FAPM

The 12th Funding Agency Presidents' Meeting

3rd October 2022 • Kyoto International Conference Center

Organized by Japan Science and Technology Agency (JST) · Deutsche Forschungsgemeinschaft (DFG)

SUMMARY REPORT

Introduction

The Funding Agency Presidents' Meeting (FAPM) brings together the heads of research funding organizations during the annual Science and Technology in Society (STS) forum in Kyoto. The 12th FAPM focused on "international research cooperation in times of crises", and was attended by 45 representatives from 27 countries and regions. The 11th FAPM was held online, but the 12th returned to being an in-person meeting.

The meeting was opened by Prof. Hiroshi Komiyama, Chairman of the STS forum. JST's new President Dr. Hashimoto Kazuhito emphasized that research funders must together navigate socio-political crises and create a robust framework for continuous international research cooperation. DFG President Prof. Dr. Katja Becker, represented by Head of Division for International Affairs Dr. Jörg Schneider, added that we cannot close our eyes to the hardships that the Russo-Ukrainian War brings not only to Ukraine, but also to many other parts of the world. Pandemics, war, climate change and others; research funders face no end of challenges for which we must work together.

Prof. Zakri Abdul Hamid, Chairman of Atri Advisory and former Science Advisor to the Prime Minister of Malaysia, provided the keynote speech to set the tone for the discussions that followed. In his speech, he shared his observations on several practical steps funders should take to mitigate the effect of crises on research cooperation. He emphasized the isolation of researchers in the Global South, made worse during crises such as the COVID-19 pandemic. He also pointed out that advances in communication technologies, seen as a solution to promote international research collaboration, are not equitably shared worldwide. We should account for the large discrepancy between the least and most developed countries. In addition he stressed the need for the scientific community to link with policymakers and political leaders, since a major challenge during the COVID-19 pandemic has been how to provide sound advice in the absence of knowledge and certainty. Prof. Hamid believes that the science policy nexus is the last piece of the giant jigsaw puzzle that needs to be expanded in a very big way. Describing how to leverage robust networks during a crisis, he argued that each country should have sufficient research capacity and a dedicated unit which solely concerns itself with addressing crisis situations. These units could be linked internationally, and he mentioned the Sendai Framework for Disaster Risk Reduction as a good example.

Discussion Summaries

Two key questions were discussed at tables of up to six participants, and their conclusions presented by table rapporteurs at the end of the meeting. Some of the common themes have been summarized below. See Annex II for a more detailed breakdown of these conclusions.

1. What practical steps can funders take to mitigate the effect of crises on research cooperation, and ensure continued scientific excellence?

Flexible mechanisms

Flexibility should be incorporated into the utilization of resources, adjustments to agreements considering the impact of each crisis, and choosing the target for support. With regards to this flexibility, direct engagement with academia is necessary to understand the need of individual scientists. Pre-existing flexible mechanisms can be particularly useful for funding research during a crisis. Examples of flexibility in funding mechanisms include dedicated special calls, a pivot of existing grants through amendment, or a contingency budget for sudden crises.

Designated preparedness organizations

The best way to be prepared for crises is to envisage them in as much detail as possible, plan ahead and establish early warning/forecasting systems. These activities could be implemented through designated organizations or units for which resources and personnel are set aside on a national level and linked on a regional and global level.

Multidisciplinary repositories and data sharing

Data sharing is essential to enhance international research cooperation. Open access and translation of information is crucial for a free flow of data, rapidly accessible from all parts of the world. Multidisciplinary repositories should be funded, this data should be made interoperable, and databases should be connected to each other.

Virtual communication technologies

The COVID-19 crisis decreased physical mobility, but demonstrated the potential of remote research cooperation. Even as life returns to 'normal', we should also continue virtual communication as it results in faster and more efficient networking. Of course, face-to-face communication should still be our primary means of establishing connections, after which we can supplement with virtual communication.

Responsible cooperation

We need to sensitively address the political effects of cooperation on a case-by-case basis. For example, partnering with 'like-minded' countries can widen the gap with the global south. In addition, after crises such as the Ukraine invasion, we should not 'brain drain' academic talent away from the affected country and cause further damage. 'Twinning' with local universities could be an effective way of avoiding this danger.

Cooperation diplomacy

The Ukraine invasion and escalating political tensions are creating difficulties for scientists in these countries to collaborate. Advanced economies should adopt a pro-active and targeted approach to reach out to these scientists. Research funding organizations should support various science diplomacy initiatives established by international organizations and networks to facilitate collaboration between

scientists in countries with politically strained relationships.

