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Research and scientific diplomacy as mechanism to develop world solidarity

Nowadays when the world balance is very fragile it seems that universities should try to overcome this contradiction. The universities could play the role of international integrators. The university cooperation is more fruitful and relevant than university competition. The research and scientific diplomacy is one of the most important mechanism to develop world solidarity. When we say research and science diplomacy, we talk about the use of scientific collaborations among nations to address common problems and to build constructive international partnerships. There are different types of how to understand this notion.

- **"Science in diplomacy"** is about science providing advice to inform and support foreign policy objectives.
- **"Diplomacy for science"** is about diplomacy facilitating international scientific cooperation.
- And "**Science for diplomacy"** is about scientific cooperation that improves international relations

Science as a tool for diplomacy has been used for several decades and by many countries around the world – and is here to stay. Some of the **benefits of research and science diplomacy** are listed here as follows:

- **Endeavours to address global challenges.** Science and technology are global enterprises. Together with other tools in diplomacy, science diplomacy can facilitate the identification of common global challenges. Coordinated scientific efforts can help to address these global challenges. The relationship between global challenges and scientific practices goes both ways. Efforts to achieve the "Sustainable Development Goals" are an example of how global challenge-related policy-making and scientific research must be in constant dialogue.
- **More productive and sustainable international relations** at multilateral and bilateral levels owing their interaction with science and technology. The precondition for this is that scientific activities are considered but not appropriated by broader political rationales.
- **Evidence-informed foreign policy** supported by science and technology, aiming at substantive and resilient international agreements, treaties and policies.

- **Better conditions for scientific activities due to the contribution of** foreign policy agendas. Diplomacy, with the support of the scientific community, has a particular role to play in the implementation of larger scientific initiatives and projects (e.g. research infrastructures, joint programmes, etc.).
- **Improved interfaces between science and public policies**. Science diplomacy can contribute to eliminating cultural, sectoral, and knowledge barriers between different actors such as policy-makers, researchers, diplomatic bodies and civil society.

Let's look at the history of the science and research diplomacy. In 1931, the International Council of Scientific Unions, now International Council of Science (ICSU) with focus on climate change, sustainable development, polar research, universality of science, was created as a result of negotiations among scientists around the world.

One of the most acclaimed examples of research and science diplomacy certainly happened during the Cold War in the 1950-70s when the negotiations on the creation of an International Space Station (launched in 1998) began. History has shown that when the official diplomatic channels of communication were „closed", the scientific diplomacy was the only way available that was keeping people from politically opposed countries together. This type of international cooperation was and still is a tool to avoid entering into destructive and useless wars.

In 1950–1970s, the State investments of the Soviet Union in science increased 10 times; in the scientific institutions of the USSR a quarter of the world's researchers worked. Large infrastructure facilities were built, the launch of the first artificial satellite of the Earth happened, that became a challenge to the US engineering thought.

In the last fifteen years, the Government of Russia has pursued a consistent policy aimed at supporting science once again. In particular, from 2002 to 2012 the federal budget expenditures on civil science increased more than ten times (from 31.05 billion rubles in 2002 to 355.92 billion rubles in 2012). At the same time, the internal costs of research and development increased from 135.0 billion rubles in 2002 to 699.9 billion rubles in 2012 and 943.8 billion rubles in 2016 (in actual prices, fluctuating from 1.0 to 1.3% of GDP).

In 1954, we withnessed to the creation of the European Organization for Nuclear Research (CERN), an effort that led to substantial improvement of our lives today: just think of the World Wide Web (WWW) that was created by two CERN scientists.

Other examples are also important for the respective regions:

- 1957 – Pugwash Conferences (Manifesto by Russell & Einstein)
- 1967 – African Scientific Institute
- 1970 – Shanghai Communiques (Sino-American relations)
- 1996 – Artic Council

- 2009 – 10 years ago, US Predisent Obama called for greater focus on innovation building & connecting scientists from the US to Muslim countries, which is something that today -with the current administration - might be at stake.
- 2014 – 2020 – Science Diplomacy of the European Union is built on Horizon 2020, which is an impressive research innovation programme worth €80 billion over 2014-2020.

Other examples are seen in the EU Science Diplomacy as a Bridge between EU and Non- EU States: A Case study of Serbia – Belarus, BRICS, the Eurasian Unions among Universities, Science and Technology Co-operation between India and Bangladesh, the Case of the Algerian Space Programme and various other South-South Cooperation programs.

