

## [How to make science diplomacy work](#)

International stakeholders give their views on what the EU should do to foster international cooperation in research and innovation in Horizon Europe

<https://sciencebusiness.net/framework-programmes/news/how-make-science-diplomacy-work>

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## Signe Ratso, Deputy Director General, DG Research and Innovation, European Commission

- **International cooperation is increasingly important for European research institutes, universities and companies.**
  - First, they need access to the world's best talents, expertise and resources. Today, 80% of world expenditure on R&D, 73% of scientific publications, and 70% of patent applications are outside the EU.
  - Second, they need to take part in shaping R&I policy agendas and actions for tackling global societal challenges such as climate change, infectious diseases, clean energy, and food security. Today, the scope and interconnectivity of these challenges are much larger than a decade ago and many more global multilateral initiatives have emerged.
  - Third, they need to enter global value chains and foreign markets, also for scaling-up. 90% of global economic growth in next decade expected to take place outside Europe, international co-invention of patents has increased significantly, and most countries have experienced significant increases in the share of foreign added value in exports and final consumption.
  - Finally, their cooperation with international partners can be used as an instrument of soft power in support of our external policies such as in trade and development policy relations.
- **But, engaging with international partners is not happening naturally.**
  - There are many competing priorities; international cooperation is generally more costly and its management more involved; many challenges are global, yet policies and regulations are mostly national or regional; and national or regional policies are often preventing a global level playing field
- **That is why we have in place a strategy for EU international cooperation in R&I and an 'Open to the World' policy priority.**
  - The objectives of the strategy are: to strengthen the EU's R&I excellence and attractiveness and its economic and industrial competitiveness; to tackle global societal challenges more efficiently and effectively; and to support the EU's external policies: trade, development, foreign and security.
- **The strategy is reflected as a cross-cutting priority in Horizon 2020; however, results have been mixed.**
  - For programme-to-programme cooperation, Horizon 2020 is providing substantial contributions to the initiative on poverty-related infectious diseases in sub-Saharan Africa, European and Developing Countries Clinical Trials Partnership, EDCTP2 (683 m€ from H2020) and to the initiative on food and water challenges in the Mediterranean countries, PRIMA (220 m€ from H2020), as well as 150-200 m€ per year to a number of Global Multilateral Initiatives in the areas of health, food, energy and the environment.
  - For individual researcher-to-researcher cooperation and mobility, Marie Skłodowska-Curie Actions remain very internationally oriented, and Implementing Arrangements with 11 third countries have resulted in hundreds of third country researchers joining ERC Principal Investigator teams in Europe.
  - In organisation-to-organisation cooperation, however, we have seen a fall (from 4.3% to 2.5%) in direct third country participation in grant agreements. The reasons for this are many: little use of international cooperation specific structures or instruments; BRIC+M countries (Brazil, Russia, India, China, Mexico) no longer automatically eligible for funding; the programme's relative increased focus on closer-to-market activities; and socio-political developments in the EU neighbourhood.
  - We have already reacted on this and launched more than 30 international cooperation Flagship initiatives under the 2018-20 Work Programme, with a total EU funding of more than €1 billion.

Examples include initiatives with Japan and Korea on 5G communication networks, cloud and Internet of Things; with China on Food, Agriculture and Biotechnology; with Canada on human data storage; and with Africa on food security.

- **Our plan for the future**
  - Our impact assessment for FP9 shows the need to further strengthen international cooperation in the Programme.
  
