core of Cuba's post-pandemic development and recovery strategy were policies to promote science and innovation, always in coordination with other areas of public policy. The environment and natural resources were another key pillar: Tarea Vida, a State plan for the fight against climate change, was approved in 2017. With regard to the possibilities of regional cooperation, he noted that acquiring institutional experience took many years, so it was important to gain time and minimize uncertainties by accessing lessons learned in other countries and institutional frameworks.

52. The Director of Policies and Programmes of CONCYTEC of Peru said that eco-innovation was an opportunity for the region's development within the framework of the SDGs. In Peru, there were many opportunities to promote sustainable development, but also obstacles, such as the need to align public policies with that strategic vision. The national innovation system was being reformed and a new science, technology and innovation policy had been proposed, moving from a sectoral approach in promoting

specific industries to a cross-cutting perspective focused on driving four interrelated strategic areas: green development (which included the circular economy, renewable energies and the bioeconomy), comprehensive health, decent housing and the digital economy. Other challenges related to implementation were training researchers who could contribute to generating knowledge and innovations in those fields, improving infrastructure and technological equipment for those purposes, and encouraging companies to make their production processes cleaner and produce products aligned with the principles of the circular economy. Lastly, it was necessary to coordinate STI policies with industrial policies and those of other sectors such as agriculture and tourism, and to have an adequate and updated regulatory framework that would not constrain the development of emerging technologies. In conclusion, he mentioned four areas in which regional cooperation could be very useful: (i) experience-sharing among enterprises that had implemented successful sustainability initiatives, (ii) joint implementation of research projects to solve common challenges, (iii) information-sharing to formulate better public policies and (iv) comparative analysis of standards and regulatory frameworks to promote eco-innovation.

53. The Director of Operations of EMBRAP II explained its origins as an organization linked to Brazil's Ministry of Science, Technology and Innovation, based on the idea of promoting joint projects between academia, industry and government to develop innovative solutions and processes. This model opened up opportunities and demonstrated that, with government investment and joint work with the academic sector, it was possible to develop innovative solutions that could be exported. He mentioned that EMBRAP II had a network of 76 units and projects involving almost 1,000 different enterprises, among which he highlighted successful experiences in the area of health, specifically in relation to remote operations and medical equipment. There was a lot of scientific output in Brazil, but not so much innovation; the challenge was to find ways in which the knowledge generated might contribute to the development of innovative solutions. In the EMBRAP II model, projects were not only carried out with public funds, but also sought to attract private investment to finance innovation, and this joint effort helped to increase scientific output and ensure that the projects addressed current issues relevant to the companies. Regional cooperation could help to raise awareness of these initiatives, identify synergies and reduce costs, as well as provide SMEs and technology start-ups with opportunities for collaboration and access to new markets.

54. The international expert in eco-innovation and sustainability noted that without eco-innovation—which allowed for the development of new, greener technologies—it was not possible to make progress in sustainable production and, at the same time, carry out an energy transition increasingly based on renewable energies. She also stressed that there was a widespread lack of information in the region on these three matters, which was essential for the proper formulation and evaluation of public policies and for providing citizens with an assurance of transparency. The problem differed from country to country, ranging from a lack of information to a lack of data disaggregation, which rendered them unusable. One reason was the complexity of measuring such phenomena. ECLAC had developed a methodology for measuring sustainable production, for example, in the manufacturing sector, and it was necessary to train professionals in that regard. At the same time, these were multidisciplinary matters, and there was often a lack of coordination among the various institutions responsible, which led to an inefficient use of financial resources. Another difficulty encountered by business owners was a lack of long-term institutional policies or resources that would offer them security when investing and changing their production processes. Among possible mechanisms for acting on supply and demand in this area, she mentioned capacity-building so that entrepreneurs would know what green production really consisted of; the promotion of the latter, not through punitive laws, but through tax incentives and subsidies; development of codes of good practice and platforms for cooperation between companies, the academic sector and potential sources of financing; and education of the public as consumers of sustainable products.

Thematic discussion panels (agenda item 5)

55. Six thematic discussions were held, as detailed below.

The diaspora and the circulation of talent in Latin America and the Caribbean

56. The panel was moderated by Sebastián Rovira, Economic Affairs Officer of the Division of Production, Productivity and Management of ECLAC; participating were Hebe Vessuri, Lead Researcher of the National Scientific and Technical Research Council (CONICET) of the Patagonian Institute of Social and Human Sciences (IPCSH) of Argentina; Luciano D’Ascenzo, Networks and Technical Secretariat Coordinator of the Advisory Committee of the “ROOTS” Programme of the Ministry of Science, Technology and Innovation of Argentina; Talía Verónica García Aguiar, Coordinator of Support for Scholars and Researchers of the National Council for Science and Technology (CONACYT) of Mexico, and Indianna D. Minto-Coy, Academic Director (MScs) and Senior Research Fellow of the Mona School of Business and Management of the University of the West Indies (Jamaica).

57. This panel discussed the importance and challenges of implementing strategies and policies to retain highly skilled professionals or attract them back and to link researchers from the region living abroad with their peers in countries of origin. In the introduction to the topic, it was mentioned that the Latin American experience showed that it was key to adopt appropriate network governance modalities in order to take advantage of the benefits of mobility. The panellists agreed on the need for governments, with the collaboration of the productive sector, to promote exchanges and invest in local STI systems in order to create an enabling and welcoming environment for the reabsorption of professionals. They also recognized the various ways in which talent abroad could contribute to addressing national development needs, even without having to return home, which required the development of a diverse range of public policy instruments. The panel raised interesting questions about the value that could be generated by the circulation of researchers among the countries of Latin America and the Caribbean, with a view to attracting the knowledge and talent of new generations, and a proposal was made to create a programme similar to the European Erasmus programme, adapted to Latin American purposes.

