



Conference overview

Making European research perform better, and improve education and innovation along the way



Nature of overview

- Collect broadest consensus? No
- Instead select from discussions and the '257' suggestions for actions and questions, limited number of key actions to work on
- No (very few) questions, but answers, including uneasy consequences
- Abstain from using metaphors: no ecosystems, no grand challenges, etc
- Crucial to engage society at large on where to go; but don't mix with actions to clean the institutional house in which companies, universities, research institutes have to operate in Europe



Research, Education, Innovation

- R,E,I inextricably linked; – through institutions, but in first place through people – enter Human Resources
- Experience: capacity to act and act fast of ‘EU-MSs’ constellation not extremely great
- Instruments to address e.g. R or I are usually different
- Hence, without loosing sight of broader picture, judicious selection of set of coherent issues to tackle in context of turning Europe into a place where
 - Research performs better, and education and innovation along the way
 - Students, researchers, knowledge-based companies, institutes experience as little obstacles as possible to move and to cooperate or compete
 - All the necessary things to be done at a European level, are done at that level
 - Europe speaks to the outside world in those matters with one voice, of the Commission but it can be the ERC, or CERN, or ESA, or the ESF or others as well
 - Students and scientists from outside Europe want to come to
 - The benefits of intra-European collaboration don’t go to the detriment of possibly more beneficial extra-European collaborations
 - Society at large, and the private and public actors realise that research, technologies and innovation are cornerstones of our future
- **Aka ERA, but it is simply Europe with a high ambition.**



Europe, nations and regions

- Debate on European STI policies had become too ‘mechanistic’ (FP4, 5, 6,..): bit more money, some new instruments, more objectives. ERC showed that a more fundamental approach is possible. Will be pursued later
- Cohesion had become a second stumbling block: no longer cohesion as GDP convergence between countries and perhaps regions, but cohesion as ‘copy catting’.
- Instead: geographical proximity for strong S&I performance, as well as specialisation lead to widely different S&I potential for regions. Europe better off if politicians and the scientific community accept this.
 - *High S&I ‘potentials’ not only in EU-15, or NW*
 - *Many other development concepts possible*
- Implication: using Structural Funds to strengthen regions’ S&I potential is very valuable, but don’t prescribe fixed percentage.



Intra- and Extra-European collaborations

- Focus on ERA should not aim to substitute intra-European collaborations for extra-European collaborations which may be more beneficial. Remove barriers to intra-European collaborations, but leave it to scientists and institutions.
- Sharing of knowledge openly and widely has been stressed as effective and efficient strategy
- EU/European level lead preferably commensurate with tasks naturally to be carried out at European level (ITER!). But then: science is part of the package in (re)presenting Europe politically.



Making science 'Chefsache'

- At national and EU level progress in crucial areas requires cooperation with other policy domains, hence recognition that S&I are at heart of future-oriented policies
 - National increases in funding
 - Gender rebalancing (school schedules,..)
 - Transferable social security and pension schemes
 - Working on R, E, I in concertation
 - Increased EU funding: CAP reduction + CAP-like restructuring of national funding systems
 - European Patent
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- Important challenge for Ministers, Commissioners, Parliamentarians responsible for STI therefore is to seek coalitions: the Lisbon/Barcelona goals were 'Chefsache'. So must be their implementation.



Education and Human Resources

- **Closing gap between children and science.** Beautiful examples in primary and secondary schools and science. Pursue vigorously
- **Reforms of educational content** at all levels needed; at tertiary level: entrepreneurship, science and society, skills for modern knowledge-based organisations
- **Shortages on labour market.** Real shortages exist/will exist (private, public labour market)

Part of ERA Action Agenda

- **Women and science:** they are out there. Unorthodox measures: doubling salaries? Not only equal opportunity, but positive action, also for career breakers, returnees
- **Reform university system:** more diversity (mission, quality, regional role, ..), concentration, autonomy (+ accountability and performance-based incentives; governance/management)
 - Europe has far too many 'would-be' research universities. Consider to become undergraduate college
 - Recent Bruegel policy brief: autonomy correlates with quality
- **Research careers; immigration**

Member States are in driver's seat!!



