

D3.3

REPORT ON COORDINATORS NEEDS

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INTRODUCTION

The objective of Task 3.3 International cooperation is to map the needs and/or interest of European Research Infrastructures for/in International Cooperation. At a second stage, the RICH consortium, in collaboration with networks involved in international cooperation, mainly the respective National Contact Points, will address these needs and aim for partnerships among stakeholders. Particular emphasis is given to European Neighbourhood Policy (ENP) countries¹, Western Balkan Countries², Industrialised, BRIC countries and Emerging economies³.

During the reporting period, the RICH consortium (Coordinator, WP Leaders) elaborated the methodology, developed the questionnaire and defined the target group to address it. Existing policy papers, as well as Input from National Contact Points and experts for International Scientific Cooperation Activities was taken into account.

The questionnaire has been disseminated to Coordinators and/or Executive Directors of ESFRI Research Infrastructures, Integrated Infrastructures Initiatives and Infrastructures offering Transnational & Virtual Access, on 30 November 2015. Individual reminders followed. From the total of 48 RIs managers, 20 replies were collected. Information was also gathered from the online material of the Research Infrastructures. The results presented in the section below cover, in total, 32 Research Infrastructures.

¹ ENP: European Neighbourhood Policy countries

ENP/Middle East and N. Africa: Algeria, Egypt, Israel (associated country), Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia
ENP/Eastern Europe countries: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine

² WBC/Western Balkan Countries: Albania, Serbia, Bosnia-Herzegovina, FYROM, Montenegro

³ USA, Canada, Australia, New Zealand, Russia, and South Africa

RESULTS

2.1 Interest for collaborations per thematic field

Based on both the replies and the online material, the interest for collaborations per thematic field are described below⁴:

Table 1: Collaborations per thematic field

Scientific Field	Number of RIs	ENP ⁵	WBC ⁶	Industrialized ⁷	Most popular ⁸
Biological and Medical Sciences	9 (incl. 1 TA Coordinator)	Israel, Algeria, Egypt, Jordan, Tunisia, Morocco, Turkey	Montenegro, Bosnia, FYROM, Serbia	USA, Zealand, South Africa, Russia, Canada, Australia, Argentina, Japan, India, China, Uruguay, Brazil, S. Korea	USA, South Africa, Australia
Physical Sciences & Engineering	9 (incl. 2 TA Coordinators)	Israel, Georgia, Ukraine, Armenia		USA, Zealand, South Africa, Russia, Canada, Australia, Argentina, Japan, India, China, Mexico	USA, Russia, Canada
Environmental Sciences	6	Algeria, Egypt, Israel, Jordan, Libya, Tunisia, Morocco, Turkey, Palestine Authority, Syria, Lebanon, Georgia, Moldova, Ukraine	Albania, Montenegro, Bosnia, FYROM, Serbia	USA, Zealand, South Africa, Russia, Australia, Japan, India, China, Uruguay, Mexico, Brazil, S. Korea	South Africa, Russia
Social Sciences and Humanities	4	Israel, Ukraine, Armenia	Albania, Serbia	USA, Russia, Japan, India, China, Uruguay, Mexico, Brazil, South Korea	
Energy	2	Israel		USA, Russia, Canada	
New RI (in the ESFRI 2016 Roadmap): EMPHASIS	1	Morocco, Syria, Turkey		Australia	

⁴ Replies of RIs in the question: "In case that there is interest for INCO's countries participation in RI, please specify"

⁵ Countries selected by the RIs in the questionnaire.

⁶ As above.

⁷ As above.

⁸ Countries selected by most of Research Infrastructures of the sector.

2.2 Interest for collaborations per country

Table 2: Number of interested RIs per country

Country	Number of interested RIs
USA	13
Russia	12
South Africa	11
Australia	9
Canada	8
Israel	7
India	6
Serbia	5
Zealand, Turkey, Tunisia, Morocco, Japan	4 (for each country)
Algeria, Egypt, Ukraine, Albania, Montenegro, Bosnia, China, Argentina, South Korea, Brazil	3 (for each country)
Georgia, Jordan, Armenia, FYROM, Mexico	2 (for each country)
Moldova, Syria, Lebanon, Uruguay, Libya, Palestinian Authority	1 (for each country)