Development of genome repositories in Latin America and the Caribbean

58. The panel was moderated by Rolando González-José, Coordinator of the PoblAr Programme in Argentina; participating were Sandra Romero Hidalgo, Medical Sciences Researcher at the National Institute of Genomic Medicine of Mexico; Iscia Lopes Cendes, Head of the Medical Genetics Department, Medical Sciences Faculty, University of Campinas (UNICAMP) of Brazil; Andrea Llera, Researcher of the National Council of Scientific and Technical Research (CONICET) of Argentina; José Edgardo Dipierri, Full Professor of the Institute of High-Altitude Biology of the National University of Jujuy of Argentina; Mariana Berenstein, representative of the Innova-T Foundation of Argentina; Gustavo Sibilla, Coordinator of the GENis Project of the Sadosky Foundation of Argentina, and Hernán Dopazo, Researcher of CONICET of Argentina.

59. The panellists examined the experiences, progress made and challenges faced by Latin American and Caribbean countries in population-based medical genomic research, especially with regard to establishing biobanks and formulating research and development strategies for precision medicine. It was mentioned that one of the obstacles to the advancement of precision medicine in the region was that the vast majority of available genomic studies had been conducted in mainly European populations, so extensive fieldwork was needed in the region. In addition, the marked differences between populations, not only between those living in the different countries, but also between those within each country, was

identified as an element that represented an additional complexity and should be taken into account when developing genomic studies in Latin America and the Caribbean. Notable among the various policy challenges mentioned were those related to access to information and privacy protection. Emphasis was also placed on the fundamental importance of coordinating and involving different ministries, institutions and public and private stakeholders in promoting the development of repositories.

Policies and incentives to stimulate new business models and new productive capacities in small and medium-sized enterprises (SMEs) in the digital age

60. This panel was moderated by Álvaro Calderón, Chief of the Innovation and New Technologies Unit of the Division of Production, Productivity and Management of ECLAC; participating were Benjamín Germany Morrison, Manager of the Centre for Industry 4.0 of Chile; Juan Heguiabehere, Director of the ICT Security Programme of the Sadosky Foundation of Argentina; Marcelo Marzocchini, Operational Director of the National Institute of Industrial Technology (INTI) of Argentina; Marcos Pinto, Director of the Department of Innovative Entrepreneurship (DEEMI) of the Ministry of Science, Technology and Innovation (MCTI) of Brazil; Clelia Hernández Orta, Director of the Nuevo León 4.0 Initiative of Mexico; Sandra Gisella Acero Walteros, Director of Micro-, Small and Medium-sized Enterprises, Ministry of Trade, Industry and Tourism of Colombia; and Guillermo Timote, representative of the Centre for Industrial Automation and Mechatronics (CAIME) of Uruguay.

61. The panel discussed ways in which policies could boost and support the incorporation of digital technologies in businesses, particularly in SMEs. The panellists agreed on the main challenges that SMEs were facing, such as the lack of basic digitization skills and access to financing. Successful initiatives were presented relating to the diagnostic assessment of the needs of smaller firms, training, promotion of education and skills in ICT areas, individualized technical and financial assistance, and promotion of emerging companies. Specific suggestions were also made on how to continue strengthening regional cooperation; for example, by joining efforts to enhance diagnostic tools (and developing, to that end, a common definition to categorize and share the experiences of the region's countries); disseminating and raising awareness of regulatory issues (competition, security, interoperability and access) and organizing a forum for regular dialogue with policymakers and experts.

Science, technology, engineering and mathematics (STEM) and gender

62. This panel was moderated by Ana Güezmes, Chief of the Division for Gender Affairs of ECLAC; participating were Mónica Zalaquett Said, Minister of Women's Affairs and Gender Equity of Chile, in her capacity as Chair of the Regional Conference on Women in Latin America and the Caribbean; Paola Vega Castillo, Minister of Science, Innovation, Technology and Telecommunications of Costa Rica; Diana Broggi, Undersecretary for Training, Research and Cultural Policy of the Ministry for Women, Gender and Diversity of Argentina; Ana María Franchi, Chair of the National Council for Scientific and Technical Research (CONICET) of Argentina; Kim Mallalieu, Senior Lecturer of the University of the West Indies, Saint Augustine (Trinidad and Tobago); Vera Álvarez, Lead Researcher of CONICET of Argentina; Priscila Chaverri Echandi, Research Professor of the School of Biology of the University of Costa Rica; and Francisca Varela, Director of the Kodea Foundation.

63. The panel focused on public policies for gender equality in science, technology, engineering and mathematics (STEM) disciplines in the region. In the introduction, gender gaps in STEM careers were highlighted as a global challenge. Inequality began in childhood, worsened in the educational system and adversely affected the workplace. In order to meet these challenges, the panellists stressed the importance of promoting an agenda for action at different levels (global, national and local), the implementation of

which required interlocking public policies on gender and diversity with other policies, plans and programmes in the areas of culture, education and science, among others. Initiatives to popularize STEM disciplines aimed at motivating girls to pursue these careers were considered pivotal to begin changing social notions about the role of women in society.

