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National Research Infrastructure Roadmapping in Europe

Drivers and Trends

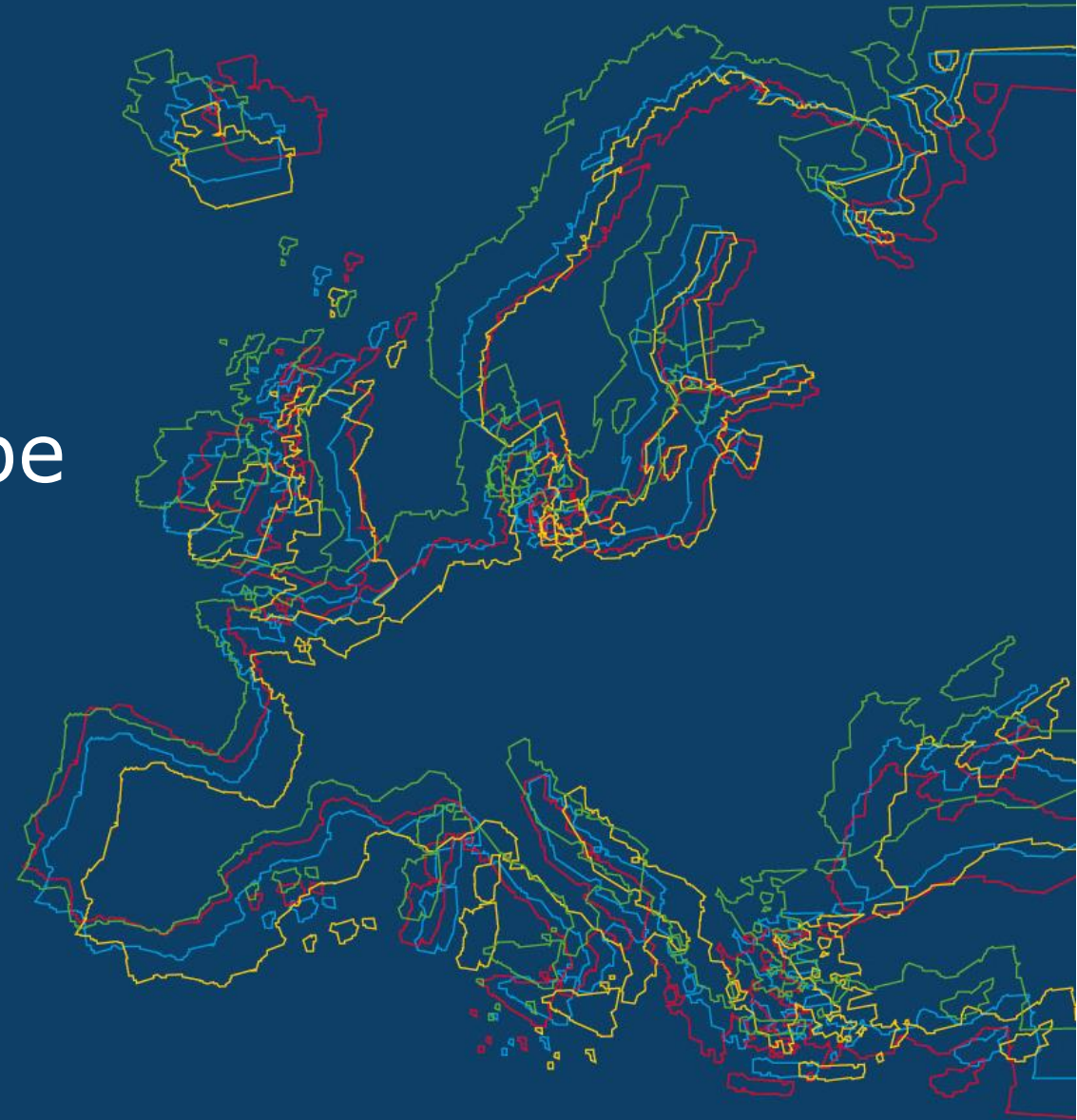
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synchronising research infrastructure
roadmapping in Europe



