

Horizon 2020 -> Horizon Europe

Transition of research policies and requirements through the Responsible Research and Innovation (RRI) agenda

The role of UN SDG framework and UNESCO Recommendation on Science and Scientific Researchers

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Horizont Evropa – novi ciklus
Delegacija Evropske unije u Republici Srbiji
22. april 2021.



CENTER FOR
THE
PROMOTION
OF SCIENCE

Center for the Promotion of Science (CPN)



- ❖ Serbia's public institution
- ❖ Founded after the Law on Scientific Research in 2010
- ❖ Part of the strategic development and investment plan in science and research
- ❖ Facilitating dialogue between science and society
- ❖ Supporting knowledge based economy and innovation
- ❖ Science center
- ❖ Center of scientific culture & literacy
- ❖ Financial support for citizen science & science promotion projects

CPN's main activities



- ❖ Large scale events – May Month of Mathematics (M³), Days of Future: Robotics, CERN in Serbia, art+science
- ❖ Belgrade Book Fair – national scientific publications
- ❖ Conferences on science communication, STE(A)M education, art & science, climate challenges etc.
- ❖ *Elements* quarterly magazine & sci-comm publications
- ❖ Program activities across SEE region – Montenegro, Macedonia, Bosnia & Herzegovina, Croatia, Albania
- ❖ Cooperation within the professional associations at European level (*ECSITE*, *EUSEA*, *Scientix*)
- ❖ Focus on climate & AI challenges
- ❖ Participation in EU-funded projects (40 since 2012)



H2020 RRING



- ❖ Understanding of the global State of the Art in responsibility in research
- ❖ Understanding how responsibility may contribute to the achievement of the Agenda 2030 and SDGs
- ❖ Understanding and advocating responsibility in research and innovation as not only a moral value, but also as a competitive advantage for excellence in research and innovation
- ❖ Bring **Responsible Research and Innovation (RRI)** into the linked up global world to promote mutual learning and collaboration in **RRI**



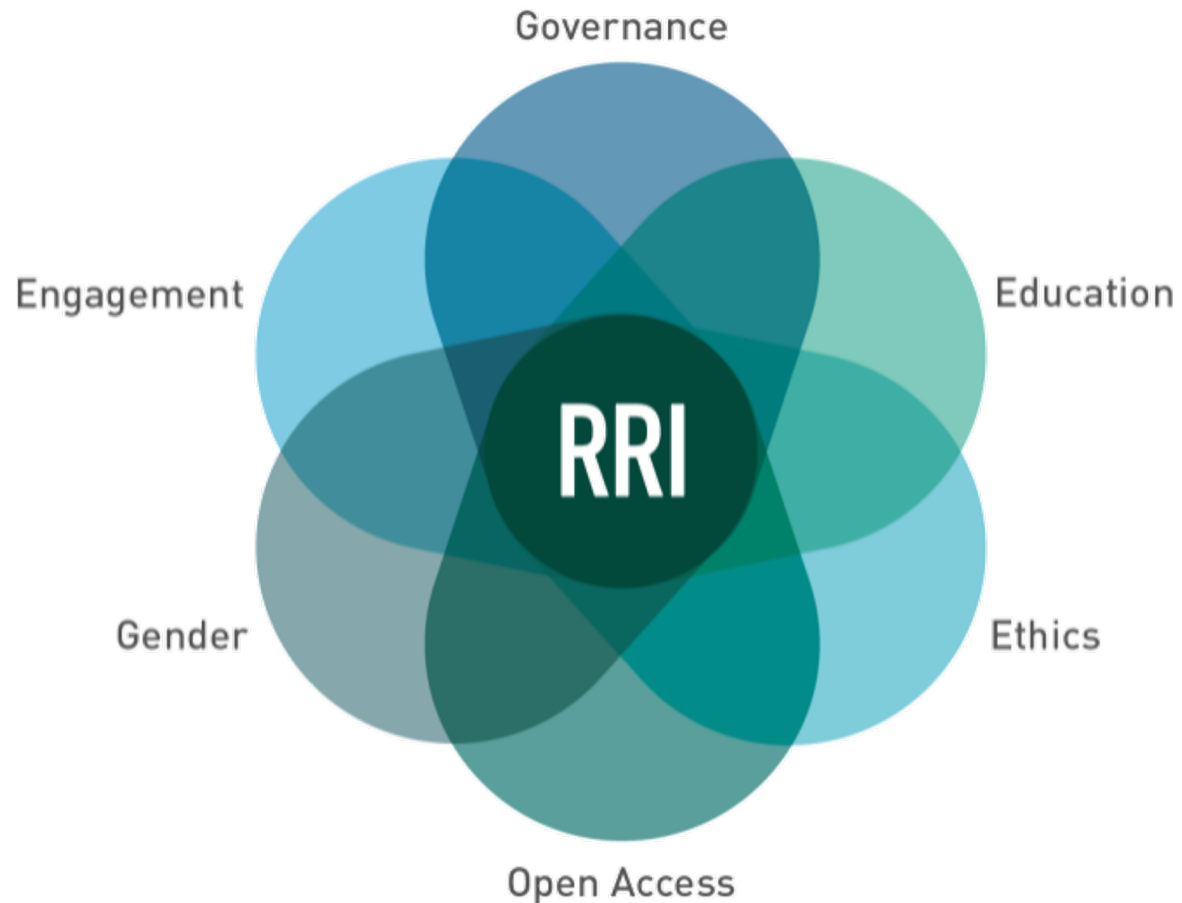
Why RRI at first place?