Innovation

Given right conditions European company will invest

- Private investments in R&D greatly varying (chemistry 1% - 16%): target reflects 'considerably more' rather than 'exactly 2%'
- Increasing private investments hinges crucially on conditions for making companies grow in Europe, not elsewhere
- Innovative, unique lead markets
 - Public procurement
 - Regulatory arrangements
 - Standards and technology requirements (can we somehow emulate US mission-oriented Agencies – Energy, Defense, Agriculture, Environment, ..?)
- Tax incentives

Part of ERA Action Agenda

- European patent (with grace period, or equivalent provisional application)
- ASAP (Simple, Soon=Fast) PPP constructions, European and national level: 'JTIs'
- Agree on practical rules for 'allowable state aid' for FP7 (cf Industry proposal)
- Introduce equivalent of US SBIR (Small Business Innovation Research Programme)



Research: the European level

What needs to be done at European level?

- ERC: increase budget substantially
- 'JTIs' to address measurable, achievable technology challenges for industry and society (**missions**) to give European society and industry a lead:
 - Almost at finish with first three; learn!
 - Too slow
 - Too complicated
- Research infrastructures
 - Central funding is the crucial problem: 500+ M€/y for 40% of investments and operational costs (not through competitive project funding); use budget surplus to bridge gap to new Financial Perspectives
 - ESFRI: develop scheme to integrate national funding agencies and governments to agree on priorities and decision mechanism
- SBIR

Very good 1st approximation; why not forget about the rest? Focus on core business

Work on special accountability regime for research that balances costs and risks



Research: coordination of national activities

Performing research is competitive activity based on critical mass and excellence

Funding and policy system is fragmented: research councils, direct funding of universities and institutes, innovation promotion schemes, many national policies, etc. How serious is this?

1. Nothing wrong with

- innovation promotion schemes
- direct funding of core costs of universities and institutes (some of which may serve national applied function)
- Individual governments must consider how to support institutes and universities as autonomous actors on a European and global R&D and education market (which may lead in natural way to mergers and acquisitions, joint ventures etc). They can play natural role in JTIs, Research Infrastructures, ERC. Advanced example: association of major European aerospace labs.
- Need for exchange of information (good practices) rather than coordination.

2. Research councils do face a problem: quality and duplication. A larger council can inherently do a better job. Options

- Focus on limited number of areas
- Cooperation in practical areas (joint peer review, transferable grants, bilateral or trilateral programmes, ESF/EUROHORCS schemes)
- Incentives to transfer funds to ERC or ERCs



Research: coordination of national activities; cont'd

3. Coordination of national STI policies

- Yes, and coordinated by EU, as regards transferability of student loans, social security and pension schemes; patents; ...
- Yes, and coordinated by EU, as regards exchange of good practices
- Yes, bi- trilaterally, to support strong cross-boundary regions
- Common long-term visions? Common long-term strategies, apart from agreeing to do at EU level with adequate budgets what can be much better done at European level? ERC, or even ESF can eventually put forward 10-year outlook on life sciences. Why try to coordinate individual visions of 30+ research councils or academies?

4. Many instruments for coordination and joint programming have been created. “Why are they not successful?”

- “Some good examples exist; so they can work” is not good enough answer
- Aren't we too keen on coordination without identifying the specific benefits and without disregarding the high transaction costs?

5. Stimulate self-coordination, self-organisation of key stakeholders

- Much to be gained for EU and national governments to invest in self-coordination by groups of stakeholders key to addressing a particular change. Examples
- JTIs
- Aerospace laboratories
- Alliance for Permanent Access to Digital Records of Science for creating a European



Featuring soon

- Member States
- Commission