Content

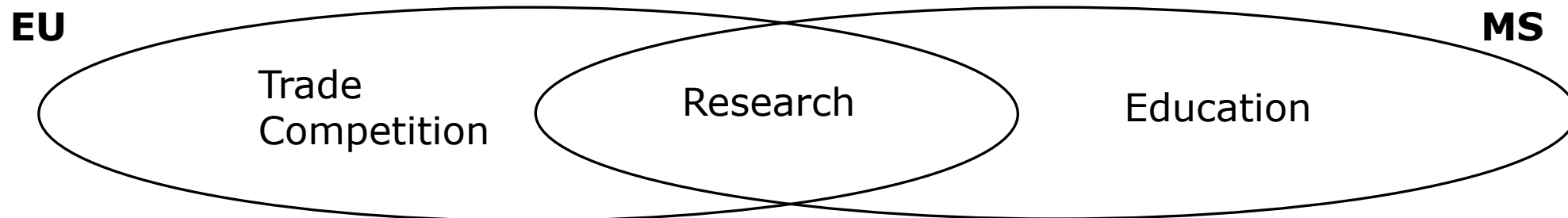
- Research Policy and European Cooperation
- Drivers of Research Infrastructure roadmapping at national level
- Phases of ESFRI and impact on national roadmapping
- Challenges of current Research Infrastructure roadmapping
- Rationale for the future
- InRoad's contribution

Changing Focus of Science Policy

From Research → Technology → Innovation Policy

- Need for more collaboration and a more systematic approach to knowledge production and diffusion
- Emphasis on accountability and collaboration among different actors
- → RI roadmapping results from shift to innovation policy

Competencies within EU treaties



European Research Policy Cooperation

Until '80s → *intergovernmental* cooperation

- foundation for a knowledge-based *economy* (Paris and Rome Treaties)

During '80s → research became *programmed*

- multi-annual research Framework Programmes

Launch of ERA in 2000s

- European research cooperation became more complex and *multi-layered*

Europe 2020 Strategy

- emphasises smart, sustainable and inclusive growth as a way to overcome the structural weaknesses
- → but financial crisis

Drivers for RI roadmapping (1)

ERA

- development and coordination of large-scale research infrastructures as an essential pillar of the ERA
- prioritized the stocktaking of “material resources and facilities optimized at the European level”

ESFRI

- Mandated to develop a coherent and strategic approach to policymaking on research infrastructures in Europe
- Inventory of existing research infrastructures of pan-European relevance as a roadmap
- ESFRI roadmaps has been very influential in modernising national research infrastructure policies and planning

Drivers for RI roadmapping (2)