Horizon 2020 Societal Challenges



What is RRI?

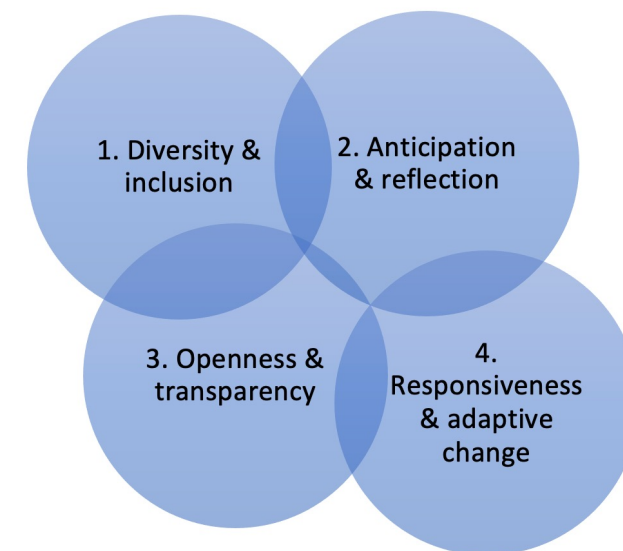


Policy
Framework
through Six Pillars

How to understand & implement RRI framework?



The screenshot shows the landing page of the RRI Tools website. At the top, there is a navigation bar with the RRI Tools logo and menu items: "LANDING ON RRI", "TOOLKIT", "TRAINING", and "RRI COMMUNITY". A user profile icon for "djtmotjevic" is also visible. The main heading reads "Fostering Responsible Research & Innovation" with the subtitle "Towards an open science and innovation system that tackles the grand societal challenges". A central play button icon is positioned above a "WHAT IS RRI?" button. At the bottom of the page, there is a search bar with the text "I am looking for resources" and a "SEARCH IN THE TOOLKIT" button.



rri-tools.eu

The screenshot shows the "Find tailored information according to..." section of the RRI Tools website. It is divided into two columns: "...your profile" and "...your interests".

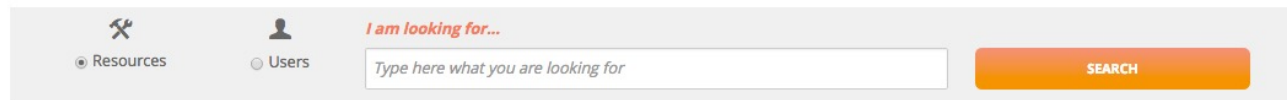
...your profile

- Policy Makers
- Research Community
- Education Community
- Business & Industry
- Civil Society Organisations

...your interests

- Ethics
- Gender Equality
- Governance
- Open Access
- Public Engagement
- Science Education

RRI-Toolkit & Self-reflection Tool



UPLOAD A RESOURCE

Filter resources by:

Type: Tool

- Inspiring Practice
- Project
- Library Element

Useful for:

- Policy Makers
- Research Community
- Education Community
- Business & Industry
- Civil Society Organizations

Address:

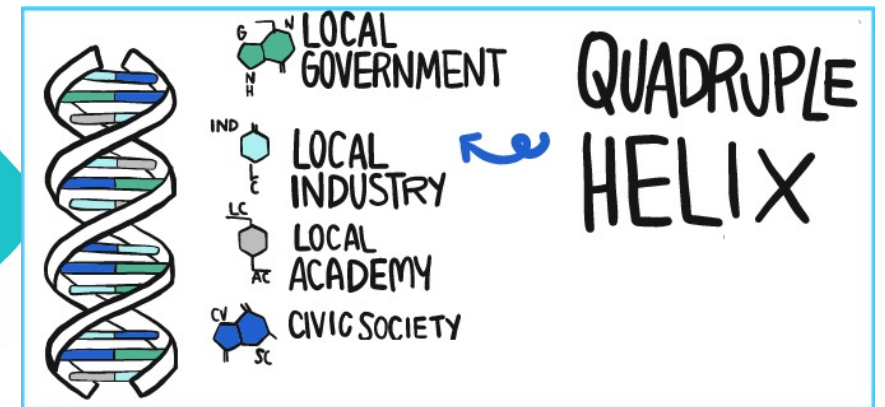
- Ethics
- Gender Equality
- Governance
- Open Access
- Public Engagement
- Science Education

more filters

Showing 1-12 of 423 results

Sort by: Most Relevant

- The Norwegian National RESEARCH ETHICS COMMITTEES**
Tool | 2 likes
The Research Ethics Library
- The Preregistration Challenge**
0 likes
- SJ Toolbox (Social Innovation Journey Toolbox) by TRANSITION project**
Tool | 2 likes
- RESPONSIBILITY Forum**
Tool | 0 likes
- Mind the gap! Multi-stakeholder dialogue for priority setting in health research**
Tool | 1 like
- Creating the applications using VISHUB**
Tool | 0 likes



RRI as a *Science with and for Society* Policy



How to assess it?