International emergency fund

One potential action could be creating an international emergency fund, a 'science emergency fund' specifically for research. This fund could be created honouring the memory of STS Forum founder Koji Omi.

Addressing inequalities

Funding organizations need to address the inequalities in research, education, and management of the COVID-19 pandemic, especially the international inequalities in vaccination availability.
There is an urgent need for funders to encourage and fund the establishment of networks and programs that support refugee scientists, especially from low-income countries. Current north-south and south-south collaboration funds might be reduced due to the prevailing crises, which could result in a severe reduction of collaboration programs.

2. What type of network is most robust during a crisis? And how can we nurture these robust networks?

Established mechanisms

We need standing mechanisms and agreements established during 'normal' times, that are ready to be used in a crisis. Existing research and innovation networks should consolidate their efforts. Good examples are the STS forum, Global Research Council, FAPM, Horizon Program under the EU framework, and Committee for Science, Technology and Innovation in ASEAN.

Fast and informal mechanisms

We should facilitate the creation of fast and informal mechanisms able to respond to regional, national and global crises. These should build synergies with the Global Research Council, academic societies, and umbrella organisations such as Science Europe. In the context of a geopolitical crisis, when formal links with another country are not possible, these informal links may be kept warm and become a useful conduit for continued contact to exchange information.

Trust and shared values

It is necessary to build relationships of trust with partners in order to make cooperation easier in crises. The relationship can be robust if built on shared values and responsibility. For this purpose, networks should involve young researchers that can begin long-term sustainable partnerships. International exchanges and trust-building among young researchers should be encouraged.

Annex I: Meeting Format

Date & Time:	Monday 3 October 2022, 12:40-14:10 JST
Venue:	Room E, Kyoto International Conference Center
Chairs:	Dr. Hashimoto Kazuhito, President, Japan Science and Technology Agency (JST) Prof. Dr. Katja Becker*, President, German Research Foundation (DFG)
Keynote:	Prof. Zakri Abdul Hamid, Chairman, Atri Advisory; former Science Advisor to the Prime Minister of Malaysia
Participants:	45 - from 27 countries/regions (see Annex III for full list)

* represented by Dr. Jörg Schneider, Head of International Affairs, DFG

12:40-12:45	Opening remarks	Dr. Hashimoto Kazuhito, Prof. Dr. Katja Becker, Dr. Komiyama Hiroshi
12:45-12:50	Explanation of meeting format	Secretariat
12:50-13:05	Keynote speech	Prof. Zakri Abdul Hamid
13:05-13:45	Workshop-style discussions	
13:45-14:05	Table discussion summaries	Table rapporteurs
14:05-14:10	Concluding remarks	Dr. Hashimoto Kazuhito, Prof. Dr. Katja Becker

Participants sat at tables of up to six members, discussed the two key questions, then presented their tables' conclusions to the wider group.

The meeting was held as usual on the occassion of the STS forum, *at the Kyoto International Conference Center, happening once again in-person following last year's online event.*

Annex II: Table Rapporteur Notes

Table 1:

Pre-existing flexible, sustained collaborations useful for funding during a crisis:

- The pandemic drove more international collaboration – an option was special calls
- Flexible out of the box collaboration key – Canada and Switzerland collaborated under Eureka during pandemic
- "white space" funding allocation for emerging needs – this was used in Singapore during pandemic to expedite response to policy needs – not feasible in all jurisdictions
- In some cases, existing grants were pivoted to address needs via an amendment (e.g. shift mRNA for personalized cancer vaccines to COVID-19 response)

Flexible funding – step in during crisis to encourage – several models:

- Leaning in on special calls with tangible benefits from pandemic
- Timing and risk management shifted to enable quick response calls often with a top down focus and bottom up response
- Special funding was created (e.g. in Canada – special purpose budget for PPEs, increase in SME funding)
- ROI on Pandemic surge funding will take time – Singapore noted Nature publications as well as test kit IP licensing to 45 economies for $7M as a first test of value.

Networks were impacted and efforts undertaken to rebuild:

Need to rapidly identify networks in a crisis both domestically and internationally:

- In some cases, the underlying networks had changes with people moving to new roles – going forward creating new networks to ensure connections. (e.g. ASEAN fellowships to enable visits to Singapore)
- Science Europe sought to address a special program for Ukrainian scientists now refugees in Poland and expectation of ongoing role for future connections.

Existing networks noted to continue efforts:

- Perhaps there is an opportunity for STS, Global Research Council and other networks to further strengthen their networking functions.

Other Notes:

- Sharing of best practices key.
- We could ask how we address unexpected vs. anticipated crises.