- **Horizon Europe will intensify its openness to the world, while safeguarding Union interest.**
  - Horizon Europe will continue the general opening for international participation and targeted international cooperation actions.
  - The future programme will pave the way for setting up large-scale international cooperation flagship initiatives of mutual benefit, joint calls and partnerships with international partners. These will be identified based on thematic and geographical strategic intelligence, S&T capabilities, market opportunities, and contribution to international commitments.
  - During the strategic programming phase where we shall define these international cooperation actions. We shall be strategic in how we engage with international partners in order to solve the priority challenges defined by the programme.
  - Such initiatives and actions should be complementary and mutually reinforcing with other Union programmes. For example, we should ensure that targeted international cooperation actions of Horizon Europe seek alignment and coherence with parallel market uptake and capacity-building actions strands under the External Instrument, based on joint definition of needs and intervention areas during the strategic planning process.
  - At the same time, Horizon Europe should make explicit a number of safeguards to ensure EU interests e.g. via provisions that allow excluding third countries from specific actions of the programme (for actions related to Union strategic assets, interests, autonomy or security); provisions that require that at least one EU Member State as part of a consortium; and provisions requiring best effort to exploit in particular in the EU (unless there is a clear explanation that exploitation outside the EU is still in the Union interest).
  - Regarding the future association policy, the programme will extend openness to association of third countries with good capacity in STI, a rules-based open market economy, democracy and socio-economic well-being, taking into account the objective of driving economic growth in the Union through innovation.

**In conclusion**, openness to the world remains a strategic priority for EU R&I policy as it reinforces R&I excellence, strengthens competitiveness, and helps solve global societal challenges in support of EU external action. The future Framework Programme, Horizon Europe, should intensify its openness to the world while safeguarding Union interest.

## Michael Makanga, CEO, European and Developing Countries Clinical Trials Partnership

### I. How to make international collaboration work better with Horizon Europe than it has with Horizon 2020

#### 1. International collaboration in Horizon 2020 and EDCTP

International collaboration is one of the cross-cutting priorities within H2020, with three main target regions as outlined in the EC strategy on enhancing and focusing EU international cooperation in research and innovation. EDCTP has elements of all three and uniquely covers collaboration with developing countries, with focus on sub-Saharan African countries (SSA), poverty related diseases (PRDS) and supporting development policy by building partnerships contributing to sustainable development.

- a) Enlargement and neighbourhood countries, and EFTA:
  - Focus on alignment with the ERA
  - Support enlargement and neighbourhood policies (support to developing a common 'Knowledge and Innovation Space')
- b) Industrialised countries and emerging economies:
  - Focus on competitiveness
  - Tackle global challenges
  - Business opportunities and access to new markets
- c) Developing countries:
  - Support development policy by building partnerships contributing to sustainable development
  - Address relevant challenges (e.g. poverty-related diseases, energy and food security, biodiversity)

#### There are various funding instruments to support international collaboration under H2020:

- a) Collaborative projects (third country participation required and/or taken into account in evaluation)
- b) Networking between existing projects
- c) Joint initiatives of Union and third countries: coordinated calls, contribution of Union to third country/international organisations, ERANet/Art185.

Established under FP6, EDCTP is the first ever Article 185 initiative of the Treaty of the Functioning of the European Union (ex-Article 169) initiative relating to the participation of the EU in the joint implementation of research between European member states and sub-Sahara African countries (EU funding is combined with national funds and, in some cases, co-funding by third parties (other funding agencies such as Foundations, product development partnerships (PDPs) and pharmaceutical companies).

#### 2. Value added of EDCTP as a joint EU-PSs initiative under Art. 185

Greater scope and scale through pooling resources, increased political support, streamlined health agenda, greater outreach of the lessons learned in comparison to EU or PSs initiatives alone:

- EDCTP can carry out more projects, and can involve more researchers with different backgrounds (in terms of organisations and country of origin) capitalizing on the complementary expertise of the different partners which influences the quality and relevance of research.

- Researchers have the opportunity to work with each other, build networks, and be exposed to a richer portfolio of experiences, thus EDCTP might be more effective in developing and sustaining capacity in Africa.
- By involving a much higher number of organisations both in Europe and SSA, EDCTP can stimulate political will and address health priorities in a more comprehensive way.

