EU - BUILDING AN INNOVATION UNION

Europe 2020: vision for ERA

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E*CARE
Caring for researchers' careers

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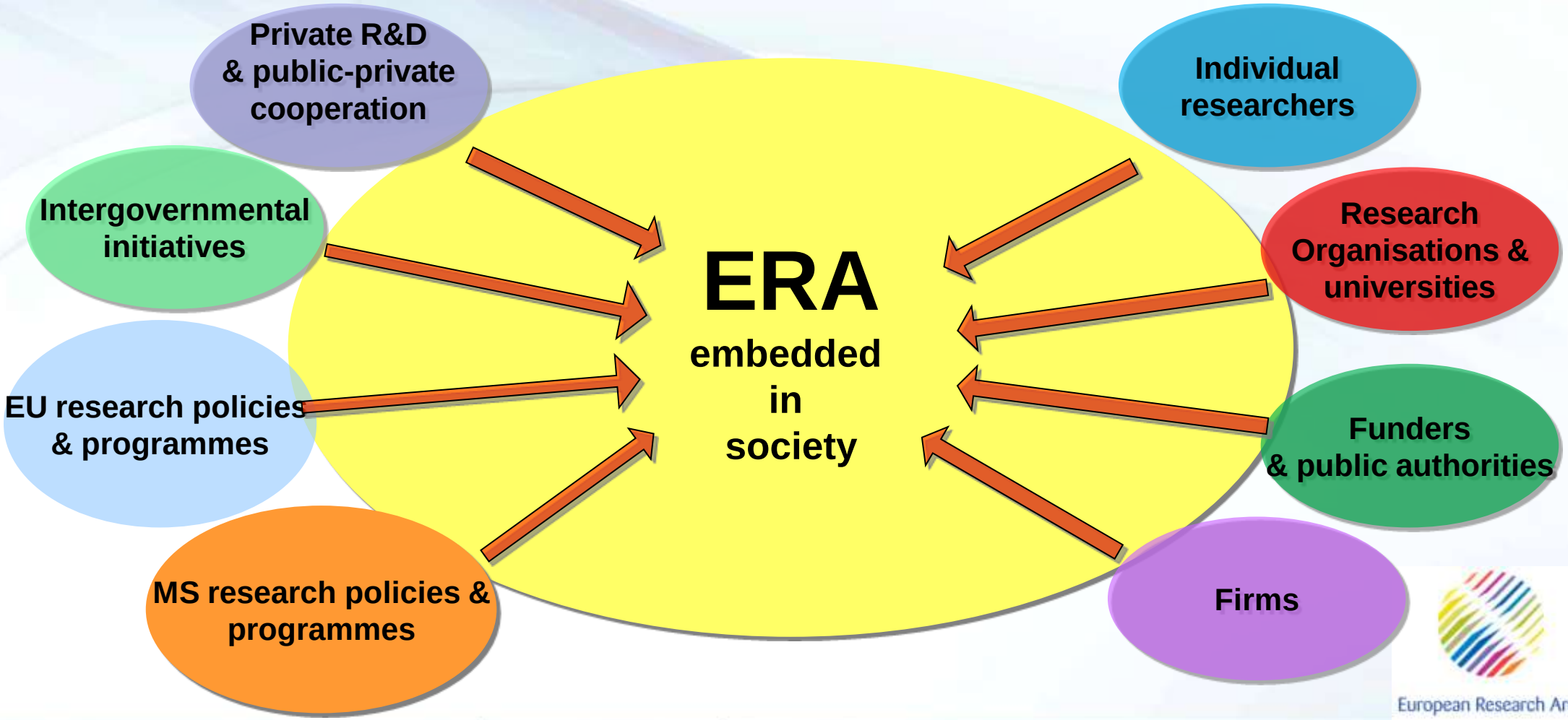
EUROPEAN COMMISSION

Outline

I. What is ERA?
II. What has been achieved?
III. Why is important to complete ERA?
IV. The current context: what is new?
V. The way forward – taking ERA to a new level

I. What is ERA?

ERA is about raising scientific **quality**, innovation **impact**, societal & citizen **relevance** of research in Europe via all forms of **cross-border** synergy



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ERA in concrete terms …

- A single market for knowledge
- Cross-border...
  - ... **flows** of researchers and scientific knowledge
  - ... **funding**
  - ... **cooperation**
  - ... **opening** of national programmes
  - ... **access** to research capacities, infrastructures, results
  - ... **strategies** & **alliances** between research stakeholders
- EU-level governance
  - Transnational & cross-sectoral policy coordination, common priorities, monitoring and evaluation