SCIENCE AND SOCIETY

2002-06: FP6



SCIENCE IN SOCIETY

2007-13: FP7



SCIENCE WITH AND FOR
SOCIETY

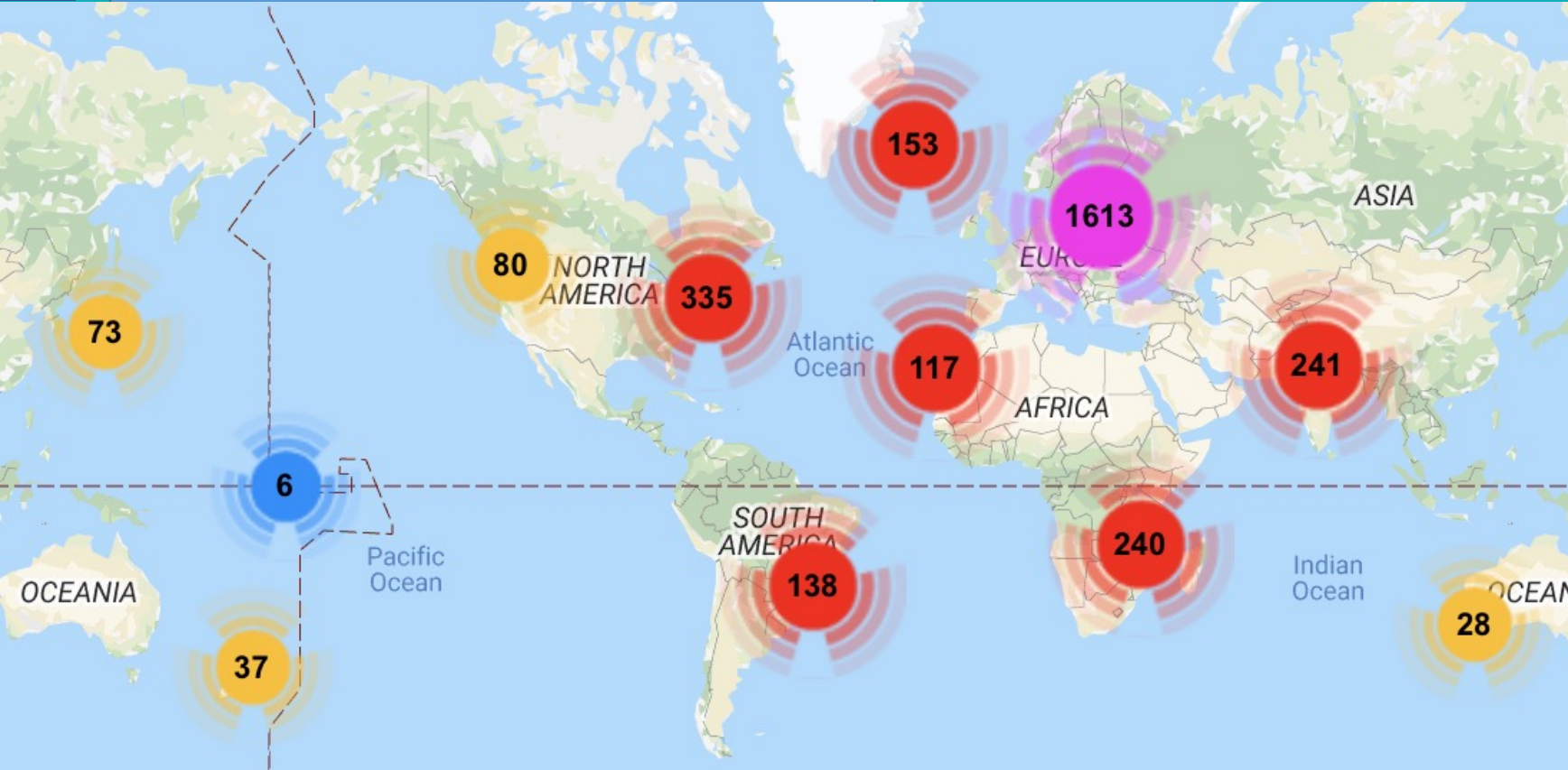
2014-20: Horizon 2020



?