### 3. What can be done to make the EU-Africa research collaboration more successful in the next framework programme?

- Continue with successful instruments that support **funding for collaborative research**
- Establish mechanisms for ensuring that **African governments make financial contributions to EU Africa research** (e.g. African Health Strategy is calling on African countries to allocate 1% of their GDP to R&D and there are some countries that are already making excellent towards reaching the targets e.g. Kenya, Tanzania and South Africa).
- **Private sector participation** is key to successful translation of research findings into marketable products and for generating follow-up investments
- **Linking with policy makers**- the translation of research into products or policies can be enhanced through better communication and visibility of the EU Africa collaborative research. In many cases African policymakers are not fully aware of the EU-funded health research conducted in their countries.
- **Coordination with other DGs**- Institutional strengthening needs in SSA countries are still major if they are to participate equally in science. This present opportunity for closer collaboration between DG RTD and DEVCO in the next framework programme, including with EU Delegations. Such collaboration will strengthen the link between R&D and access of medicinal products to the target populations.
- EU should take a leadership role in global health R&D while working closely with governments outside the EU to leverage efforts and achieve higher impact (e.g. importance of working with developing countries and with the G20 as some of these governments have the highest burden of disease (China, India, Brazil, Russia, South Africa, etc.) but also given the G20 emphasis and commitments on innovation.
- Importance of building on the EU recognized strengths and leadership (and long history of EU research policy) and build on accomplishments of existing collaborations (i.e. EDCTP) as well as promote the establishment of new international initiatives.
- Importance of promoting exchanges that foster innovation (e.g., ensure access to European research infrastructures for developing country scientists but ensuring at the same time that these scientists play an active/leading role in their countries) – continue working towards the development of ‘global research infrastructures’?
- Importance of international efforts for capacity building and education for innovation and entrepreneurship (opportunity to highlight how the EU can play a role in this and how EDCTP contributes to this in sub-Saharan Africa).
- To open up to the world, we believe that being able to finance global partners (i.e. non-African or European) would encourage greater international collaboration in EDCTP projects, so having a mechanism to in some calls (not necessarily all) to support third country participants would likely lead to more collaborative research as well as to increase opportunities to co-finance activities with other funders. If we are going to solve global challenges we need close interaction with the best researchers globally, not just in Europe and Africa.

## II. What's our mission? What goals should we set for the next Framework Programme?

Goals should be strongly aligned to EU's political commitments to solving global challenges, e.g. EU's endorsement of the UN Sustainable Development Goals agenda. This is because SDGs can be seen as common goals that both the EU and SSA countries have interest in addressing, which in itself can act as a strong incentive for international cooperation.

- Horizon Europe will incorporate research and innovation missions to ensure the effectiveness of research and innovation funding by pursuing clearly defined targets. This is intended to maximise the impact of investments by setting clearer targets and expected impact when addressing global challenges. FP9 must have a mission targeting the global challenge of infectious diseases, in alignment with SDG3, and here a future EDCTP programme could continue to be a key mechanism for dedicated funding of international collaborative clinical R&D on PRDs in sub-Saharan Africa
- The challenge of industry involvement in infectious diseases research is also an aspect that needs to be addressed. Although the annual G-Finder reports show us that industry investment in R&D for neglected diseases is increasing, it has dropped in some areas (e.g. TB) and the overall incentives for industry partners to participate in innovative collaborative infectious diseases R&D need to be increased. Again, EDCTP can play a clear role here in addressing the goal of removing barriers to innovation, as a convener and funder of academia, industry and other research partners.
- Although a very challenging target under EDCTP2 that will really require policy changes at the national level, increasing the alignment and integration between European national programmes (where they exist) is a very important goal that should remain under FP9 and a future EDCTP programme.
- Developing new or improved medicinal products remains key to addressing the challenge of infectious diseases, but ensuring their accessibility to and impact on the populations that need them most remains key and so it's important to push for the need to support late-stage post-registration operational and implementation research, surveillance, health services optimisation and health systems strengthening – this can be supported through a future EDCTP programme, in cooperation with local governments, development partners and other EU and global initiatives, but it is critical that this work is supported.

Diego Fernández Prieto, Head of the Research & Development Section, EO Science, Applications and Climate Department, European Space Agency (ESA)

International collaboration is a key element of science and space is a good example of how only through international collaboration we are able to achieve objectives that otherwise would be impossible to reach... Copernicus is a good example for this in Europe and the ISS may represent one of the best examples at global scale.

The grand challenges that humankind face today require more than ever that scientists advance their understanding of the planet, its processes and its interactions with human activities and translate that knowledge into information, policy advice and services for the benefit of citizens.