The contribution of aerospace and satellite technologies to sustainable development: spaces for further regional and international collaboration

64. This panel was moderated by Sandra Torrusio, Technological Linkage Manager of the National Commission on Space Activities (CONAE) of Argentina; participating were Gustavo Henríquez Camacho, Chief of the Office of Cooperation and International Relations of the National Commission for Aerospace Research and Development of Peru; Rosa María Ramírez de Arellano, General Coordinator of International Affairs and Security in Space Matters of the Space Agency of Mexico; Alejandro Román Molinas, General Director of Aerospace Execution and Development of the Space Agency of Paraguay; Carlos Giovanni Corredor, Advisor to the Office of the Vice-President of the Republic of Colombia and the Colombian Space Commission; and Fernando Hisas, Adviser to the Executive and Technical Directorate of CONAE of Argentina.

65. The panellists highlighted the importance of satellite technologies for sustainable development, owing to the multiple areas in which they could be applied, such as, for example, precision agriculture and natural disaster management. They also recognized the importance of having highly skilled human resources, both to be able to participate in technology transfer processes and to develop proprietary technology. One public policy challenge was to improve communication about the use of satellite technologies in order to impress their potential and importance on authorities and decision makers at different levels of government. The key role played by international cooperation in the development of those technologies in the region was also highlighted, especially in view of the high cost of the necessary infrastructure. Reference was also made to the Latin American and Caribbean Space Agency (ALCE) as an example of a good experience borne from inter-institutional dialogue, which should be enhanced and strengthened to increase regional collaboration.

Technological development and added value in the lithium chain

66. This panel was moderated by Jeannette Sánchez, Chief of the Natural Resources Division of ECLAC; participating were Pablo Terrazas, Executive Vice-President of the Production Development Corporation (CORFO) of Chile; Roberto Salvarezza, President of YPF Tecnología (Y-TEC) of Argentina; Carlos Ramos Mamani, Executive Chairman of Yacimientos de Litio Bolivianos (YLB) of the Plurinational State of Bolivia, and Adolfo Aramayo of the General Coordination Office of YLB.

67. This panel reviewed the main initiatives being carried out in the region's countries to promote technological development and innovation in the lithium chain, an industry still in its infancy. Based on the Argentine experience, the importance of unbundling the entire technological package to evaluate the possibilities for developing and adding value to lithium was underscored. In the case of the Plurinational State of Bolivia, emphasis was given to the importance of national planning, investment in infrastructure and human resource training. Lastly, in Chile, importance was placed on the creation of technology centres, through linkages between universities, businesses and local governments. Regarding opportunities to intensify regional cooperation, some panellists agreed on the importance of starting to work on the issue of environmental standards for green lithium production.

Buenos Aires Declaration

68. The member States of the Conference adopted the Buenos Aires Declaration, which is contained in annex 1.

Proposed biennial programme of regional cooperation activities for 2022–2023 on science, innovation and information and communications technologies (agenda item 7)

69. The member States of the Conference approved the biennial programme of regional cooperation activities for 2022–2023 on science, innovation and information and communications technologies, as included in the Buenos Aires Declaration, which is contained in annex 1.

Round table: International cooperation and regional integration

70. Taking part in the round table were Álvaro Calderón, Chief of the Innovation and New Technologies Unit of the Division of Production, Productivity and Management of ECLAC; Diego Hurtado, Secretary for Planning and Policies on Science, Technology and Innovation of the Ministry of Science, Technology and Innovation of Argentina; Paola Vega Castillo, Minister of Science, Innovation, Technology and Telecommunications of Costa Rica; Marc Litvine, Senior Expert and Head of Sector, Regional Programmes for Latin America and the Caribbean of the European Commission; Armstrong Alexis, Deputy Secretary-General of the Caribbean Community (CARICOM); and Efraín Guadarrama, Director-General for American Regional Organizations and Mechanisms of the Ministry of Foreign Affairs of Mexico, in his capacity as Chair pro tempore of the Community of Latin American and Caribbean States (CELAC).

71. The Chief of the Innovation and New Technologies Unit of the Division of Production, Productivity and Management of ECLAC said that it was a matter of concern that STI systems were underfinanced in the region and centred on basic and applied research, while experimental areas lagged behind. He stated that it was necessary to renew the strategic role of STI policies, prioritize support for experimental research and promote the development of productive capacities, since the regional space had the scale and capabilities to generate more sophisticated and knowledge-intensive products. Also, spaces for dialogue and technology centres in the countries of the region should be promoted, technology transfer mechanisms strengthened, and patent systems rethought, among other considerations. After introducing the round table participants, he expressed his wish that the discussion would serve to find ways to strengthen cooperation, not only in the region, but also with other countries around the world, especially those that were leaders in those areas.