2021-27: Horizon Europe

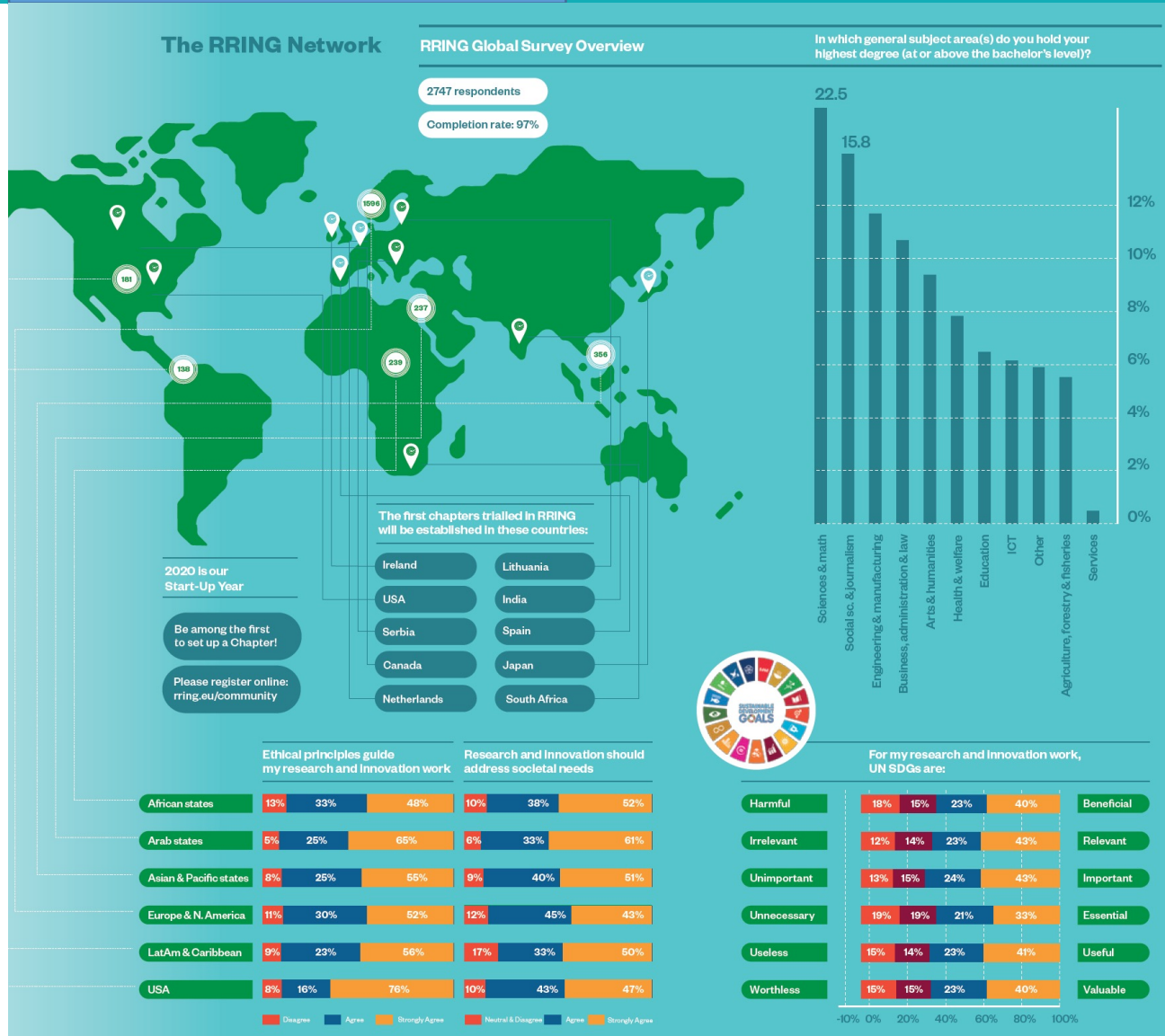
Global Survey on RRI and Practices alike



- ❖ 2198 responses with a completion rate of 70% or more
- ❖ 539 responses with a completion rate of less than 70%
- ❖ 113 interviews conducted across the globe
- ❖ Additional data collection for different purposes

2019 Global Survey of Researchers and Innovators
(overview)

Survey Design

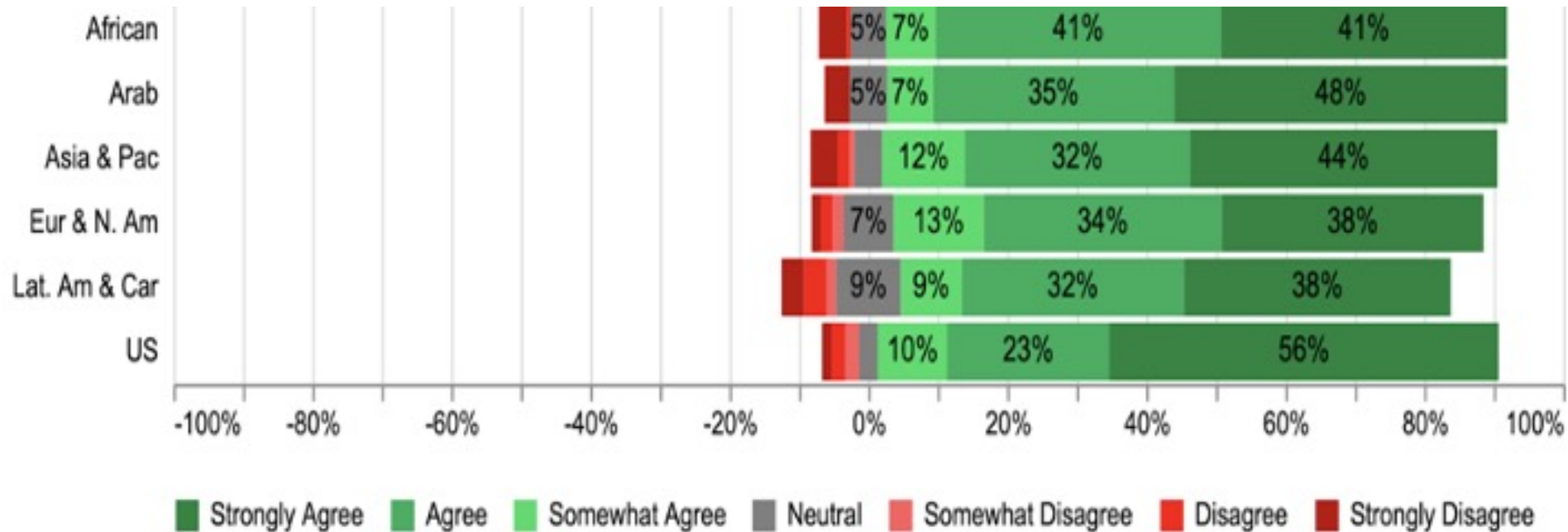


What to measure to understand social responsibility of science?