Let's see more practical examples of some of the most acclaimed results in research and science worldwide:

Middle East	Synchrotron-light for Experimental Science and Application in the Middle East (SESAME) Partnerships between Israel, Iran, Palestine, Egypt, Jordan, Pakistan, Turkey and Cyprus
Cold War	Research and Diplomacy 350 Kilometers above the Earth: International Space Station (ISS)
Post WWII	European Council for Nuclear Research (CERN)
Other initiatives	International Cancer Genome Consortium (ICGC) International Brain Laboratory Abdus Salam International Centre for Theoretical Physics (ICTP)

Voltaire's Candid or Optimism taught us well for centuries: "Everything's for the better" and I will add: "Everything's for the better if you work for it". Colleagues, said this, I firmly believe that we need a common platform for our ideas to take place, an independent fora where we can implement our many forces all together.

At the last edition of the conference we left each other by saying that the world faces a „human capital gap". We ackowledged that the frontier for the right set of skills is moving faster than ever before and that many countries are unprepared for the future. The workforce of today – and not anymore tomorrow - needs to be equipped with a wide cultural baggage of knowledge to be able to face challenges and opportunities driven by this technological era. In our capacity of holders of wisdom, universities have a critical role to play in fighting inequality and transforming human capital, youth's health and education. It is going to be a matter of creating flexible and creative teaching formats being able to inspire students and the overall local community.

Last year we also spoke about the need of a new tool to find the right balance between knowledge, culture and action. As universities, we understand that we need to work with a variety of stakeholders to offer a platform being able to gather and understand the best way forward to (1) achieve collaborative partnerships, community work, transdisciplinary work, research and scientific communication, and (2) foster evidence-based approaches, along with intergenerational and intercultural dialogues. Such an approach supports our academic institutions, professors and docents in using new forms of teaching, recognizing potentials in youth, opening educational resources to those who need it most and - ultimately - adding value to the local communities.

In conclusion, it is my pleasure to inform you that our University, the St. Petersburg State University of Economics, signed an MoU (Memorandum of Understanding and Scientific Cooperation) with SIRIUS GLOBAL – Academic Diplomacy 4.0, leading international non-profit organization headquartered in Rome (Italy) operating in the sector of education, culture, science and innovation. This international organization works to accelerate the implementation of the Agenda 2030 and the Sustainable Development Goals by focusing on quality education, sustainability management and innovations.

SIRIUS launched an independent apolitical global project comprised of three core pillars: (1) a Network of Leading Universities and Research Centres, (2) the International Research Hub and (3) The Gazette – a Digital Platform 4.0. The Network encourages and supports the very best researchers and innovators that will benefit the society on a local, territorial, regional, national and global scale: it looks up for leaders "who can do, solve and create" better, together.

Some of the main sectors of interest are Law & Jurisprudence, Economics, Finance, Business & Management, Innovations (Natural Sciences included) & Bio and Digital Economy, Social Affairs, Humanitarian, Development & Peace Nexus, ICT, Data Privacy, Cyber Security & Web Intelligence, as well as Industry 4.0 & Disruptive Technologies.

Among some of the most important final aims is to:

- Globalize research and education to be able to react to current social demands, by focusing on the implementation of the Agenda2030, finding a

response to crises and strengthening the humanitarian, development and peace nexus;

- Improve the evidence-based research on the impact of national laws, economic models, new technologies and science-related interventions and matters, thus creating actionable insights for decision makers in the public and private sectors as well as civil organisations;
- Push forward the knowledge frontier on the core drivers and challenges for innovation, industry 4.0, high-growth entrepreneurship and businesses, thus unlocking the capacity of individuals to reach their full potential and quality of life.

We invite you to do the same: join the Network of Leading Universities and Research Centres to create new master programs, Summer and Winter schools, trainings for our professionals and various courses through this international platform. SIRIUS GLOBAL can be the right place for us to meet and work together on sustainability projects and not only. Being an administrative base operating among many countries, it understands the legal specificities of each of our countries and navigates among the different academic systems by overcoming any eventual language barrier.

A core aspect to sustainable development lays in the acknowledgement and deep understanding that universities are creating the leaders of tomorrow. These will be individuals who will later assume key responsabilities in existing systems and set an example for our societies. If we try to form leaders in the scence of cooperation and international solidarity it will be the most great investment in peaceful and sustainable furutre.