Table 2:

Preamble: Preparing for Crises

- the best way to be prepared for crises is to envisage them to the extent possible and prepare for them
- this will include perhaps either having a designated organisation or some unit being tasked with this responsibility
- there will be a need to set aside resources and personnels to plan and prepare the crises responses and this process has been done in many countries at the national level
- more can be done to do this on a multilateral, regional or global basis

Nature of Crises

- crises may be different and responses have to be appropriate to the crises
  what is appropriate for pandemic may not work for one arising from geo-political dynamics eg War in Ukraine
- therefore, there is a need to understand the nature of the crises

Practical Steps

- Flexibility is the key here in terms of utilisation of resources; how to make adjustments to what has been agreed to take into account the impact of the crises; and to be targeted in who need this support
- however, it is important to recognise that the needs of different individual scientists or research groups are different and there is no one size fits all approach; therefore, it is important to engage the scientists to better understand their needs and respond appropriately and dynamically, a case of "Top down support for bottom up feedback", eg one scientist may need facilitation to return home; on the other hand, another may need facilitation to bring a collaborator in-country for the collaboration to continue

Robust Network

- the Horizon Program under the EU framework is an example of a permanent structure that is a very robust and comprehensive framework to respond to crises
- it goes beyond the EU member countries to enable associated countries to be affiliated eg Israel, Norway, Canada and others
- arising from this, it can respond with emergency support eg for Syrian scientists and now for Ukrainian scientists
- Horizon is also working towards putting in place an international repository for knowledge to be shared beginning with Cancer
- other regions evolving along this broad direction is ASEAN which has a Committee for Science, Technology and Innovation to foster closer coordination and cooperation on projects of shared interests
- beyond formal networks, the contribution of informal inter-personal ties should also be fostered. In the context of a geo-political crisis when the formal links with another country is not possible, the informal links may be kept warm and become a useful conduit for continued contact to exchange information

Developing Economies

- notwithstanding the above, there are many countries and their scientists who cannot benefit or access the opportunities shared above.
- there is therefore a need for the Advanced Economies eg the EU Horizon Program to have a pro-active and targeted approach to reach out to these scientists
- a significant part of the effort should be effected during times of normalcy for capacity building as well as to foster the informal ties

Table 3:

Q1. What practical steps can funders take to mitigate the effect of crises on research cooperation, and ensure continued scientific excellence?

- Reinforce research collaboration online using communication technologies: The Covid-19 crisis decreased physical mobility, however demonstrated that online research collaboration could work very well.
- Plan ahead of 'crisis' by defining the elements of a 'crisis' situation and produce a list of priorities. Develop costs predictions, identify opportunities for collaboration, and build research programmes to respond rapidly to urgent challenges.
- Fund multidisciplinary repositories easily accessible, connect research databases and make them open access (such as the European Open Science Cloud – development in progress).
- Create an emergency fund honouring the memory of Koji Omi

Q2. What type of network is most robust during a crisis? And how can we nurture these robust networks?

- Generate or consolidate existing research and innovation networks, balancing top-down with bottom-up approaches and policies
- Facilitate the creation of fast, informal research and innovation mechanisms able to respond to regional-national-global crisis
- Build synergies with the Global Research Council, academic societies and umbrella organisations such as Science Europe

- Enhance international exchanges among young researchers
- Bring closer funding research organisations with research performing organisations and academic societies

Table 4:

- During COVID-19 countries turned inward and missed the opportunity to share and learn from other countries experiences and programs. This also missed the opportunity to influence governments and organisations regarding the importance of science and research to the sustainability of countries and the world.
- Participants supported proposals to establish and/or maintain the link between science and policy players within and across countries to support emergency scenarios. This could be as simple as regular updating of a contact list and sharing of information.
- The group discussed the various programs that had been introduced by countries in response to COVID-19 to assist with issues such as: addressing supply chain issues for essential products and supplies (Canada); resilience in national systems and structures to help in crisis (France); support for post-docs to assist in covering the gap for those that weren't able to complete due to COVID-19 constraints (USA); support to hospitals to deal with delivering services on-line and non-touch communications (Japan); translation of COVID-19 related research into English and provide it open access as quickly as possible to benefit all researchers (Japan).
- Table participants agreed to support an ongoing network that would benefit both emergency and on-going international engagement. This would also support scientific diplomacy with traditional diplomacy. An example of another use for the network is to share response arrangements for other global issues such as energy or open access.
- This could build on existing arrangements and build relationships.