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ERA Vision 2020

"By 2020, all actors fully benefit from the 'Fifth Freedom' across the ERA: ***free circulation*** *of researchers, knowledge and technology. The ERA provides* ***attractive conditions*** *and effective and efficient* ***governance*** *for doing research and investing in R&D intensive sectors in Europe. It creates strong* ***added value*** *by fostering a healthy Europe-wide scientific* ***competition*** *whilst ensuring the appropriate level of* ***cooperation and coordination****. It is responsive to the needs and ambitions of* ***citizens*** *and effectively contributes to the* ***sustainable development*** *and* ***competitiveness*** *of Europe."*

(Competitiveness Council 2nd Dec 2008)

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II. What has been achieved?

ERA key milestones

2000	ERA & Lisbon Strategy
2002	6th Framework Programme & 3% target
2003	3% Action Plan & Open Method of Coordination
2007	ERA Green Paper & 7th Framework Programme
2008	European Council: 5th freedom
	Council: Ljubljana Process & ERA 2020 Vision
2009	Lisbon Treaty
2010	Europe 2020 & Innovation Union
2011	European Council : complete ERA by 2014

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ERA instruments

Funding	• Direct FP funding ➢ Collaborative research (€19 Bn FP7 so far) ➢ Marie Curie actions (€1.7 Bn) ➢ SME support • Delegated/externalised: ➢ European Research Council (€2.9 Bn) ➢ Public Private Partnerships (3) & Joint Technology Initiatives (5) ➢ Risk Sharing Finance Facility (€7 Bn) • Joint Research Centre
Coordination / optimisation	• ERA Partnership initiatives & Open method of coordination • ERA-NETs (€340 M) & Art.185 Initiatives • European Technology Platforms
Legislation	• Third country researchers Directive 2005/71 • Researchers' labour market related legislation • Competition and internal market related legislation • Regulation for European Research Infrastructure Consortium

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The five ERA partnership initiatives

1. European Partnership for Researchers
   - National Action Plans + other EU initiatives
2. Research infrastructures
   - 1st ERIC status Mar 2011, 10 (+16) ESFRI projects
3. Joint Programming
   - 4 launched 6 more selected in 2010
4. Knowledge sharing
   - Some changes in national legislation
5. International cooperation
   - Pilots India (water), USA (energy) & China EU-Africa S&T policy dialogue

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Overall evaluation of progress

- Good & promising initiatives: ERA partnerships, ERANETs, ERC, ...
- Need for ERA acknowledged by stakeholders
- But overall progress slow and piecemeal
  - Unclear rationale, operational objectives, expected outcomes and impacts, indicators
  - Few and weak systemic links between MSs & EU – MSs
  - Obstacles to openness, free circulation & under-exploitation of cross-border actions
  - Perception of a fragmented & complex patchwork
  - Limitations of voluntary approach
  - Benefits to MSs of ERA unclear

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III. Why is important to complete ERA?

If EU is left behind on innovation it will also be left behind economically

Size, **performance**, **efficiency** & **integration** of the EU's research system incommensurate with the smart growth and jobs ambitions of the Union

European research needs to be:

BIGGER

- More R&D investment (2.01 % of GDP; shrinking global share)

BETTER

- Raise critical mass, efficiency, quality & consistency with other policy areas

BOLDER

- Calculated risks – co-ordinated foresight-based prioritisation of new fields

BRIGHTER

- Smart strategic choices to help solve the Union's economic, social & environmental challenges

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Lower S&T quality ...

- US mean citations 27% higher than EU (all fields except **energy** and **space**)
- Highly-cited papers (world top ten percent) : US 15.3% EU 11.6%
- University rankings: US dominant in top 100, top 30 & top 10
- EU strong: agri, chem, phys, engineering
- EU weak: ICT, nano, biotech, molecular bio, genetics (biggest lags w.r.t. US)

... means less science-based business & innovation

- BERD 1.25 % GDP (US 2.01%); Triadic patents 25% (US 35%); Med-high-tech exports 47% (US 59%)
- IT revolution EU a follower; EU biotech sector ½ that of US; EU nanotech also lagging
- Less new technology-based firms / young leading innovators in Europe
- Negative balance in EU ⇔ US private R&D investment flows