72. The Secretary for Planning and Policies on Science, Technology and Innovation of the Ministry of Science, Technology and Innovation of Argentina noted that for decades there had been a recognized imbalance in the production of knowledge in the region in favour of basic sciences, as a result of a supply-side orientation that was poorly connected with the socioeconomic reality and a lack of capacity to detect the territorial, productive and strategic needs of a country's plans. This could be overcome, he said, by applying a mission-oriented policy approach, tailored to local socioeconomic realities, with States actively exercising entrepreneurial leadership and becoming technology coordinators. It was also essential to generate incentives to attract private investment in research and development (R&D) activities. He explained that, in Argentina, there were some successful experiences of public-private partnerships, but they were isolated cases, not public policy, and it was important to put both types of investment on an equal footing. Other problems were the lack of patenting in the region and the excess of foreign patents, owing to a dearth of intellectual property protection policies, as well as institutional weakness caused by political and economic instability. All these factors were relevant in promoting STI, as was having governments that

understood the importance of sustaining State policies. He concluded by mentioning the creation of the Latin American and Caribbean Space Agency (ALCE) —a process led by Argentina and Mexico— as a successful example of multilateral collaboration at the regional level in strategic sectors.

73. The Minister of Science, Innovation, Technology and Telecommunications of Costa Rica reflected on how the successful instances of cooperation had come about, not only through the determination of common interests, but also thanks to initial approaches, exchanges of experiences and the first stages of identifying best practices, which had enabled countries to learn from one another, to find out where they complemented each other and what their strengths were. She said that it was important to start teamwork with peer-to-peer approaches, determining which actors would give rise to future collaborations on a day-to-day basis (incubators, accelerators, researchers or companies, among others). Thus, it was not a matter of the interest of a specific group in convincing the authorities, nor that of the authorities in securing the participation of the actors, but of a jointly constructed interest, which resulted in high-impact actions adjusted to the needs of those who carried out the collaborations in practice. That generated trust, materialized in the signing of more specific collaboration agreements and created a sense of ownership of the initiative, which facilitated its continuity over time. She also mentioned the importance of promoting exchanges between ministries as well, and that follow-up should be more regular, so that strategic decisions would be made at big meetings based on ongoing discussion of issues of interest.

74. The Senior Expert and Head of Sector of Regional Programmes for Latin America and the Caribbean of the European Commission stressed that digitization was the key to the development of innovation, science and technology. He explained that the role of the European Union had been fundamental in capacity-building, thanks to the digital single market, which had acted as a catalyst for cooperation opportunities between countries. He also said that it was important to increase biregional multidisciplinary collaborations and broaden spaces for partnership with the private sector in the area of research and development, given that they should go hand in hand with economic objectives. There was also a need to reduce asymmetries in digital skills. It was clear that sharing knowledge and technologies was effective in reducing productivity and innovation gaps, and that there was a need to work together with Latin American and Caribbean countries to attract more investment and build innovative partnerships in R&D. The European Union was committed to that goal and to the vision of developing a modern digital area that would evolve exponentially with each year, but where people would be at the centre of decisions and innovations.

75. The Deputy Secretary-General of CARICOM said that the CARICOM Secretariat was working to prioritize science, technology and innovation, and investing in an ICT-for-development initiative to apply to services provided internally and to member States. Policies supporting mindset changes in CARICOM countries needed time and space to leverage real-time granular data and opportunities to embrace digitization. The Caribbean was home to one of the youngest populations in the world, a fundamental ingredient for promoting science, innovation, and information and communications technologies (ICTs). New technology transfer models and opportunities were needed to flip the existing paradigm of the region's population being seen as consumers rather than producers of technology. He proposed that CARICOM countries host or chair the first subregional meeting in 2022 on tangible innovation for cooperation, which could include developed countries acting as development partners to help the region's countries move forward and enter into cooperation agreements with practical forms of assistance.

76. The Director-General for American Regional Organizations and Mechanisms of the Ministry of Foreign Affairs of Mexico, in his capacity as Chair pro tempore of CELAC, referred to two of the most important projects implemented in the last two years. The first related to vaccines and was based mainly on the plan for self-sufficiency in health matters that ECLAC had presented at the sixth Summit of Heads of

State and Government of CELAC, held in Mexico in 2021. The crisis had shown that the region was highly dependent on imports, although it had world-class innovation centres and scientists that governments had an obligation to support in order to reduce that dependence. The plan for self-sufficiency in health matters sought to strengthen the production and distribution chains of medicines and vaccines in the region in order to be better prepared for any health crisis that might arise in the future. The other important project was the regional space agency, an initiative that had arisen from a virtual meeting held in 2020 among the region's space agencies, where the possibility of having a regional space agency had been evaluated. A declaration to that effect had been signed, negotiations had begun, and the agreement had been signed and was in the process of ratification. The first coordination meeting produced three key outcomes: (i) the establishment of a follow-up group, (ii) partnership with the European Space Agency and the European Commission, and (iii) the presentation of the first cooperation project: the establishment of a geospatial observation centre in Trinidad and Tobago.

77. In the second round of questions, referring to the most significant areas of STI collaboration in the short term both at the regional level and with strategic partners outside the region, the Secretary for Planning and Policies on Science, Technology and Innovation of the Ministry of Science, Technology and Innovation of Argentina highlighted digital transformation as a key area for the region. Argentina's National Plan for Science, Technology and Innovation 2030 considered digital transformation in three areas: (i) human resources, (ii) digital government and (iii) digital transformation of the productive sector. Another major challenge related to the energy transition, where there was great potential for regional collaboration and the plan was to target three areas: (i) renewable energies, (ii) efficient and rational use of energy and (iii) SMEs, cooperatives and community needs. With respect to the lithium triangle—comprising Argentina, Chile and the Plurinational State of Bolivia—it was necessary to think about possible value chains in order to generate a strategic policy for lithium; in terms of hydrogen, the scope for collaboration was very broad and encompassed the entire region. In the health sector, the pandemic had made it necessary to enhance and encourage regional collaboration strategies.