AIRR Principles

- ❖ Diverse & Inclusive
- ❖ Anticipative & Reflective
- ❖ Open & Transparent
- ❖ Responsive & Adaptive to Change

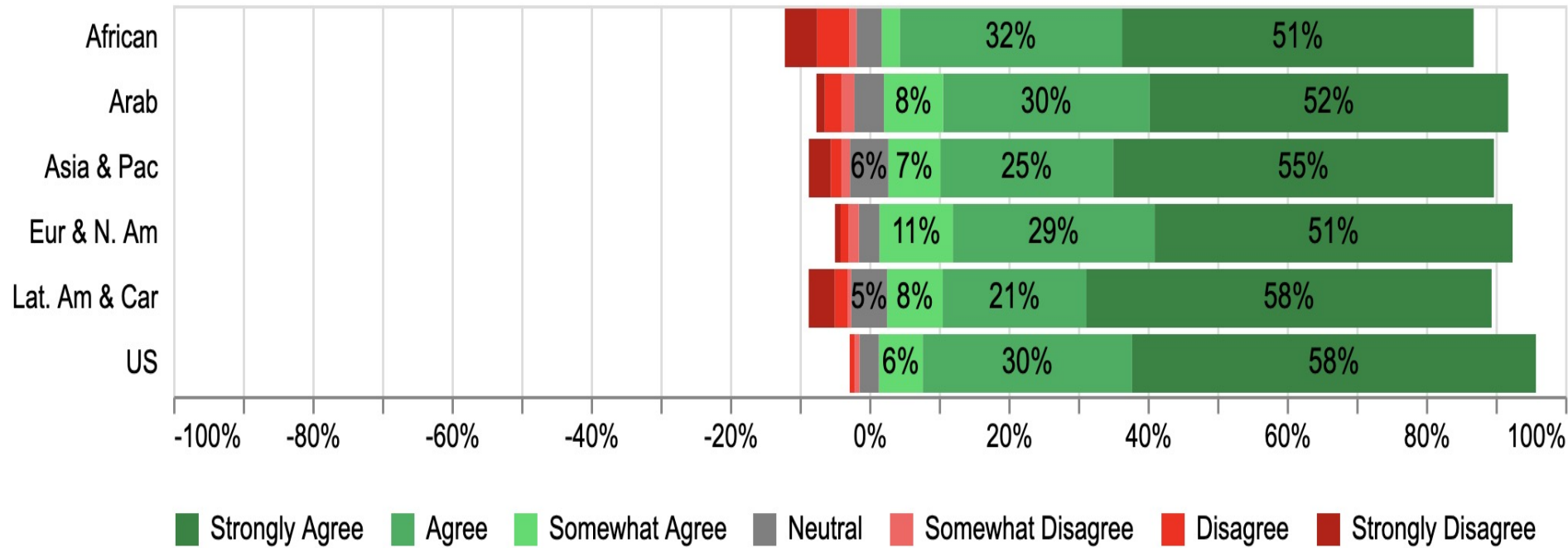
Diverse and Inclusive



'It is important to involve individuals/organisations with a diverse range of perspectives and expertise when planning my research and innovation work.'

- ❖ Mostly similar distribution of agreement
- ❖ US leading slightly with 56% strongly agreeing

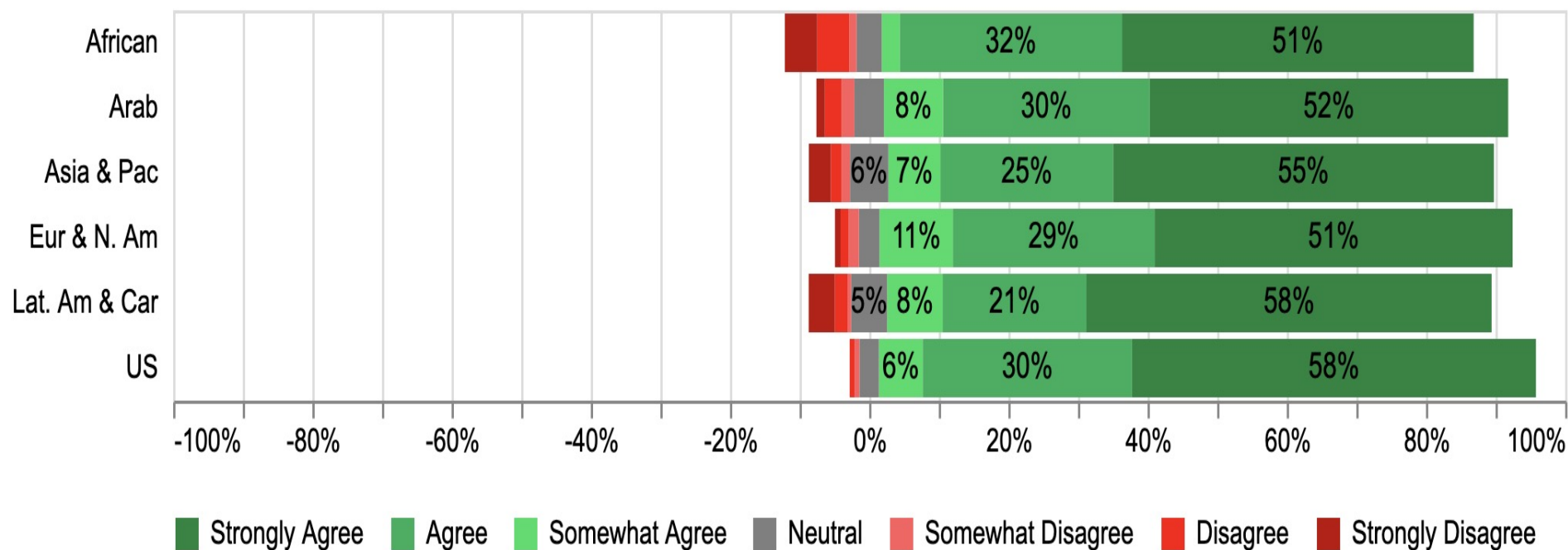
Open and Transparent



*It is important to make the **results of my research and innovations** work accessible to as wide a public as possible.'*