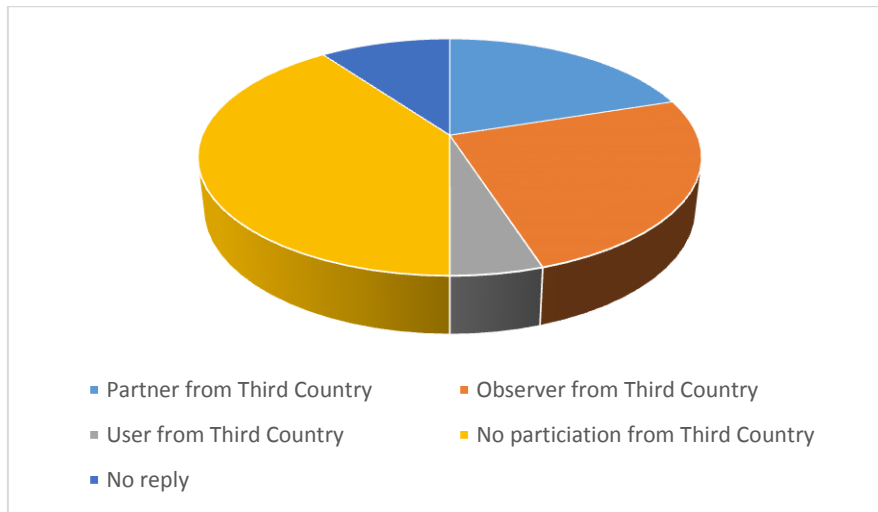
2.3 Existing types of collaborations & Interest for collaboration with specific organisation types

Based on the replies received (20 questionnaires: 3 from Environmental Sciences, 9 from Biological and Medical Sciences, 6 from Physical Sciences & Engineering, 2 from Social Sciences and Humanities)⁹:

- 12 Research Infrastructures declared that there is currently participation from country/countries (other than EU/Associated countries) in their RI: in 5 cases, the participation concerned an observer of the RI; in 4 cases, the participation concerned a member; in 1 case, the participation concerned a user; in 2 cases, there was no reply on the concrete status of participation.
- All RIs are interested in collaboration with country/countries other than EU/Associated countries). 11 are interested in collaborating only with Research Centres and Universities; 4 with Research Centres, Universities and Business/Private Sector; 3 only with Universities; 1 only with Research Centres; 1 did not identify the type of organisation.

⁹ Information from the online material of the Research Infrastructures is not taken into account in this section.

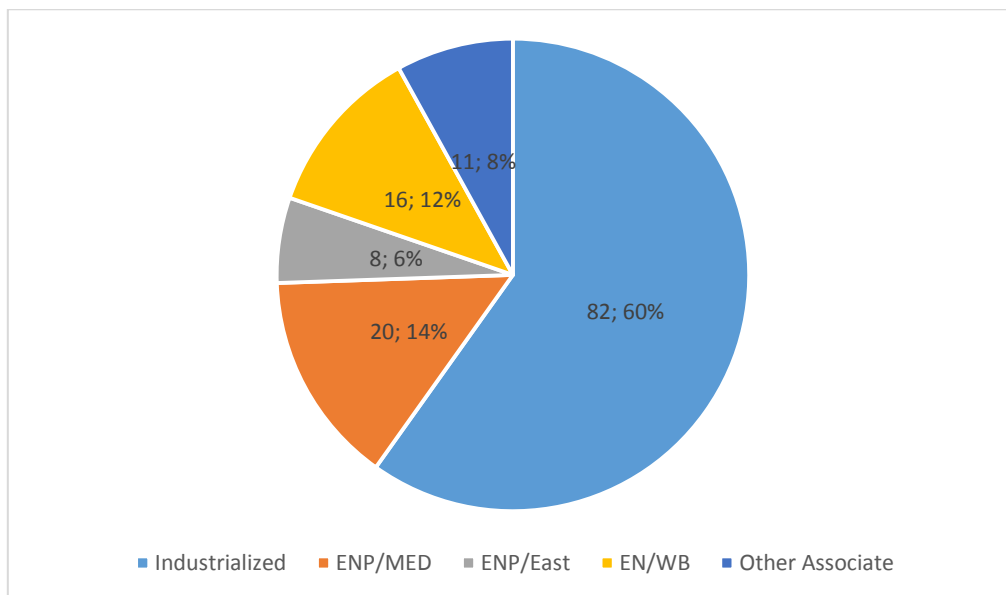
Graph 1: Current collaborations with countries other than EU/Associated



2.4 Expressions of interest for collaboration per country group

In total, 137 expressions of interest for collaboration have been noted by the RIs. Most EoIs concern collaboration with industrialised countries (82,6%). European Neighbourhood Policy countries, in the Mediterranean area, follow (20,1%).