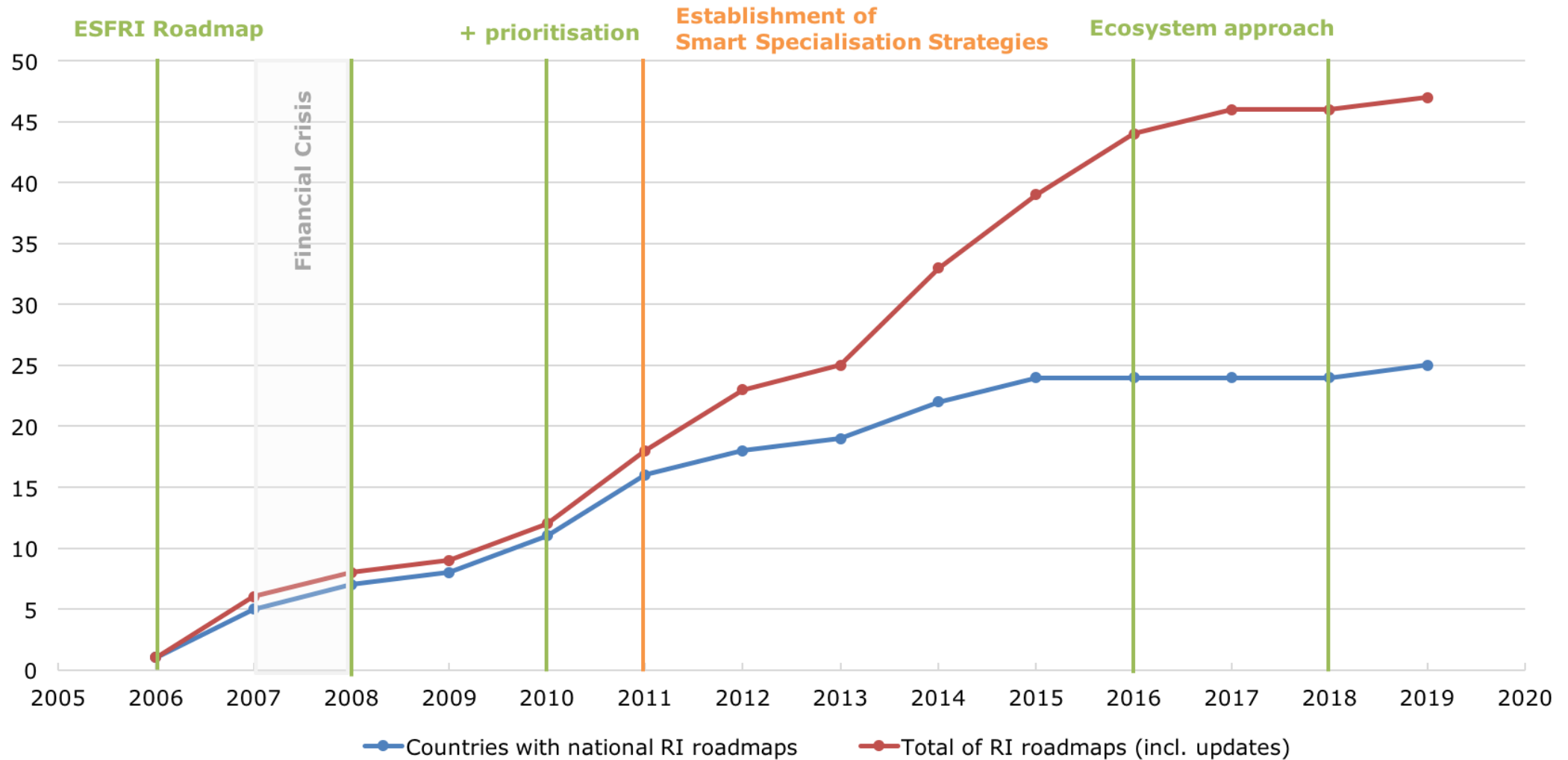
Financial crisis

- Constraints on research budgets
- Need to further prioritize

Research and Innovation Smart Specialisation Strategies (RIS3)/Structural Funds

- focus on identifying niche areas of competitive strength in regions to solve major societal challenges
- emphasizing greater co-ordination between different societal stakeholders
- aligning resources and strategies between private and public actors of different governance levels
- → need to develop strategy

Other Drivers for national Roadmaps



ESFRI as Driver for national Roadmaps

ESFRI	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Bulgaria														
Croatia														
Czech Republic														
Denmark														
Estonia														
Finland														
France														
Germany														
Greece														
Ireland														
Italy														
Lithuania														
Montenegro														
Netherlands														
Norway														
Poland														
Portugal														
Romania														
Slovenia														
Spain														
Sweden														
Switzerland														
United Kingdom														

Phases of ESFRI roadmapping (1)

1st phase: Incubation of projects

- Roadmap 2006
 - List of opportunities → “wish-lists” of RI

2nd phase: Assessment of implementation and prioritisation of projects

Roadmap 2008/2010

- Inventory of RI of pan-European relevance → but still a list of opportunities
- Request of Council for prioritization, 60% of the RM implemented
- Assessment through High-Level Expert Group
- New rules (e.g. max 10 years as project on roadmap)