78. When asked by the moderator to reflect on how Costa Rica saw the main areas where international and regional cooperation could be strengthened, the Minister of Science, Innovation, Technology and Telecommunications of Costa Rica said that cooperation was most needed in the area of digitization and that, as a region, it was interesting to think of ways to strengthen digital literacy. It was necessary for the region to showcase itself as one with a series of competitive advantages that could facilitate joint work at the commercial and business level. To that end, some kind of standard had to be adopted to ascertain the maturity of digital literacy among the region's inhabitants. She also mentioned the need to work on the digital transformation of SMEs, as well as on cybersecurity and interoperability.

79. With respect to the possibilities of strengthening the strategic relationship between Latin America and the Caribbean and Europe, the Senior Expert and Head of Sector of Regional Programmes for Latin America and the Caribbean of the European Commission said that there was a great deal of scope in the region and referred to the issue of digitization. He spoke about the competitiveness of SMEs in Europe and Latin America and the Caribbean and said that there was still a lot of room for innovation in the Latin American and Caribbean region. In particular, it was important to take into account the issue of the informal sector and how SMEs could access innovation, which was not only about developing research capacity, but also sharing knowledge with others. The objective of the Global Gateway was to share knowledge between both sides of the Atlantic.

80. The last reflections were offered by the Secretary for Planning and Policies on Science, Technology and Innovation of the Ministry of Science, Technology and Innovation of Argentina, who noted that it was difficult to think that the pandemic presented windows of opportunity when it was, above all, a tragedy on

a global scale. It was imperative to think of positive lessons at the regional level, such as the collaboration between Argentina and Mexico to produce the AstraZeneca vaccine. The pandemic had caught the region by surprise, with serious weaknesses in terms of collaboration, production and scientific and technological capacities, which it was essential to overcome definitively, and CELAC and MERCOSUR were the appropriate forums to develop those collaboration capacities.

Closing session

81. There being no further matters to consider, the meeting was brought to a close.

Annex 1

BUENOS AIRES DECLARATION

The member States of the Economic Commission for Latin America and the Caribbean participating in the third meeting of the Conference on Science, Innovation and Information and Communications Technologies, meeting virtually, from 13 to 15 December 2021,

Considering that, in resolution 672(XXXIV), adopted at its thirty-fourth session, the Economic Commission for Latin America and the Caribbean approved the establishment of the Conference on Science, Innovation and Information and Communications Technologies as a subsidiary body of the Commission,

Bearing in mind that, in accordance with the same resolution, the Conference on Science, Innovation and Information and Communications Technologies must elect an Executive Committee consisting of a chair and six members, and that one of the functions of the Executive Committee is to prepare a biennial programme of regional and international cooperation activities in support of policies on science, innovation and information and communications technologies to be submitted to the member countries of the Conference for adoption,

Bearing in mind also that the Economic Commission for Latin America and the Caribbean, as technical secretariat of the Conference, is responsible for making available to the Conference the facilities and documents that have been approved by the Committee,

Recalling that, at its meeting held on 2 July 2020, the Executive Committee adopted the proposal entitled “Propuesta de cooperación regional en ciencia, innovación y TIC: respuesta a la crisis de la pandemia del COVID-19 desde la ciencia, la tecnología y la innovación”, resulting from the discussion at the briefing of ministers and high-level authorities of ministries and governing bodies of science, technology and innovation on 7 May 2020, where it was agreed that the plan of action for 2020 would focus on the following specific areas of work: (i) coordinating research and development efforts in the countries of the region; (ii) narrowing gaps in access to and use of critical platforms for social inclusion and (iii) strengthening the health industry at the national and regional levels,

Reaffirming the importance for the development of the economy and society of science, innovation and new technologies, which have become fundamental tools for the transformation of productive structures, the rational use of natural resources, health care, food, education and other social needs,

Reaffirming also that it is crucial to strengthen the institutional framework for science, technology and innovation, not only by providing the necessary financial resources, but also by creating capacities for the design, implementation, administration, monitoring and evaluation of policies, along with better linkages with countries’ development strategies, taking into account, in particular, their contribution to national strategic challenges,

Recognizing the need to create the necessary conditions for a transformative recovery, which requires the alignment of changes in productive structures with the strengthening of capacities in the field of science, technology and innovation,

Concerned that, although in several countries of the region progress has been made in building a more robust institutional framework for science, technology and innovation with the creation of specific ministries or the strengthening of specialized institutions in this area, science, technology and innovation

still do not have an active role in economic, productive and social development policies, and this is reflected in limited technical change and low productivity,

Expressing appreciation for the leadership exercised by the Government of Costa Rica during its chairship of the Conference and its role in the follow-up of the biennial programme of regional and international cooperation activities for 2017–2018 on science, innovation and information and communications technologies and the plan of action for 2020,

Expressing appreciation also to the Government of Argentina for its outstanding work in hosting the third meeting of the Conference,

Agree to:

1. *Adopt* the biennial programme of regional and international cooperation activities for 2022–2023 on science, innovation and information and communications technologies, annexed to the present Declaration;

2. *Organize*, through the technical secretariat of the Conference and in conjunction with the Chair of the Conference, at least one meeting of the Executive Committee per year, the main objective of which will be to follow up on the activities agreed in the biennial programme of activities, and to define other activities or initiatives that support the implementation of the programme and the achievement of the strategic objectives;

3. *Hold* meetings of the Conference every two years, with the fourth meeting of the Conference to be held in the second half of 2023 at a date and place to be determined;

4. *Identify and strengthen*, through the technical secretariat of the Conference, spaces for international cooperation with countries and organizations, with the aim of generating and strengthening synergies to facilitate dialogue and experience-sharing to support research and development, innovation and the strengthening of productive capacities, among others.