Graph 2: Expressions of Interest for Collaboration per country group



Note: For this graph:

- *Industrialised: USA, Russia, South Africa, Australia, Canada, India, Zealand, Japan, China, Argentina, South Korea, Brazil, Mexico (Uruguay, eligible for H2020 under Overseas Countries and Territories, is included in this category for this particular graph)*
- *ENP/MED: Tunisia, Morocco, Algeria, Egypt, Jordan, Syria, Lebanon, Libya, Palestinian Authority*



- *ENP/East: Ukraine, Georgia, Armenia, Moldova*
- *EN/West Balkan: Serbia, Albania, Montenegro, Bosnia and Herzegovina, FYROM*
- *Other Associated Countries: Israel, Turkey.*

2.5 Impact of collaborations

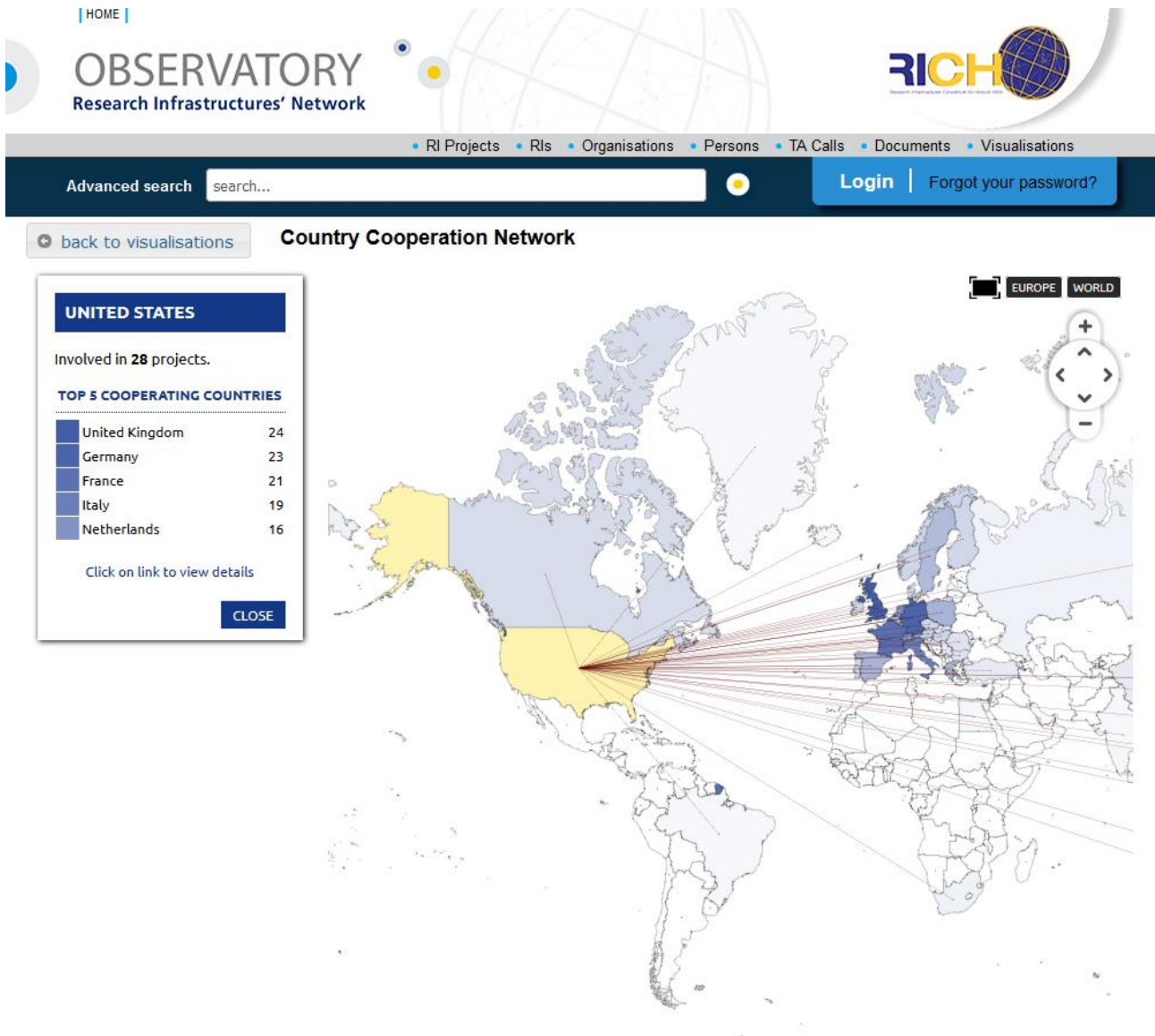
According to the replies of RIs, the impact of the participation of INCO countries lays among others in:

- Stimulating the mobility of researchers world-wide;
- Enforcing cross-border networking among powerful research groups, efficient transfer of knowledge;
- Expanding skills and expertise;
- Strengthening open access to scientific data through shared and agreed data policies, access rules;
- Strengthening interoperability between existing research infrastructures (meta-data, e-services, IT);
- Accessing foreign resources;
- Widening user clientele;
- Addressing efficiently societal challenges at global (not administrative) scale;
- Increasing the efficiency in procurements (worldwide procurements);
- Increasing the participation of business sector (companies from Third Countries);
- Educating the next generation of scientists and engineers.

H2020-RI PROJECTS & COLLABORATION WITH THIRD COUNTRIES

The projects funded under Research Infrastructures programme (H2020 & FP7) provide complementary data on the existing collaborations of RIs with Third Countries. The networks that are already established under projects are visualized in the RICH Observatory (<http://observatory.rich2020.eu/rich/visualizations/links>).

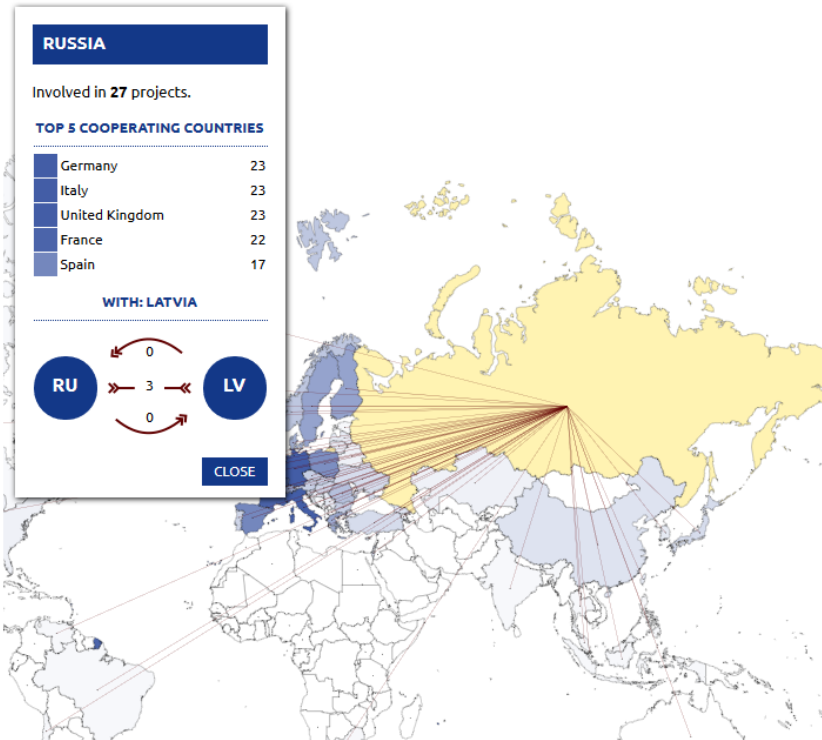
Indicatively, for the 3 most popular countries (USA, Russia, and South Africa):



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Country Cooperation Network

EUROPE WORLD



[back to visualisations](#)