This could only be done if a strong international collaboration is in place. In fact, the major scientific problems we face requires more than ever effective mechanisms to facilitate international collaboration among scientists, institutions and funding programmes bringing together different capabilities, data, knowledge and resources in a synergistic manner so that the final results may be bigger than the sum of the parts.

In this context, Horizon Europe should facilitate this process promoting a better coordination and synchronisation of efforts between EC DG-RTD actions and activities funded from complementary science programmes from Inter-governmental organisations (such as ESA) or non-European funding programmes towards common ambitious goals.

European Partnership Initiatives proposed by Horizon Europe may respond to that need. They may facilitate the alignment of EC DG-RTD science activities with those from partner institutions through effective coordination of efforts under a common framework where the complementary roles, expertise and capacity of the different institutions and programmes may work together to achieve a larger scientific objective.

## Maryline Maillard, counsellor for science and technology at the Mission of Switzerland to the EU

### Main messages:

#### *On Multilateral instruments:*

Switzerland run a stakeholder consultation at national level last year for the interim evaluation of H2020 and for FP9. It was clearly wished by the Swiss R&I actors that:

**FP9 should allow simpler and flexible mechanisms for multilateral international cooperation with countries of strategic importance to EU R&I, by means such as co-funding.**

The instruments which were mentioned as efficient for international collaboration are **in particular:**

#### **A) the public-public-partnerships under Art. 185 such as:**

- Eurostars-2 (participation of Canada, South Africa and the Republic of Korea)
- and AAL (participation of Canada) have successfully demonstrated the added value of international cooperation in the innovation domain using a centralised evaluation process and a EU co-funding for member states / associated countries and a self-financed participation of third countries. This model should be considered for all partnership instruments under FP9, especially in the innovation domain.
- GlobalStars initiative developed in the EUREKA framework for the innovation domain: The GlobalStars initiative serves as a pilot in order to investigate on the possibilities to strengthen the EUREKA Network, its members and stakeholders in a globalized economy; it aims to unite interested EUREKA member countries (variable geometry approach) for the collaboration with collectively chosen big players beyond the European landscape.

- B) Switzerland wants to raise the attention on the various initiatives developed by research stakeholders such as Research Councils, foundations or international organisations, as many of them are also supporting the development of instruments for international collaboration. FP9 could also develop its support to such initiatives under FP9.

One example worth mentioning: the Lead Agency Procedure, open for international funding agencies.

The SNSF tested already 10 years ago with DE and AT the Lead Agency Procedure, which aims at simplifying the submission and evaluation of transnational applications. A common project between researchers needs to be submitted only to the Lead Agency, which is responsible for the evaluation process. The partner organisation approves the funding decision and finances its national part of the project. Since the beginning of the year, the SNSF leads a working group with nearly 20 European research funding organisation within Science Europe in order to develop the Lead Agency Procedure at multilateral level. The main idea is to create an international multilateral collaboration framework composed of research funding agencies in which the Lead Agency procedure will be applied in a similar way. The framework would allow researchers covered by the agencies to submit applications for multilateral collaborative projects in a coherent and uniform way.

#### *On Association of third countries:*

Make association agreements attractive for international partners and keep participation attractive also to associated countries: If restrictions are to apply to associated countries, the criteria should be clear, transparent



and fair. They should be used only in exceptional cases and for a marginal part of the programme. Restrictions should in no way infringe the scientific code of conduct or research integrity (such as IPR).

Switzerland is an EFTA country with a long-standing tradition of collaboration at European and international level; it is an active and reliable partner in the Euratom Programme since 1979 and in the Framework Programmes since 1987. It is the biggest financial contributor to the FPs as associated country so far and invests in many international research organisations including ITER. Its strong research institutions and infrastructures make it an active partner in building the European Research and Innovation Area.

Switzerland is an active and reliable partner in the research programmes (FP and Euratom) in the ERA,

Any international collaboration, with or without association, should trigger to include the best researchers around the world and should not be driven by political rationales.