**BIENNIAL PROGRAMME OF REGIONAL AND INTERNATIONAL COOPERATION
ACTIVITIES FOR 2022–2023 ON SCIENCE, INNOVATION AND INFORMATION
AND COMMUNICATIONS TECHNOLOGIES**

1. In light of the current complex situation, the biennial programme of regional and international cooperation activities for 2022–2023 on science, innovation and information and communications technologies proposes a joint effort to improve the positioning of science, technology and innovation policies with a view to fostering dynamic sectors that lay the foundations for more sustainable and inclusive development in the countries of the region.
2. To this end, the biennial programme of activities of the Conference is based on three strategic objectives:
 - (i) Strengthen public institutions to support the development of science, technology and innovation.
 - (ii) Improve the linkage of science, technology and innovation policies with the region's strategic challenges.
 - (iii) Foster regional and international cooperation in science, technology and innovation.
3. In order to advance in the achievement of the strategic objectives outlined, a series of activities are proposed, including:
 - (i) Conduct training programmes in science, technology and innovation policies, including the design of a training programme tailored to the specific needs of institutions and entities in charge of science, technology and innovation policies, with the goal of conducting two training workshops, preferably one in each year of the biennial programme.
 - (ii) Examine national and international experiences and practices that identify critical factors of innovation systems for the design of science, technology and innovation instruments and policies in the countries of the region to ensure the desired scope.
 - (iii) Encourage the monitoring of policies and instruments through the development of a repository of science, technology and innovation policies and instruments and the compilation of statistics (based on innovation surveys and other official sources), taking into account that access to this background information will facilitate the exchange of information and support the design and monitoring of science, technology and innovation policies.
 - (iv) Strengthen the link between the development of science, technology and innovation and productive development, with emphasis on strategic sectors for the development of the region, including sectors linked to self-sufficiency in health care, digital technologies, the energy transition and sustainable production.
 - (v) Facilitate and promote spaces for dialogue between government authorities, universities, specialized research centres and the productive sector in order to identify concrete actions that support the development of science, technology and innovation, along with knowledge-sharing in strategic areas and disciplines to enhance the development of human capital in the region and its applicability in the productive sphere.

- (vi) Create new areas for the sharing of experiences that foster science, technology and innovation for more sustainable mobility in a region where more than 80% of the population lives in urban areas. The aim of this line of action is to evaluate the contributions of science, technology and innovation policies to the deployment of renewed urban public transport systems, based on energy efficiency, the reduction of environmental pollution and the improvement of citizens' quality of life.
- (vii) Mainstream the gender perspective in policies and initiatives linked to the development of science, technology and innovation. This line of action will be linked to those mentioned above and will respond to the interest expressed by countries in the need to incorporate the gender dimension into the design and administration of science, technology and innovation policies.

4. The biennial programme of regional and international cooperation activities for 2022–2023 on science, innovation and information and communications technologies focus heavily on the exchange of information and good practices as a mechanism for the achievement of the strategic objectives. The implementation of the plan will include political and technical meetings, substantive studies and technical assistance activities.

Annex 2

LIST OF PARTICIPANTS¹**A. Estados miembros de la Comisión
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- Rossana Surballe, Subsecretaría del MERCOSUR y Negociaciones Económicas Internacionales, Ministerio de Relaciones Exteriores, Comercio Internacional y Culto
- Diego Hurtado, Secretario de Planeamiento y Políticas en Ciencia, Tecnología e Innovación, Ministerio de Ciencia, Tecnología e Innovación
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¹ Los datos de esta lista son los suministrados por los participantes en el registro correspondiente que se habilitó para la reunión. The information contained in this list is as supplied by the participants themselves, in the register provided for the meeting.

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- Siobhan Flax, Deputy Director, BVI London Office
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Miembro de la delegación/Delegation member:

- Mayvis Gibus, Chargé de Mission Affaires Extérieures, Cabinet du Président du Conseil Exécutif, email: mayvis.gibus@collectivitedemartinique.mq

PUERTO RICORepresentante/Representative:

- Lelis Y. Flores Silva, Secretaria Auxiliar de Estado para Asuntos Internacionales, Especialista en Asuntos Internacionales, email: lflores@estado.pr.gov

**C. Secretaría de las Naciones Unidas
United Nations Secretariat**

Coordinadores Residentes/Resident Coordinators

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- Mauricio Ramírez Villegas, Coordinador Residente, República Dominicana, email: mauricio.ramirez@un.org

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- Oswald Alleyne, Barbados
- Jose Castellanos, Economist, Belice
- Steve Flores Data Manager, Belice

**D. Sistema de las Naciones Unidas
United Nations system**

Fondo de Población de las Naciones Unidas (UNFPA)/United Nations Population Fund (UNFPA)

- Álvaro Serrano, Asesor Regional en Comunicación, email: serrano@unfpa.org
- Mary Carmen Villasmil, Asesora Regional a.i. de Población y Desarrollo, email: villasmil@unfpa.org
- Mathías Nathan, Programme Specialist, email: nathan@unfpa.org