Country Cooperation Network

EUROPE WORLD

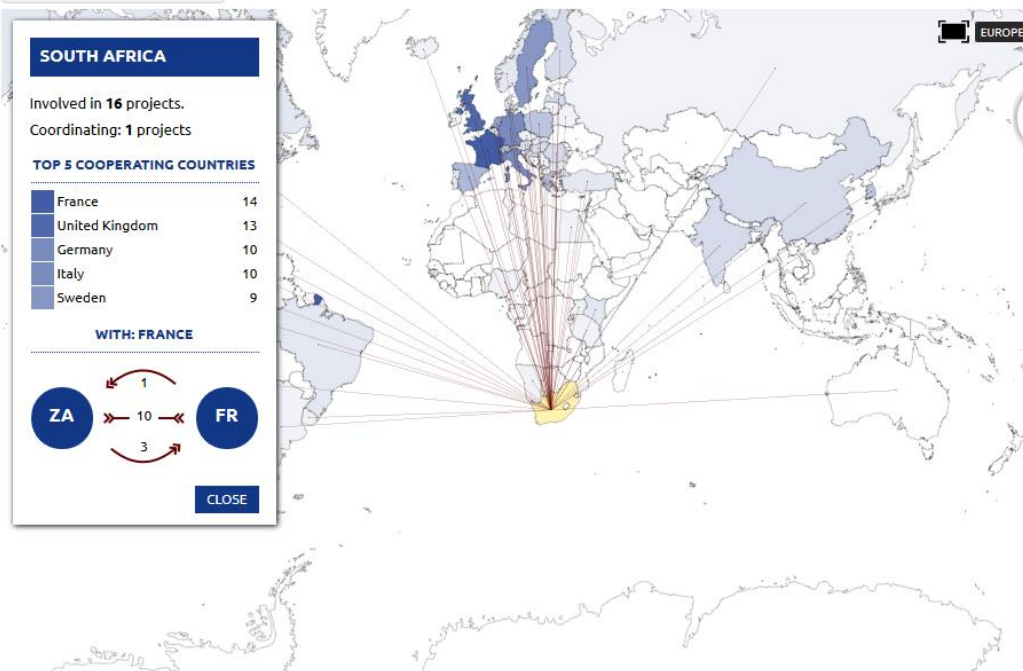


Table 3: H2020 Participation and Requested EU Financial Contribution in Signed Grant Agreements by Country (All Project Participants in Excellent Science / Research infrastructures ¹⁰)

	Country	Unique Participants from a Country	Participations from a Country		EU Financial Contribution for Participants from a Country	
		No.	No.	%	euro	%
Candidate Countries	AL - Albania	1	1	0%	35700	0%
	ME-Montenegro FYROM	1	2	0%	92305	0%
		2	2	0%	165955	0%
	RS - Serbia	5	7	0%	937952	0%
	TR - Turkey	6	7	0%	859102	0%
Total for Candidate Countries		15	19	1%	2091014	0%
ASSOCIATE	BA - Bosnia - Herzegovina	1	1	0%	80520	0%
	CH - Switzerland	19	53	3%	18279506	3%
	GE - Georgia	1	2	0%	123221	0%
	IL - Israel	6	12	1%	1992773	0%
	IS - Iceland	3	4	0%	553377	0%
	MD - Moldova	1	2	0%	142123	0%
	NO - Norway	25	46	3%	17337170	3%
	TN - Tunisia	1	1	0%	10000	0%
	UA - Ukraine	1	1	0%	19646	0%
	Total for ASSOCIATE		58	122	7%	38538336
Third Countries	AM - Armenia	1	2	0%	124335	0%
	AU - Australia	3	4	0%	2454104	0%
	BR - Brazil	1	1	0%	0	0%
	BY - Belarus	2	2	0%	63142	0%
	CA - Canada	1	1	0%	0	0%
	CL - Chile	2	2	0%	125950	0%
	CN - China	1	1	0%	73375	0%
	CO - Colombia	1	1	0%	38388	0%
	EC - Ecuador	1	1	0%	10410	0%
	EG - Egypt	1	1	0%	159750	0%
	GD - Grenada	1	1	0%	46450	0%
	GH - Ghana	1	3	0%	551776	0%
	ID - Indonesia	1	1	0%	0	0%
	JO - Jordan	1	1	0%	78759	0%
	JP - Japan	1	1	0%	0	0%
	KE - Kenya	1	1	0%	110000	0%
	KG - Kyrgyzstan	1	1	0%	20313	0%
	KR - Korea	1	1	0%	0	0%
	MG - Madagascar	1	1	0%	10000	0%
	MX - Mexico	1	1	0%	0	0%