Phases of ESFRI roadmapping (2)

3rd phase: Ecosystems approach

- Roadmap 2016
 - landscape analysis
 - assessment of implementation AND scientific case
- Roadmap 2018: entire RI portfolio (projects + landmarks)
 - Guidelines with very precise definitions of RI, lifecycle, phases of the lifecycle, etc.
 - Monitoring pilot of landmarks (Scientific impact, good management, global dimension)

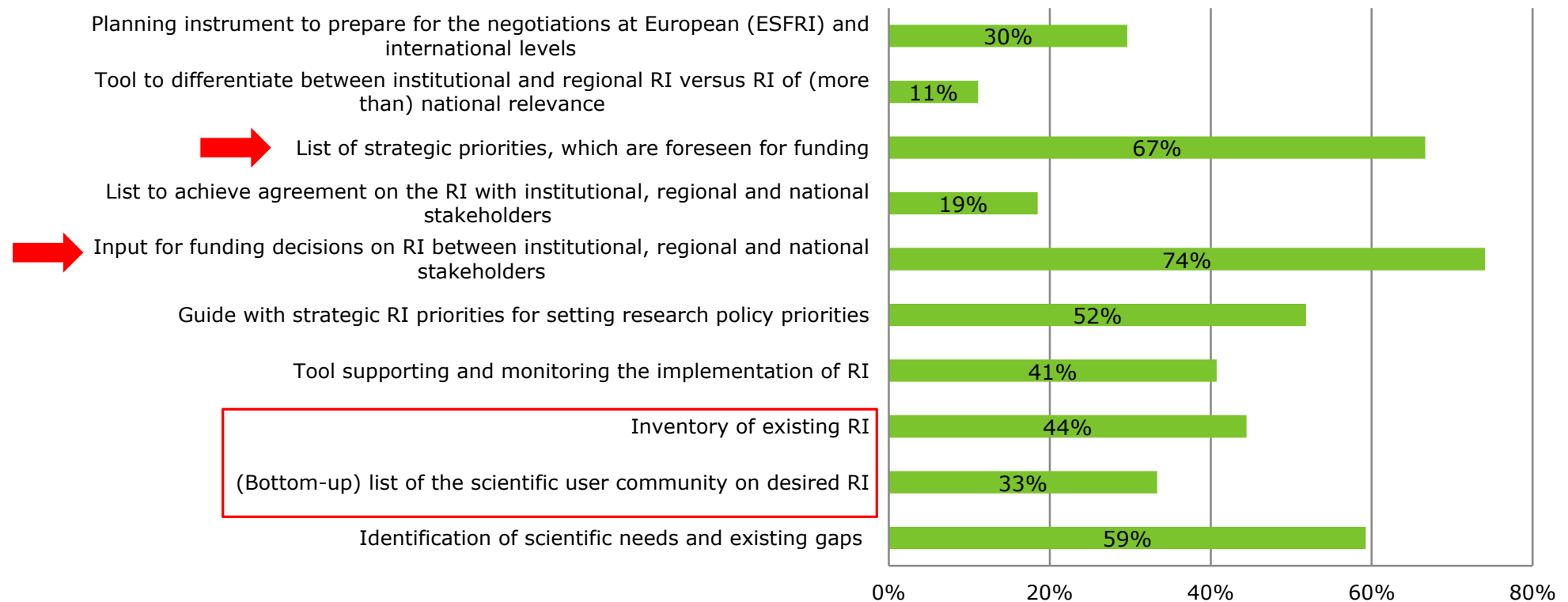
Phases of ESFRI roadmapping (3)

4th phase: Challenges ahead?

- Find sound methodology for monitoring
- Long-term sustainability of RI landscape
- Role of ESFRI/European RI in the global context
- Etc.?