**Organización de las Naciones Unidas para la Alimentación y la Agricultura (FAO)/
Food and Agriculture Organization of the United Nations (FAO)**

- Julio Berdegué, Subdirector General, Representante Regional para América Latina y el Caribe

**Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (UNESCO)/
United Nations Educational, Scientific and Cultural Organization (UNESCO)**

- Lidia Brito, Directora, Oficina Regional de Ciencia para América Latina y el Caribe, email: l.brito@unesco.org
- Claudia Uribe, Directora, Chile, email: c.uribe@unesco.org
- Ramón Iriarte, Especialista del Programa de Educación, Chile, email: r.iriarte@unesco.org

**Organización de las Naciones Unidas para el Desarrollo Industrial (ONUDI)/
United Nations Industrial Development Organization (UNIDO)**

- Cristiano Massimo Pasini, Representante y Director para México y Centroamérica, email: c.pasini@unido.org

Organización Internacional del Trabajo (OIT)/International Labour Organization (ILO)

- Claudio Maggi, Asesor Regional, Dirección Regional de América Latina y el Caribe (DRALC), email: maggi@iloguest.org

**E. Organizaciones intergubernamentales
Intergovernmental organizations**

Comunidad del Caribe (CARICOM)/ Caribbean Community (CARICOM)

- Armstrong Alexis, Deputy Secretary-General

Comisión Europea/European Commission

- Olivier Bringer, Jefe, Unidad de Difusión de Políticas y Asuntos Internacionales, Dirección General de Redes de Comunicación, Contenido y Tecnologías

F. Panelistas Panellists

- Alicia Bárcena, Secretaria Ejecutiva de la Comisión Económica para América Latina y el Caribe (CEPAL)
- Daniel Filmus, Ministro de Ciencia, Tecnología e Innovación de la Argentina
- Paola Vega Castillo, Ministra de Ciencia, Innovación, Tecnología y Telecomunicaciones de Costa Rica
- Santiago Cafiero, Ministro de Relaciones Exteriores, Comercio Internacional y Culto de la Argentina (por video)
- Mario Cimoli, Secretario Ejecutivo Adjunto de la CEPAL
- Lidia Brito, Directora, Oficina Regional de Ciencia para América Latina de la Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (UNESCO), email: l.brito@unesco.org
- Federico Torres, Viceministro de Ciencia y Tecnología de Costa Rica
- Delia Aideé Orozco Hernández, Directora Adjunta de Desarrollo Tecnológico, Vinculación e Innovación del Consejo Nacional de Ciencia y Tecnología (CONACYT), email: aidee.orozco@conacyt.mx
- Phillip Jackson, Coordinador de Ciencia y Tecnología del Ministerio de Educación y Reconciliación Nacional de San Vicente y las Granadinas
- María Elena Álvarez-Buylla, Directora General del Consejo Nacional de Ciencia y Tecnología (CONACYT) de México
- Genaro Rodríguez, Viceministro de Ciencia y Tecnología de la República Dominicana
- Hebe Vessuri, Investigadora Principal del Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) del Instituto Patagónico de Ciencias Sociales y Humanas (IPCSH) de la Argentina
- Luciano D’Ascenzo, Coordinador de Redes y Secretario Técnico de la Comisión Asesora del programa RAÍCES del Ministerio de Ciencia, Tecnología e Innovación de la Argentina
- Talía Verónica García Aguiar, Coordinadora de Apoyos a Becarios e Investigadores del Consejo Nacional de Ciencia y Tecnología (CONACYT) de México
- Indianna D. Minto-Coy, Directora Académica de Programas de Máster e Investigadora Principal de la Escuela de Negocios y Administración de la Universidad de las Indias Occidentales en Mona (Jamaica), email: indianna.mintocoy@uwimona.edu.jm; indianna.mintocoy@gmail.com
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- Rolando González-José, Coordinador del Programa PoblAr de la Argentina
- Sandra Romero Hidalgo, Investigadora en Ciencias Médicas del Instituto Nacional de Medicina Genómica de México
- Iscia Lopes Cendes, Jefa del Departamento de Genética Médica de la Facultad de Ciencias Médicas de la Universidad de Campinas (UNICAMP) del Brasil
- Andrea Llera, Investigadora del Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) de la Argentina
- José Edgardo Dipierri, Profesor Titular del Instituto de Biología de la Altura de la Universidad Nacional de Jujuy de la Argentina
- Mariana Berenstein, representante de la Fundación Innova-T de la Argentina
- Gustavo Sibilla, Coordinador del Proyecto GENis de la Fundación Sadosky de la Argentina
- Hernán Dopazo, Investigador del CONICET de la Argentina
- Ricardo Palacios, Experto Internacional en Investigación Clínica y Farmacéutica, email: ricardopalacios@gmx.net