Table 5:

- We need a large base of knowledge ready to use in times of crisis. i.e. we need 'knowledge resilience'.
- After crises, such as Ukraine invasion, we should not 'brain drain' academic talent away from the affected country. We need to build back without causing further damage. 'Twinning' with local universities could be an effective way of doing this.
- We need to build relationships of trust with partners, to make cooperation easier in crises. Alongside this, we need standing mechanisms and agreements in place, in order to act quickly and flexibly.
- We have to navigate politics, and consider the political effects of supporting cooperation in difficult times. For example, partnering with 'like minded' countries, can also widen the gap with global south. We need to address each situation sensitively, on a case-by-case basis.
- One potential action could be creating an international emergency fund, a 'science emergency fund' specifically for research.

Table 6:

- The necessity for the creation of R&D programs and initiatives where its modality is based on collaboration.
- Research on Early Warning and Forecasting System to establish and improve the crisis early warning management, for example, the climate change
- Data sharing is very importation to enhance international research cooperation. That will also feed into economic benefits and increased innovation, in addition to higher rates of advancement in research. But we need to consider a lot of national barriers that makes data sharing hard.
- We are stressing on the international collaboration during the pandemic advanced, through developed technologies for vaccines, diagnostic tests, and therapeutics. That makes the world better prepared for the next large pandemic.
- To address crisis, we believe timeframe is an issue. We believe that majority of funding is going to the basic research, and we need to have more of the applied research to address challenges, like

climate change.

- The involvement of policy makers when international research cooperation is mentioned is important, especially during the time of crisis. Funding agencies need to be supported with contingency budget for such sudden outbreaks or crisis. We are emphasizing on the importance of having a scientific advisor to the prime minister.
- During the time of crisis, we believe communication and continuous dialogues is important as exchanging ideas between the researchers will keep motivating brainstorming, which will leave to better research focused on related aspects.
- As the pandemic is over, we believe virtual communications is necessary to keep on going as it results in a faster and more efficient networking.
- At the same time, personal network is important to ensure making the connection before going virtual.
- Continuation of the discussion on this topic is important at the next GRC especially for addressing the contingency budget and there is some resistance to this.

Table 7:

- Among the millions of refugees and displaced people there are large numbers of scientists, doctors and engineers who desperately need protection. Their number has increased substantially in recent months due to the Ukraine war and continuing conflict in the middle-east. They represent invaluable assets for the global scientific community, and their loss has grave implications for national and international science.
- There are a number of organizations and networks, mostly in Europe, currently engaged in supporting displaced and refugee scientists. Research funders need to support these robust organizations and networks.
- Additionally, most of the science refugees are in developing countries close to places of crises. There is an urgent need for funders to encourage and fund the establishment of networks and programs that support refugee scientists in these countries, especially in low-income countries.
- A number of international scientific organizations have established north-south and south-south collaboration programs in research and education with financial support from funding agencies in both developed and developing countries. There are serious concerns that these funds might be reduced due to the prevailing crises, which could result in a severe reduction of collaboration programs with universities and research centers, especially in low and lower middle income countries. These include competitive, merit-based research grants and education fellowships to young researchers and bright students in low-income and least developed countries. Funding organizations should work together to maintain and strengthen these badly needed capacity building programs.
- there is also an urgent need to support the research and training activities of global networks that promote collaboration in interdisciplinary research related to the SDGs
- science has no national borders and scientists reach out to their peers wherever they are located for discussions and collaboration. The Ukraine war and the escalating political problems between major powers are creating difficulties for scientists in these countries to collaborate. Research funding organizations should address these difficulties by supporting various science diplomacy initiatives established by international organizations and networks to facilitate collaboration between scientists in countries with politically strained relationship.
- research funding organizations need to support the establishment of regional and global networks of research and training in climate change resilience and adaptation
- funding organizations need to address the inequalities in research, education and management of COVID-19 pandemic, especially the inequalities in vaccination between countries and regions

Table 8:

Q1. What practical steps can funders take to mitigate the effect of crises on research cooperation, and ensure continued scientific excellence?

- Continue to invest in research cooperation although the world is becoming more polarized

- Make sure that international cooperations are based on shared values, integrity, and openness
- Global challenges need cooperation, but need to respect international rule of law
- Need for smarter allocations and learn from past experiences
- Be flexible to adapt to various situations
- Involve young researchers
- A suggestion could be to create a sandbox to try new ideas, for instance for climate change, global health, next pandemic, and maybe involve civil society

Q2. What type of network is most robust during a crisis? And how can we nurture these robust networks?
- Need networks on all levels
- Robust if built on shared values and responsibility
- Also need for connections between the levels
- Involve young researchers in the networks
- Be opportunistic regarding subjects
- Involve international organizations