¹⁰ Table extracted from eCORDA (18/11/2016)

MY - Malaysia	1	1	0%	0	0%
NG - Nigeria	1	1	0%	70000	0%
PH - Philippines	1	1	0%	0	0%
RU - Russia	10	10	1%	598778	0%
TH - Thailand	1	1	0%	0	0%
TW - Taiwan	1	1	0%	0	0%
TZ - Tanzania	1	1	0%	89000	0%
UG - Uganda	1	1	0%	70000	0%
US - United States	6	6	0%	896253	0%
UY - Uruguay	1	3	0%	647478	0%
ZA - South Africa	7	8	0%	3126236	1%
Total for Third Countries	55	62	4%	9364495	2%

POLICY INPUT FOR INTERNATIONAL COOPERATION / GLOBAL RIS

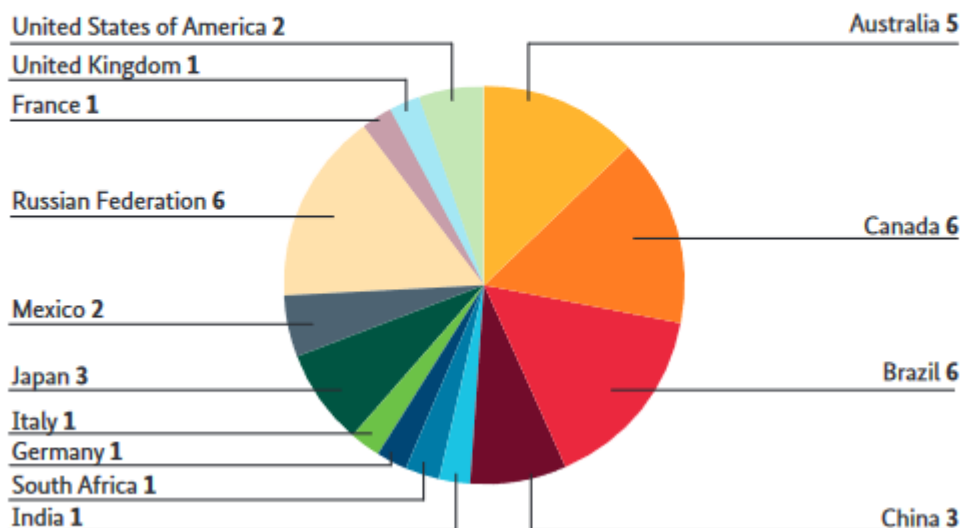
The Group of Senior Officials on Global Research Infrastructures recognises the vital role of global research infrastructures in addressing world-wide S&T challenges and the benefits of coordinating investments in global research infrastructures to efficiently use the available resources and fully realise their potential benefits¹¹.

The complexity of RIs, as well as high development, construction and operation costs or the the global nature of the scientific challenge addressed makes it impossible for one country or region alone to build and operate these facilities. In such cases it becomes crucial to make concerted efforts at the international level for the realisation of "global research infrastructures". Three broad categories of research infrastructures of global relevance have been proposed:

- Real single-sited global facilities are geographically localized unique facilities whose governance is fundamentally international in character;
- Globally distributed research infrastructures are research infrastructures formed by national or institutional nodes, which are part of a global network and whose governance is fundamentally international in character; Ocean, earth or seafloor observatories fit very well into
- National facilities of global interest are national facilities with unique capabilities that attract wide interest from researchers outside of the host nation.

Graph 3: National based Research Infrastructures of Global Interest¹²

National based Research Infrastructures



Among the recommendation for the framework for global research infrastructures, the following stress the significance of and the potential benefits from the international dimension:

- Global critical mass will better address the most pressing global research challenges;
- Measures to facilitate the international mobility of scientists and engineers to participate in global research infrastructures should be promoted;

¹¹ Group of Senior Officials on Global Research Infrastructures Progress Report 2015

¹² As above.

- Access policy to the global research infrastructures should be defined from the very beginning and be based on merit;
- Global research infrastructure initiatives should recognize the utility of the integrated use of advanced e-infrastructures, services for accessing and processing, curating data and remote participation (interaction) and access to scientific experiments;
- The utility of data exchange and interoperability of data across disciplines and national boundaries should be recognised as means to broadening the scientific reach of individual data sets.