- Ennio Vivaldi Véjar, Rector de la Universidad de Chile, email: rectoria@uchile.cl
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- Clara Ocampo, Directora de Generación de Conocimiento del Ministerio de Ciencia, Tecnología e Innovación de Colombia, email: cbocampo@minciencias.gov.co
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- Raúl Echeberría, Director Ejecutivo de la Asociación Latinoamericana de Internet (ALAI), email: raul@alai.lat
- Martin Hilbert, Profesor Titular de la Universidad de California en Davis (UC Davis) (Estados Unidos)
- Guido Girardi Lavín, Senador de la República y Presidente de la Comisión de Desafíos del Futuro, Ciencia, Tecnología e Innovación del Senado de Chile, email: ggirardi@senado.cl
- Félix Chang, Viceministro de Tecnologías de la Información y Comunicación del Ecuador
- Yuri Castro, Directora de Tecnologías de la Información de la Secretaría Nacional de Ciencia y Tecnología de Guatemala, email: ycastro@senacyt.bob.gt
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- Rodney Taylor, Secretario General de la Unión de Telecomunicaciones del Caribe
- Olivier Bringer, Jefe de la Unidad de Difusión de Políticas y Asuntos Internacionales de la Dirección General de Redes de Comunicación, Contenido y Tecnologías de la Comisión Europea
- Benjamín Germany Morrison, Gerente del Centro para la Industria 4.0 de Chile, email: benjamin.g.m@gmail.com
- Juan Heguiabehere, Director del Programa Seguridad en TIC de la Fundación Sadosky de la Argentina
- Marcelo Marzocchini, Director Operativo del Instituto Nacional de Tecnología Industrial (INTI) de la Argentina, email: marzocchini@inti.gob.ar
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- Guillermo Timote, representante del Centro de Automatización Industrial y Mecatrónica (CAIME) del Uruguay, email: gtimote@gmail.com
- Mónica Zalaquett Said, Ministra de la Mujer y la Equidad de Género de Chile, en su calidad de Presidenta de la Conferencia Regional sobre la Mujer de América Latina y el Caribe
- Marcela Guerrero, Ministra de la Condición de la Mujer y Presidenta Ejecutiva del Instituto Nacional de la Mujeres (INAMU) de Costa Rica

- Diana Broggi, Subsecretaria de Formación, Investigación y Políticas Culturales para la Igualdad del Ministerio de las Mujeres, Géneros y Diversidad de la Argentina
- Ana María Franchi, Presidenta del Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) de la Argentina
- Kim Mallalieu, Profesora Adjunta de la Universidad de las Indias Occidentales en San Agustín (Trinidad y Tabago)
- Vera Álvarez, Investigadora Principal del CONICET de la Argentina
- Priscila Chaverri Echandi, Profesora Investigadora de la Escuela de Biología de la Universidad de Costa Rica
- Francisca Varela, Directora de la fundación Kodea
- Sandra Torrusio, Gerente de Vinculación Tecnológica de la Comisión Nacional de Actividades Espaciales (CONAE) de la Argentina
- Gustavo Henríquez Camacho, Jefe de la Oficina de Cooperación y Relaciones Internacionales de la Comisión Nacional de Investigación y Desarrollo Aeroespacial del Perú
- Rosa María Ramírez de Arellano, Coordinadora General de Asuntos Internacionales y Seguridad en Materia Espacial de la Agencia Espacial Mexicana
- Alejandro Román Molinas, Director General de Ejecución y Desarrollo Aeroespacial de la Agencia Espacial del Paraguay
- Carlos Giovanni Corredor, Asesor del Despacho de la Vicepresidencia de la República de Colombia y de la Comisión Colombiana del Espacio
- Fernando Hisas, Asesor de la Dirección Ejecutiva y Técnica de la Comisión Nacional de Actividades Espaciales (CONAE) de la Argentina
- Pablo Terrazas, Vicepresidente Ejecutivo de la Corporación de Fomento de la Producción (CORFO) de Chile
- Roberto Salvarezza, Presidente de YPF Tecnología (Y-TEC) de la Argentina
- Carlos Ramos Mamani, Presidente Ejecutivo de Yacimientos de Litio Bolivianos (YLB) del Estado Plurinacional de Bolivia
- René Kemp, Profesor de Innovación y Desarrollo Sostenible de la Universidad de Maastricht (Países Bajos), email: r.kemp@maastrichtuniversity.nl
- Diego Hurtado, Secretario de Planeamiento y Políticas en Ciencia, Tecnología e Innovación del Ministerio de Ciencia, Tecnología e Innovación de la Argentina
- Geoffrey Wever, Ministro de Asuntos Económicos, Comunicación y Desarrollo Sostenible de Aruba
- Armando Rodríguez Batista, Viceministro de Ciencia, Tecnología y Medio Ambiente de Cuba
- Pedro Bernal Pérez, Director de la Dirección de Políticas y Programas del Consejo Nacional de Ciencia, Tecnología e Innovación Tecnológica (CONCYTEC) del Perú
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- Claudio Maggi, Asesor Regional de la Organización Internacional del Trabajo (OIT)
- Mónica Luz, Experta Internacional en Ecoinnovación y Sustentabilidad
- Marc Litvine, Experto Superior y Jefe de Sector de Programas regionales para América Latina y el Caribe en la Comisión Europea
- Armstrong Alexis, Secretario General Adjunto de la Comunidad del Caribe (CARICOM)
- Efraín Guadarrama, Director General de Organismos y Mecanismos Regionales Americanos de la Secretaría de Relaciones Exteriores de México, en el ejercicio de la Presidencia *pro tempore* de la Comunidad de Estados Latinoamericanos y Caribeños (CELAC)

**G. Secretaría
Secretariat**

Comisión Económica para América Latina y el Caribe (CEPAL)/Economic Commission for Latin America and the Caribbean (ECLAC)

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