*Other proposals for concrete improvements/novelties:*

1. Avoid any legal obstacles for international partnerships such as:
  - o automatic reference to EU law/jurisdiction not acceptable for certain third countries
  - o defining an impact with too many reference to EU competitiveness for close to market initiatives (problematic for companies/start-up in third countries) – how will the EIC deal with that?
2. Ease access and participation to third countries:
  - o All topics flagged for international cooperation should be easily accessible on the Participant Portal and the list available should be better communicated by the European Commission.
  - o The administrative burden should be reduced to absolute minimum for third country partners not receiving EU funding.
    - It should be also clearer which third countries have a co-funding mechanism in place and how it works practically.
3. Involve international partners in Missions Boards.
4. Within the evaluation of partnerships, which will be run this autumn, in order to simplify the landscape, a key performance indicator could be set on the involvement of international partners in the different structures.
5. For the preparation of this panel, I wanted to collect information from the field but I realized that now that no delegate nor NCP as following the topic of International cooperation as such, it was much more difficult to track the info than under FP7. Might that be an idea to reintroduce this function of specific NCPs handling the topic?
6. Switzerland supports existing instruments such as COST, EEN, ERA-NET:
  - o ERA-NET allowing collaboration with third countries should be continued under FP9 as flexible enough with less administrative burden than Art. 185.
  - o The Enterprise Europe Network is an existing platform that could be used by the Commission to actively push / pull participation from third countries that could already be part of the EEN.

## Michael Leskiw, International Senior Contract Administrator, Office of Sponsored Programs, International Coordinating Committee, Massachusetts Institute of Technology

Academic sponsored research in the US must follow two sets of rules on every project. First, academic institutions set up institution-wide controls and polices to conform with US government regulations. Second, each sponsored grant establishes terms, as does the Model Grant Agreement (MGA) for Horizon 2020 and, foreseeably, Horizon Europe. When these two sets of rules conflict, US institutions may need reluctantly to decline sponsored awards or not submit proposals. Institutions that seek to negotiate terms or mitigate risks incur additional unfunded costs that discourage more widespread collaboration.

To increase US-EC collaboration, MIT asks the European Commission (EC) to consider the following alterations to the MGA to mitigate the six most substantial conflicts discouraging US-based research institutions from participating in Horizon 2020 and prospectively, Horizon Europe.

Specifically:

1. Allow indirect costs to be charged at federally-negotiated indirect cost rates. US institutions negotiate a rate with the US government that is required to be applied to all organized research regardless of sponsor. The total cost of EC-funded research, as budgeted in a proposal, would continue to be transparent and an objectively-measurable indicator when evaluating the merits and competitiveness of a proposal.
2. Waive the EC's right to object to licensing of a beneficiary's own intellectual property. US regulations strongly encourage institutions to disseminate their intellectual property; any potential conflict with US regulations inhibits US institutional participation on projects with a possibility, for example, of producing software or patentable intellectual property.
3. Offer neutral-site arbitration in lieu of jurisdiction, and a governing law rooted in a common law tradition that will apply relevant standards. Most US institutions lack institutional expertise to interpret a foreign civil code and so must either pay for outside counsel to review an agreement or decline to participate.
4. Revise beneficiary liability from "any damage" to reasonably foreseeable damages directly related to the beneficiary's performance of the project. Specifically exclude intellectual property infringement damages because this prevents the participation of US institutions where the development of patentable or software intellectual property occurs across the spectrum of educational and research activities.
5. Do not require joint and several liability for all beneficiaries participating in an action. Even if restricted to the technical implementation of the action, joint and several liability strongly discourages institutions from taking a small role in a large project, and risk-averse institutions will only consider projects with a very low liability-potential.
6. Accept third-party financial audits. US institutions are audited on an regular basis as a federal (US) research funding condition; re-auditing duplicates effort with diminishing returns and increases overhead.

Summary: The lack of compatibility between Horizon 2020 regulations and US academic institution rules, drafted in accordance with US regulations, created unnecessary friction, discouraging US researchers from collaborating with their European counterparts. There are opportunities for Horizon Europe to unlock significantly greater research collaboration by avoiding the six issues above in its forthcoming MGA. Terms that uphold the values and stakeholder requirements of European funding and are also compatible with local norms would significantly increase international interest and proposal quality in Horizon Europe.