- ❖ Overall sentiment leaning heavily on agreement
- ❖ Highest combined disagreement to the statement across African regions
- ❖ Overall distribution of agreement is similar across regions

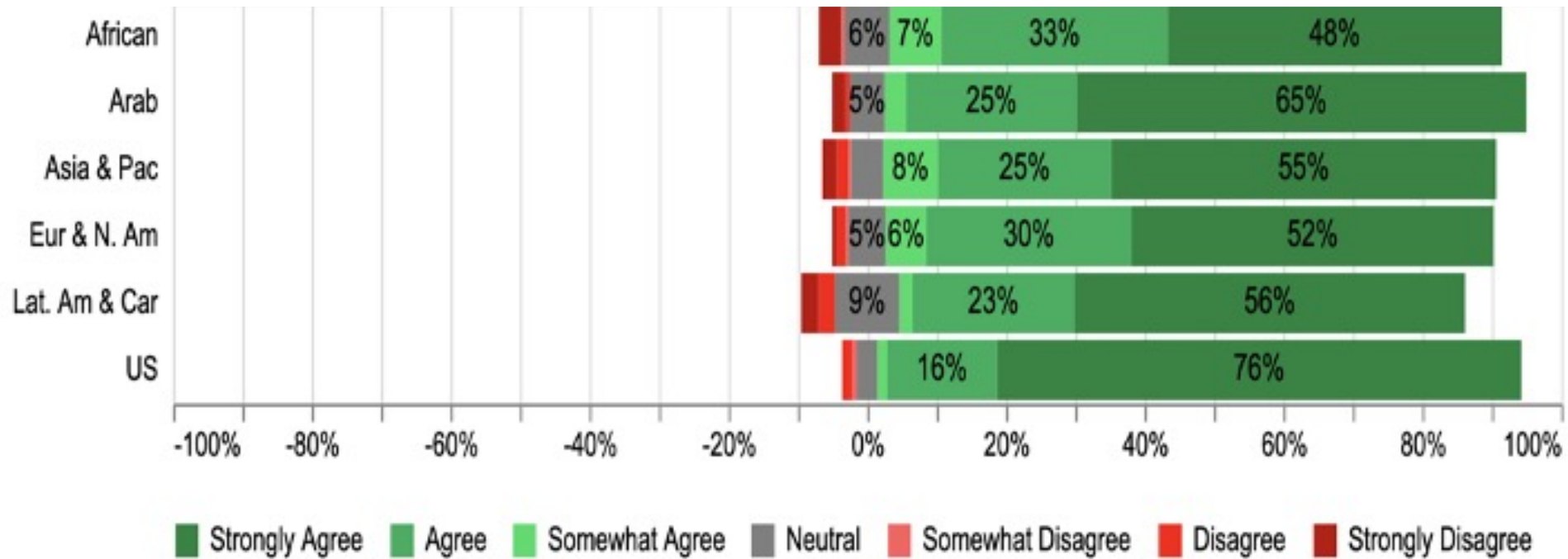
Responsive & Adaptive to Societal Needs



'Research and innovation should address societal needs.'

- ❖ Overall sentiment leaning heavily on agreement
- ❖ Highest combined disagreement to the statement across Latin American regions
- ❖ Arab States leading slightly with 61% strongly agreeing