Global challenges for Research Infrastructures were discussed in the ICRI (International Conference on Research Infrastructures), held in Athens, on 2014¹³. The main conclusions were:

- Addressing global challenges needs truly global RIs as many data and competencies come from outside developed areas.
- Addressing these challenges requires open access to data, but not just open access: intelligent open access, data need to be accessible, intelligible, assessable, and revisable.
- Inclusiveness means bringing all the stakeholders to the table (including from less favoured areas) and developing the capacity to exchange data from and with all areas.
- There is a need for data network development and trainings, and free circulation of staff.
- Open access to data also means addressing issues related to cyber-security, privacy, and to commercial interests.

¹³ ICRI 2014 Conference Conclusions (http://www.icri2014.eu/sites/default/files/D.2.2-ICRI_Conclusions_FINAL_FULLRES.pdf)

ANNEX I: QUESTIONNAIRE

1. The Research Infrastructure

- Title:
- Acronym
- Governance and Legal Status (please specify the statutes, and the legal status: ERIC or other.) of the RI
- Distributed Infrastructure – Host Country
- Members/participate countries of RI (including RIs-ERIC, or under any other legal status)
- Contact person

2. International Cooperation activities -

- Is there participation of country/countries (other than EU and Associated countries) in the RI - Please specify YES NO
- Which is the status of the partner/participant from INCO's country in the RI (Member observer)

3. Identification of the need/s for the participation of the following INCO's country/countries in the RI

- Is there any need for the participation in the specific European RI, of an entity/pertinent partner /RI which is /are located in one or more of the following target INCO's countries YES NO
- In case that there is interest for INCO's countries participation in RI, please specify:

3a. Group A:

- ENP countries¹⁴/ ENP: European Neighbourhood Policy
- ENP/Middle East and N. Africa: Algeria, Egypt, Israel (Ass.country), Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia
- ENP/Eastern Europe countries: Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine
- WBC/Western Balkan Countries: Albania, Serbia, Bosnia-Herzegovina, FYROM, Montenegro

3b. Group B: industrialized countries and BRICs

- Australia
- Canada
- New Zealand
- Russia Federation
- S. Africa
- USA

4. Type of the organization /possible partner from INCO' country

- Type of the Organisation/possible partner from INCO's country for possible participation in RI
- Research Centre University
- Private/Industrial sector Other (eg, library), please specify

5. Scientific area of expertise/Thematic area of the possible partner/participant from INCO's country/countries

- Social Sciences and Humanities
- Energy
- Environmental Sciences
- Biological and Medical Sciences
- Physical Sciences and Engineering
- Materials and Analytical Sciences

¹⁴ ENP countries: <http://eeas.europa.eu/enp/>

- e-Infrastructures

Please specify the sub-area/s of the above mentioned Scientific/Thematic Areas

6. In case that INCO country/countries participate in the RI

Which is the status of the participation, in the RI, of the INCO's country/-countries?

- Observer
- Member

- Do you have interest to extend the collaboration with other/more INCO's countries/country? Please specify:
- Please describe briefly your experience of the International Cooperation (including possible added value issues):

7. Type of the possible participation/collaboration (including provision of services) in the e-Infrastructures area

Member Observer

Other type of collaboration/Synergies for mutual benefit, please specify:

8. Impact of the INCO's country participation

Please describe in a short free text the possible impact (the mobility of Researchers, the impact for the region, Comments – Free text regarding INCO's needs

9. Are you going to participate/ do you have interest to participate in an event which will focus on "matching needs" in International Cooperation /INCO for RIs?