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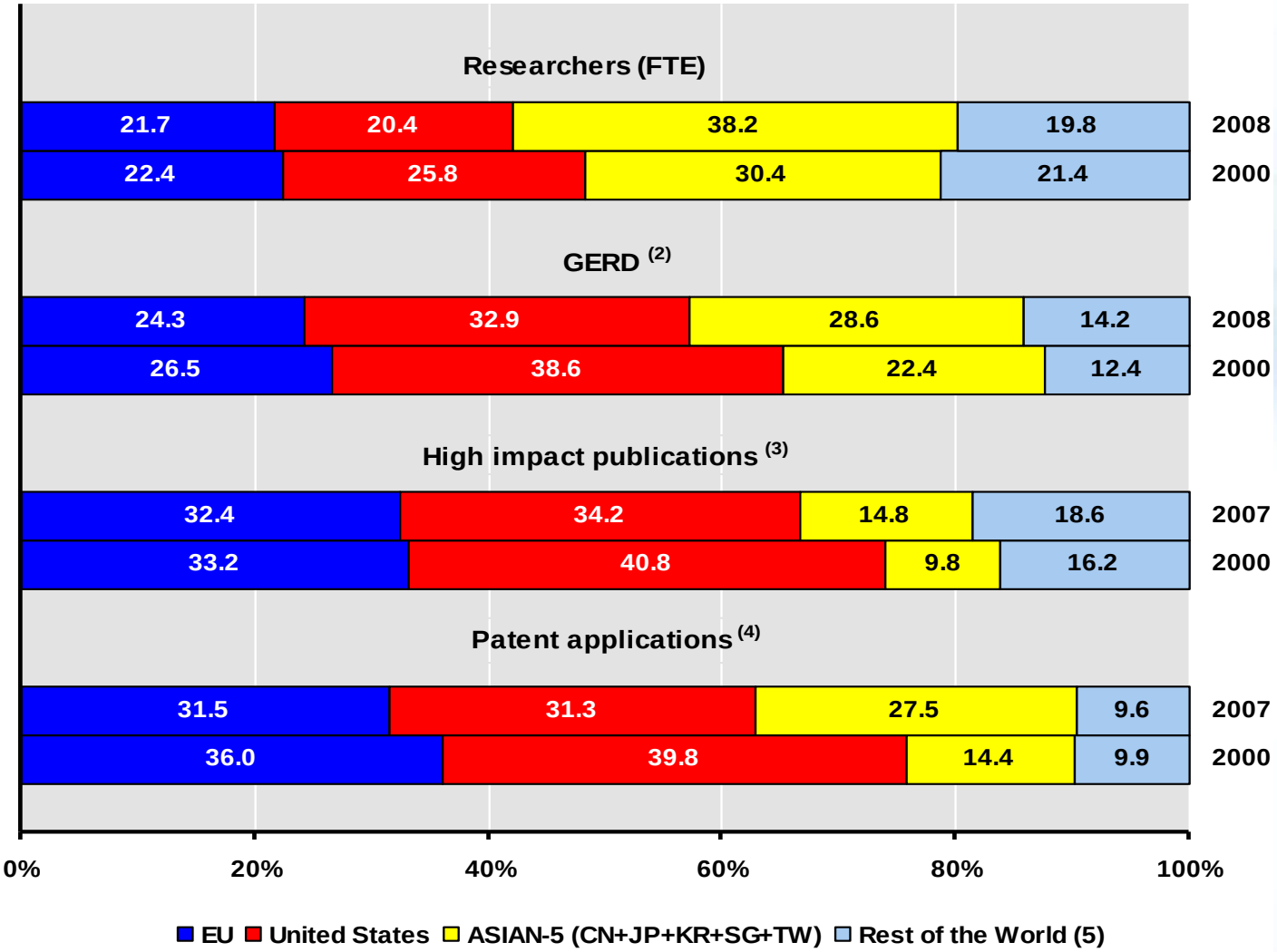
EU's research and innovation competitiveness has declined over the last decade

Figure 3 Participation in global R&D - % shares [1]



Source: DG RTD, Innovation Union Scoreboard, 2010

Data: Eurostat, OECD, UNESCO

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Innovation Union Competitiveness Report 2011

published 9th June 2011 - http://ec.europa.eu/research/innovation-union/

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- Europe's competitive position in research and innovation
- Part I: Investment and performance in R&D – Investing in the future
- Part II: A **European Research Area** open to the world
- Part III: Towards an innovative Europe — contributing to the Innovation Union
- Smarter policy design - building on diversity
- Country review of EU Member States and Associated countries

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IV. The current context: what is new?

Politically ...