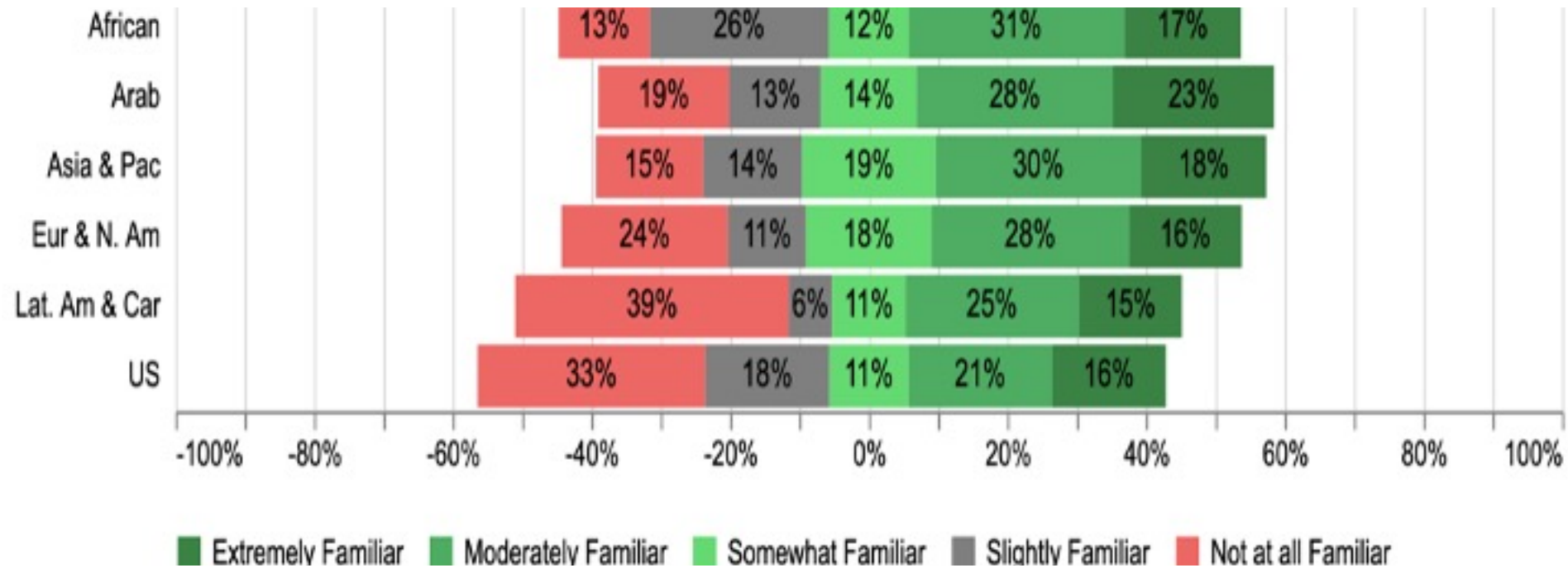
Ethical Principles



'Ethical principles guide my research and innovation work.'

- ❖ Overall sentiment leaning heavily on strong agreement
- ❖ US leading with 76% strongly agreeing

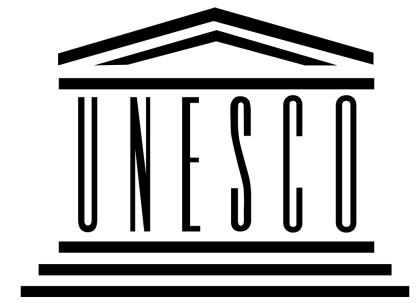
Familiarity with SDG framework



How familiar are you with the UN Sustainable Development Goals?

- ❖ Overall lowest familiarity with UN SDGs in the US
- ❖ Highest familiarity in Arab States
- ❖ 39% of Latin American respondents 'not at all familiar' with the SDGs
- ❖ Most respondents from African regions are at least slightly familiar with the SDGs (86%)

UNESCO Recommendation on Science and Scientific Researchers



The Recommendation was adopted by a consensus of 195 member states in 2017.

10 KEY AREAS:

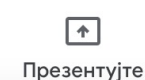
- ❖ The responsibility of science towards the United Nations' ideals of human dignity, progress, justice, peace, welfare of humankind and respect for the environment.
- ❖ The need for science to meaningfully interact with society and vice versa.
- ❖ The role of science in national policy and decision making, international cooperation and development.
- ❖ Promoting science as a common good.
- ❖ Inclusive and non-discriminatory work conditions and access to education and employment in science.
- ❖ Any scientific conduct is subject to universal human rights standards.
- ❖ Balancing the freedoms, rights and responsibilities of researchers.
- ❖ Scientific integrity and ethical codes of conduct for science and research and their technical applications.
- ❖ The vital importance of human capital for a sound and responsible science system.
- ❖ The role of Member States in creating an enabling environment for science and research.

https://en.unesco.org/themes/ethics-science-and-technology/recommendation_science

UNESCO Recommendation: Serbia's Report



- ❖ Working Group (WG) created by the Ministry in Dec 2020, with a technical support provided by the CPN team & RRING project
- ❖ 13 members from the scientific community Ministry and CPN
- ❖ 4 virtual general meetings and numerous bilateral exchanges & discussions, during a period of 3 months
- ❖ Report submitted on March 15, 2021



UNESCO Recommendation: Serbia's Report – Key findings



DASHBOARD SCIENCE TO ADDRESS GLOBAL CHALLENGES [KPA2] NATIONAL STRATEGY FOR PE WITH SCIENCE [KPA2] PE WITH SCIENCE IN LEGISLATION [KPA2] KNOWLEDGE NEEDS [KPA2] PE WITH RESEARCH [KPA2] RESEARCH RESULTS [KPA2] POLICIES INFORMED BY SCIENCE [KPA3] SCIENTIFIC ADVISORY PROCESS [KPA3]

ACCOUNTABILITY IN SCIENCE USE [KPA3] INTERNATIONAL COOPERATION AND DEVELOPMENT [KPA3] SEGMENTS AND DOCUMENTS ONLY [KPA2] SEGMENTS AND DOCUMENTS ONLY [KPA3] ENTRIES

Share Survey Survey Preview My Experiments Export Data & Charts All Charts Sent Emails Add Page

SEGMENTS AND DOCUMENTS ONLY [KPA2]

+ FILTER RESPONSES BY...

National policies supporting the use of science and technology to tackle global challenges

Segments and Documents

National strategy for public engagement with science

Segments and Documents

General requirement for public/societal engagement with science in your constitution, domestic legislation, policy or regulatory frameworks

Segments and Documents

National strategy for ensuring that societal knowledge needs are identified

Segments and Documents

Policies for ensuring that accurately identified societal knowledge needs from society are used to orient research investment in your country

Segments and Documents

Policies for ensuring that members of the general public are engaged through the process of conducting research

Segments and Documents

National strategy for the communication of research results

Response	Question	Date	Answer
899DE95	Segment	2021-01-22 08:20	1: N/A

National strategy for public engagement with science

Segments and Documents

Response	Question	Date	Answer
899DE95	Upload full document	2021-01-22 08:20	https://s3-eu-west-1.amazonaws.com/qa-surveys/system/storage/5f6a2a76e2d56227114bbe81e_gTUjHyOib55fme0TvBtsPredlog-Strategija-naucnog-i-tehnoloskog-razvoja-java-rasprava (1).pdf

- ❖ Well developed scientific environment
- ❖ Improvements in legal and financial framework
- ❖ Low level of public investment in research
- ❖ Important engagement of scientists in critical cases, like the corona pandemic, the construction of hydropower plants in Protected areas etc.
- ❖ Lack of wider public support for the research community
- ❖ Advancing with sci-comm and citizen science practices

Horizon Europe: Vision



A sustainable, fair and prosperous future for people and planet based on European values.