Trends in national RI roadmapping (1)

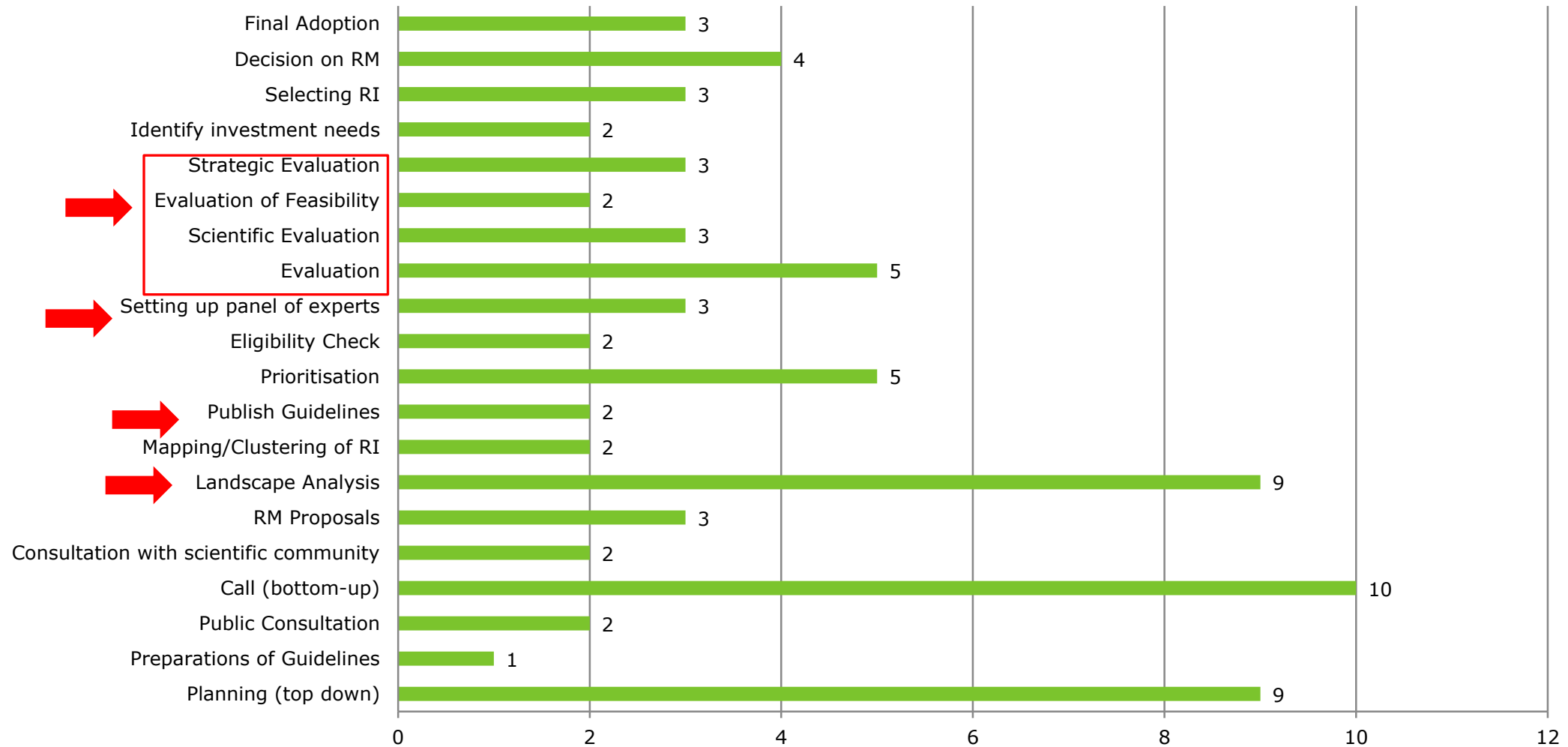
Purpose of national RI roadmapping (multiple responses possible; N = 26)



Trends in national RI roadmapping (2)