Annex III: Table Members

* Table Chair * Table Rapporteur

Table	Name	Position	Organisation	Country
1	Kazuhito HASHIMOTO *	President	Japan Science and Technology Agency (JST)	Japan
	Lai Fung CHAN	Chairman	Agency for Science, Technology and Research (A*STAR)	Singapore
	André KUDELSKI	President	Innosuisse - Swiss Innovation Agency	Switzerland
	Iain STEWART *	President	National Research Council Canada (NRC)	Canada
	Maria LEPTIN	President	European Research Council (ERC)	EU
	Zbigniew BŁOCKI	Director	National Science Centre (NCN)	Poland
2	Wiparat DE-ONG	Executive Director	National Research Council of Thailand (NRCT)	Thailand
	Alejandro ADEM *	President	Natural Sciences and Engineering Research Council of Canada (NSERC)	Canada
	Chuan Poh LIM *	Chairman of the board	Singapore Food Agency (SFA)	Singapore
	Tsuyoshi SUGINO	President	Japan Society for the Promotion of Science (JSPS)	Japan
	Julien GUERRIER	Director	Common Policy Centre, DG Research and Innovation, European Commission	EU
	Jörg SCHNEIDER	Head of International Affairs	German Research Foundation (DFG)	Germany
3	Lidia BORRELL-DAMIÁN *	Secretary General	Science Europe	Europe
	Kristin DANIELSEN *	Executive Director - Business development and innovation	Research Council of Norway (RCN)	Norway
	Takeshi WADA	Executive Director	New Energy and Industrial Technology Development	Japan
	Mitja LAINŠČAK	Director	Slovenian Research Agency	Slovenia
	Zakri ABDUL HAMID	Chairman	ATRI Advisory	Malaysia

4	Judi ZIELKE *	Chief Executive Officer	Australian Research Council (ARC)	Australia
	Nina KOPOLA *	Director General	Business Finland	Finland
	Angelo VOLPI	Science Officer	National Research Council (CNR)	Italy
	Hideyuki TOKUDA	President	National Institute of Information and Communications Technology (NICT)	Japan
	Kendra SHARP	Head, NSF Office of International Science and Engineering	National Science Foundation (NSF)	US
5	Evaldo Ferreira VILELA	President	National Council for Scientific and Technological Development (CNPq)	Brazil
	Pavel KABAT *	Secretary-General	International Human Frontier Science Program Organization (HFSPO)	International
	Kian Teik BEH	CEO	National Research Foundation (NRF)	Singapore
	Paula EEROLA	President	Academy of Finland	Finland
	Paul MONKS	Chief Science Advisor	Department for Business, Energy & Industrial Strategy (BEIS)	UK
	Hiroyuki KANEKO *	Vice President	Japan Science and Technology Agency (JST)	Japan
6	Marcel LEVI	President Executive Board	Netherlands Organisation for Scientific Research (NWO)	Netherlands
	Lars HULTMAN	Chief Executive Officer	The Swedish Foundation for Strategic Research (SSF)	Sweden
	Fulufhelo NELWAMONDO *	Chief Executive Officer	National Research Foundation (NRF)	South Africa
	Yoshinao MISHIMA	President	Japan Agency for Medical Research and Development (AMED)	Japan
	Riham A. DAHER *	Director of Programs Administration	Qatar Research, Development and Innovation Council (QRDI)	Qatar
	Jim FALK	Professional fellow	The University of Melbourne; Universities Australia	Australia

7	Laksana Tri HANDOKO *	Chairman	National Research and Innovation Agency (BRIN)	Indonesia
	Mohamed Hag Ali HASSAN *	President	The World Academy of Sciences (TWAS)	International
	Hanoch GUTFREUND	Executive Committee Chairperson	Israel Science Foundation (ISF)	Israel
	Irene WENNEMO	Chair of the Board	Swedish Research Council (VR)	Sweden
	Raymond CRON	CEO	Switzerland Innovation Foundation	Switzerland
	Shigeo MORIMOTO	Vice President	Japan Science and Technology Agency (JST)	Japan
8	Carlos Américo PACHECO *	Executive Director	State of São Paulo Research Foundation (FAPESP)	Brazil
	Antoine PETIT	Chairman and CEO	National Center for Scientific Research (CNRS)	France
	Futoshi HOSHINA	Director-General	Bio-oriented Technology Research Advancement Institution, NARO (BRAIN)	Japan
	Andreas GÖTHENBERG *	Executive Director	The Swedish Foundation for International Cooperation in Research and Higher Education (STINT)	Sweden
	Patamawadee POCHANUKUL	President	Thailand Science, Research and Innovation (TSRI)	Thailand