- ❖ Tackling climate change (35 % budgetary target)
- ❖ Helping to achieve Sustainable Development Goals
- ❖ Boosting the Union's competitiveness and growth
- ❖ Overall budget: around 95 billion euros
- ❖ No place for RRI (as such), however...



Horizon Europe: R&I missions



Adaptation to climate change,
including societal transformation



Healthy
oceans, seas,
coastal and
inland waters



Cancer

Relating EU's research and
innovation better to society
and citizens' needs, with
strong visibility and impact

Climate-neutral and
smart cities



Soil, health and
food

Horizon Europe: Structure



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OF SCIENCE



Pillar 1 Excellent Science

European Research Council

Marie Skłodowska-Curie
Actions

Research Infrastructures



Pillar 2 Global Challenges and European Industrial Competitiveness

- Clusters**
- Health
 - Culture, Creativity and Inclusive Society
 - Civil Security for Society
 - Digital, Industry and Space
 - Climate, Energy and Mobility
 - Food, Bioeconomy, Natural Resources, Agriculture and Environment

Joint Research Centre



Pillar 3 Innovative Europe

European Innovation Council

European innovation
ecosystems

European Institute of
Innovation
and Technology

Widening Participation and Strengthening the European Research Area

Widening participation and spreading excellence

Reforming and Enhancing the European R&I system

Horizon Europe: Clusters



Clusters in 'Global Challenges and Industrial Competitiveness'

Clusters	Areas of intervention	
Health	<ul style="list-style-type: none"> • Health throughout the life course • Non-communicable and rare diseases • Tools, technologies and digital solutions for health and care, including personalised medicine 	<ul style="list-style-type: none"> • Environmental and social health determinants • Infectious diseases, including poverty-related and neglected disease • Health care systems
Culture, creativity and inclusive society	<ul style="list-style-type: none"> • Democracy and Governance • Social and economic transformations 	<ul style="list-style-type: none"> • Culture, cultural heritage and creativity
Civil security for society	<ul style="list-style-type: none"> • Disaster-resilient societies • Protection and Security 	<ul style="list-style-type: none"> • Cybersecurity
Digital, Industry and space	<ul style="list-style-type: none"> • Manufacturing technologies • Advanced materials • Next generation internet • Circular industries • Space, including Earth Observation • Emerging enabling technologies 	<ul style="list-style-type: none"> • Key digital technologies, including quantum technologies • Artificial Intelligence and robotics • Advanced computing and Big Data • Low-carbon and clean industry • Emerging enabling technologies
Climate, Energy and Mobility	<ul style="list-style-type: none"> • Climate science and solutions • Energy systems and grids • Communities and cities • Industrial competitiveness in transport • Smart mobility 	<ul style="list-style-type: none"> • Energy supply • Buildings and industrial facilities in energy transition • Clean, safe and accessible transport and mobility • Energy storage
Food, bioeconomy, natural resources, agriculture and environment	<ul style="list-style-type: none"> • Environmental observation • Agriculture, forestry and rural areas • Circular systems • Food systems 	<ul style="list-style-type: none"> • Biodiversity and natural resources • Seas, oceans and inland waters • Bio-based innovation systems in the EU Bioeconomy

Horizon Europe: Widening Participation and Strengthening the ERA



Widening Participation and Spreading Excellence

- ❖ Teaming & twinning
- ❖ ERA Chairs
- ❖ COST
- ❖ Support to NCPs
- ❖ Brain circulation and excellence initiatives
- ❖ "Hop-on"
- ❖ Common understanding: at least 3.3 % of Horizon Europe budget
- ❖ Excellence Initiatives

Reforming and Enhancing European R&I system

- ❖ Scientific Evidence & Foresight
- ❖ Open Science
- ❖ Policy Support Facility
- ❖ Attractive researcher careers
- ❖ **Citizen science, Responsible Research & Innovation**
- ❖ Gender equality

Optimising Strengths & Potential for a more Innovative Europe

Art. 10 - Open Science The approach

- ❖ Open access to scientific publications to be ensured
- ❖ Open access to research data to be ensured in line with principle 'as open as possible, as closed as necessary'
- ❖ Responsible research data management to be ensured in line with FAIR principles
- ❖ Other open science practices to be promoted and encouraged
- ❖ Reciprocity in open science to be promoted and encouraged in all association and cooperation agreements with third countries
- ❖ Introduction of new mechanisms for monitoring and indicators

Art. 35 - Exploitation and Dissemination The modalities

- ❖ Open access to scientific publications obligatory: sufficient IPR to be retained
- ❖ Open access to research data, 'as open as possible, as closed as necessary'
- ❖ Responsible research data management in line with FAIR principles
- ❖ Data Management Plan mandatory
- ❖ possible obligations (in specific WPs) to use the European Open Science Cloud (EOSC) for storing and providing access to data
- ❖ Possible additional incentives or obligations through work programmes for other open science practices

Better dissemination and
exploitation of R&I
results and support to
active engagement of
society

Art. 35 - Exploitation and Dissemination The modalities

- ❖ Pathway to impact / Key Impact Pathways (KIP)
- ❖ Gender Equality Plan (from 2022)
- ❖ Data Management Plan (in accordance with the GDPR)
- ❖ Ethical (self-)assessment
- ❖ Security aspects
- ❖ *Do no significant harm* principle



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Thank you for your attention!

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