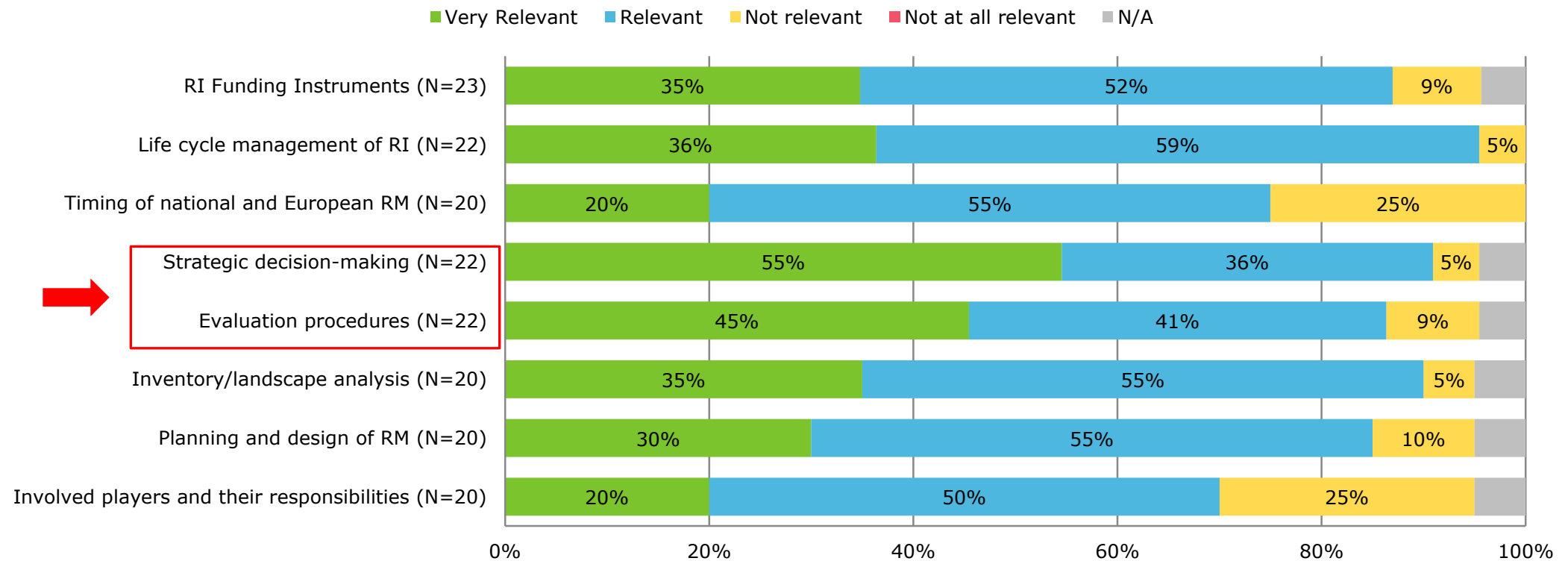


Indicated Steps of the national RI roadmapping (N=27)



Trends in national RI roadmapping (3)

Countries with RM: Interest to learn more



Current Challenges in RI roadmapping

Roadmaps are just tools to implement a strategy

- → a strategy should consider strengths and long-term priorities at institutional, regional, national, European and global levels need to be identified
- → a roadmap should consider the different levels

Strong focus in RI roadmapping on new projects and landmarks (big machines) → challenges sustainability of funding and RI landscape

Alignment of roadmapping at European level vs. respecting *terroir* of RI

Focus on KPI and generic assessment criteria → need to differentiate between quality of RI and scientific excellence (RI are enabler of excellent science)

Growing divide in societies and polarisation in politics → socioeconomic impact not enough, need for better inclusion of society

Accelerating technologization and digitalization → broadening (not only traditional RI) needed “Innovation Infrastructure”?

InRoad's Contribution

Link between roadmapping, funding and RI needs and management

Platform of exchange and mutual learning between different target groups and countries

Identification of challenges and elements of good practice to formulate recommendations

Collection of state-of-the-art procedures

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