In case that you have interest to participate, please specify the type of your attendance:

- Participant
- Speaker
- Participant/speaker in a forum or in a Round Table

ANNEX 2: LIST OF RECIPIENTS (IN RANDOM ORDER)

SHARE-ERIC/Survey of Health, Ageing and Retirement in Europe	http://www.share-project.org
CLARIN-ERIC/ Common Language Resources and Technologies- European Research Infrastructures Consortium	http://clarin.eu
CESSDA AS/ Council of European Social Science Data Archives	http://www.cessda.net
DARIAH-EU/Digital Research Infrastructures for Arts and Humanities-EU	https://www.dariah.eu
EPOS/ European Plate Observing System	http://www.epos-eu.org
Euro-ARGO RI- ERIC/ Global Ocean Observing Infrastructure- European Research Infrastructure	http://www.euro-argo.eu
EMSO/ European Multidisciplinary Seafloor and water column Observatory	http://www.emso-eu.org
EISCAT_3D Upgrade / The next generation European incoherent scatter radar system	https://eiscat3d.se
IAGOS/In Service Aircraft for a Global Observing System	http://www.iagos.org
ICOS/integrating Carbon Observation System Research Infrastructure	http://www.icos-ri.eu
LIFEWATCH/European Infrastructure for Biodiversity and Ecosystem Research	http://www.lifewatch.eu
SIOS/Svalbard integrated Arctic Earth Observing System	http://www.sios-svalbard.org
COPAL/ Heavy Payload Long Endurance Tropospheric Aircraft	http://www.eufar.net/copal
ECCSEL /European Carbon Dioxide Capture and Storage Laboratory Infrastructure	http://www.eccsel.org
EU –SOLARIS/ The European SOLAR Research Infr. for Concentrating Solar Power	http://www.eusolaris.eu
HiPER/ High Power long pulse Laser for “fast-ignition” Fusion	http://www.hiper-laser.org
IFMIF/ International Fusion Materials Irradiation Facility	http://www.ifmif.org
MYRRHA / Multi-purpose hybrid research reactor for high-tech applications	http://myrrha.sckcen.be
Windscanner/ The European Wind Scanner Facility	http://www.windScanner.eu
JHR/High flux reactor for fusion reactors material testing	http://www.cad.cea.fr
ANAEE/Analysis and Experimentation on Ecosystems	http://www.anaee.com
BBMRI/Biobanking and BioMolecular resources Research Infrastructures/ERIC	http://bbmri-eric.eu
EATRIS/European Infrastructure for Translational Medicine	http://www.eatris.eu
ECRIN - ERIC/European Clinical Research Infrastructure Network	http://www.ecrin.org
ELIXIR/ European Life-science Infrastructure for Biological Information	http://www.elixir-europe.org
EMBRC/European Marine Biological Resource Centre	http://www.embrc.eu
Erinha/European Research Infrastructure on High Pathogenic Agents	http://www.erinha.eu
EU-OPENSREEN /European Infrastructure of Open Screening Platforms for Chemical Biology	http://www.eu-openscreen.eu
Euro Bioimaging/ European Research Infrastructure for biomedical imaging	http://www.eurobioimaging.eu
Infrafrontier GmbH Research Infrastructure/ European infrastructure for phenotyping and archiving of model mammalian genomes	http://www.infrafrontier.eu
INSTRUCT/Integrating European Infrastructure for Structural Biology	http://www.structuralbiology.eu
ISBE/infrastructures for System Biology Europe	http://project.isbe.eu
MIRRI/Microbial Resources Research Infrastructure	http://www.mirri.org
EMFL/European Magnetic Field Laboratory	http://www.emfl.eu
ESRF/Upgrade of the European Synchrotron Facility	http://www.esrf.fr
EUROFEL (ex-IRUVX-FEL)/Free Electron Lasers in Europe	http://www.eurofel.eu
ESS/European Spallation Source	https://europeanspallationsource.se/
ILL20/20 Upgrade of the European Neutron spectroscopy facility	http://www.ill.eu
European X-FEL/ Hard X-Ray Free Electron Laser	http://www.xfel.eu
CTA/ Cherenkov Telescope Array	https://portal.cta-observatory.org
E-ELT/European Extremely Large Telescope	http://www.eso.org/
ELI/Extreme Light Infrastructure Research Infrastructure	http://www.eli-laser.eu
KM3Net/ Kilometre Cube Neutrino Telescope	http://www.km3net.org
FAIR/ Facility for Antiproton and Ion Research	http://www.fair-center.org
SKA/Square Kilometre Array (SKA RI – Research Infrastructure)	http://www.skatelescope.org
SPIRAL 2 - Facility for the production and study of rare isotope radioactive beams	http://www.ganil-spiral2.eu
PRACE/Partnership for Advance Computing in Europe	http://www.prace-ri.eu