- Fiscal austerity & innovation gap
- Knowledge at core of Europe 2020
- European Council Feb 2011 *“complete ERA by 2014”*
- Innovation Union *"an ERA Framework and supporting measures to remove obstacles to mobility and cross-border co-operation”*

Legally, the Lisbon Treaty ...

- ... makes ERA an explicit objective of the Union

  “The Union shall have the objective of strengthening its scientific and technological bases by achieving a European research area (…)” (TFEU Art.179)

- … gives the Union legislative powers to reach this objective

  … shall establish the measures necessary for the implementation of the European research area (TFEU Art. 182.5)

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V. The way forward – taking ERA to a new level

Towards an ERA Framework

Evidence-based approach (*ex ante* Impact Assessment)

- Substantiate **obstacles/problems,** their size, importance & **underlying causes**
- Principles of **proportionality**, **subsidiarity**
- Map how **research in the MSs is** regulated

Options:

- Funding, soft-law, regulation
- Overarching, issue-specific or both
- Assess **benefits and costs**, and all significant **impacts**
- Only consider policy options after problem analysis

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ERA Framework content & structure

- Set overall ERA architecture - definition, objectives, principles, measures
- Address **cross-cutting** & **thematic** co-ordination and systemic failures

Note:

- Relevance to business: knowledge transfer & circulation, inter-sectoral mobility, attractiveness factors (HR & scientific quality, RIs, open innovation, clarity of policy strategy, …)
- Importance of CSF & other parts of the IU

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Cross-cutting obstacles

Governance problem central – lack of political will to use instruments, EU perspective not taken into account nationally, benefits of ERA to MS not clear enough

- **Tension:** international nature of science vs. the largely national political framework
- **Different perspectives & interests to reconcile:** researchers, research organisations/ universities, funders / MS, businesses
- **Few & weak systemic links** between Member States and EU-Member States research policies
- **Barriers** to openness, free circulation & cross-border operations
- **Uncoordinated piecemeal policy** resulting in a patchwork of initiatives
- Lack of clear **definition & objectives** for ERA

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Theme-specific obstacles: researchers

Problems:	career attractiveness/ employment conditions, cross border & intersectoral mobility
Size:	many researchers are civil servants with rigid career pathways, low salaries compared to US
Research impact:	retaining talent; average quality of scientific output
Economic:	potentially labour market less international & fewer innovation outputs
Current initiatives:	Some good but uneven progress; danger of divergence

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Theme-specific obstacles: cross-border operation

Problems: cross-border pooling or funding to tackle major challenges; cross-border research with national funds; incompatibilities between systems, rules, definitions, priorities, etc.

Size: Difficult to estimate – 4.5% coordinated cross-border

Research impact: sheltered research less innovative; EU centres of excellence not emerging

Economic: potential missed opportunities to attract talent & investment; duplication

Existing initiatives: Some progress but political unwillingness/ inability to fund & align objectives/ criteria

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Theme-specific obstacles: research infrastructures

Problems: potential of existing RIs not exploited; slow/ complex development of new RIs

Size: estimated access potential >> the present FP level (6500 per year); X7 rise in RI data by 2020

Research impact: untapped potential to raise efficiency (incl. via e-science)

Economic: untapped spillovers from RI use; direct impact of large RIs

Existing initiatives: good progress (funding access & ERIC) – slow progress on new RIs

Theme-specific obstacles: knowledge circulation

Problems: lack of national strategies & conflicting vested interests on open access; access to /use of public research results by business & level of business-public R&D co-operation

Size: 10-20% articles via open access; joint Public-Private publications in EU 50% of US

Research impact: to be determined

Economic: to be determined

Existing initiatives: uneven progress & scattered national initiatives

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Theme-specific obstacles: international dimension

Problems: under-exploitation of EU potential; disconnection between EU & MS policies & programmes; lack of critical mass for coordinated/ joint EU-MS initiatives; insufficient sharing of info. & dialogue

Size: quantification difficult

Research impact: patchy evidence - unattractiveness of EU as international partner

Economic: missed opportunities to attract investment, access knowledge, and markets (public & private) in 3rd countries

Existing initiatives: SFIC raising awareness of importance – reluctance of MS to participate actively

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Timing

ERA Framework and supporting measures announced for 2012

- Present: problem analysis & pre-consultation discussions
- Public stakeholder consultation: **Sept - Nov 2011**
- Consultation wrap-up event: **early 2012**
- Finish Impact Assessment: **Spring 2012**
- ERA Framework Commission Proposal: **mid 2012**

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Thank you for your attention!

http://ec.europa.eu/research/era

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