



# Annamária Inzelt Stocktaking

1st Workshop of the ESF MO Forum  
on Evaluation: Indicators and  
Internationalisation

Stockholm, 10 & 11 May 2010



# TARGET: KNOWLEDGE-BASED, *INNOVATIVE* EUROPEAN ECONOMY

- Need of knowledge integration for
  - Improving European knowledge production, innovativeness, and
  - Economic and Social Welfare in Europe

Among the tools are: Europeanization and Internationalisation

## *Assumptions:*

- More and better international activity  greater impacts.
- There is a huge potential in coordinating and pooling activities across several nations in EU
- *Clear analytical basis and strong indicators can provide systematic basis for policy discussion and evaluation*



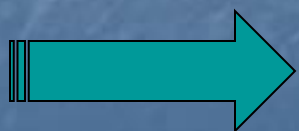
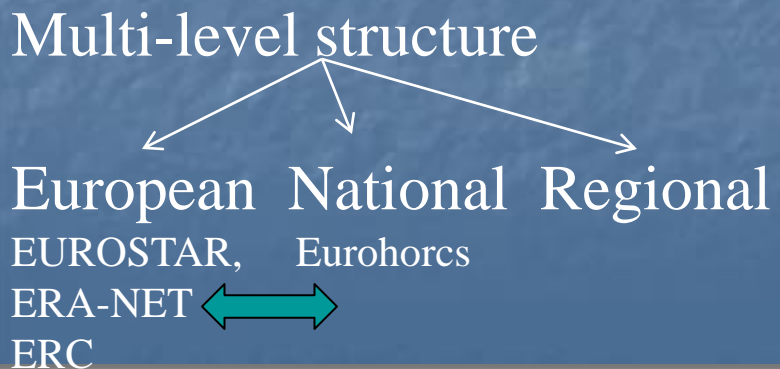
# Challenges for European Research and Research Funding System

Develop international and 'European' strategies by research policy administration – joint agenda setting

**Facilitate internationalization & Europeanization of research activities by *research funding organizations***

**Internationalization & Europeanization of research performing organizations** (HEIs, PROs)

- collaborative research – co-production of knowledge
- mobility of researcher (brain circulation)
- attract in Europe excellent scientists

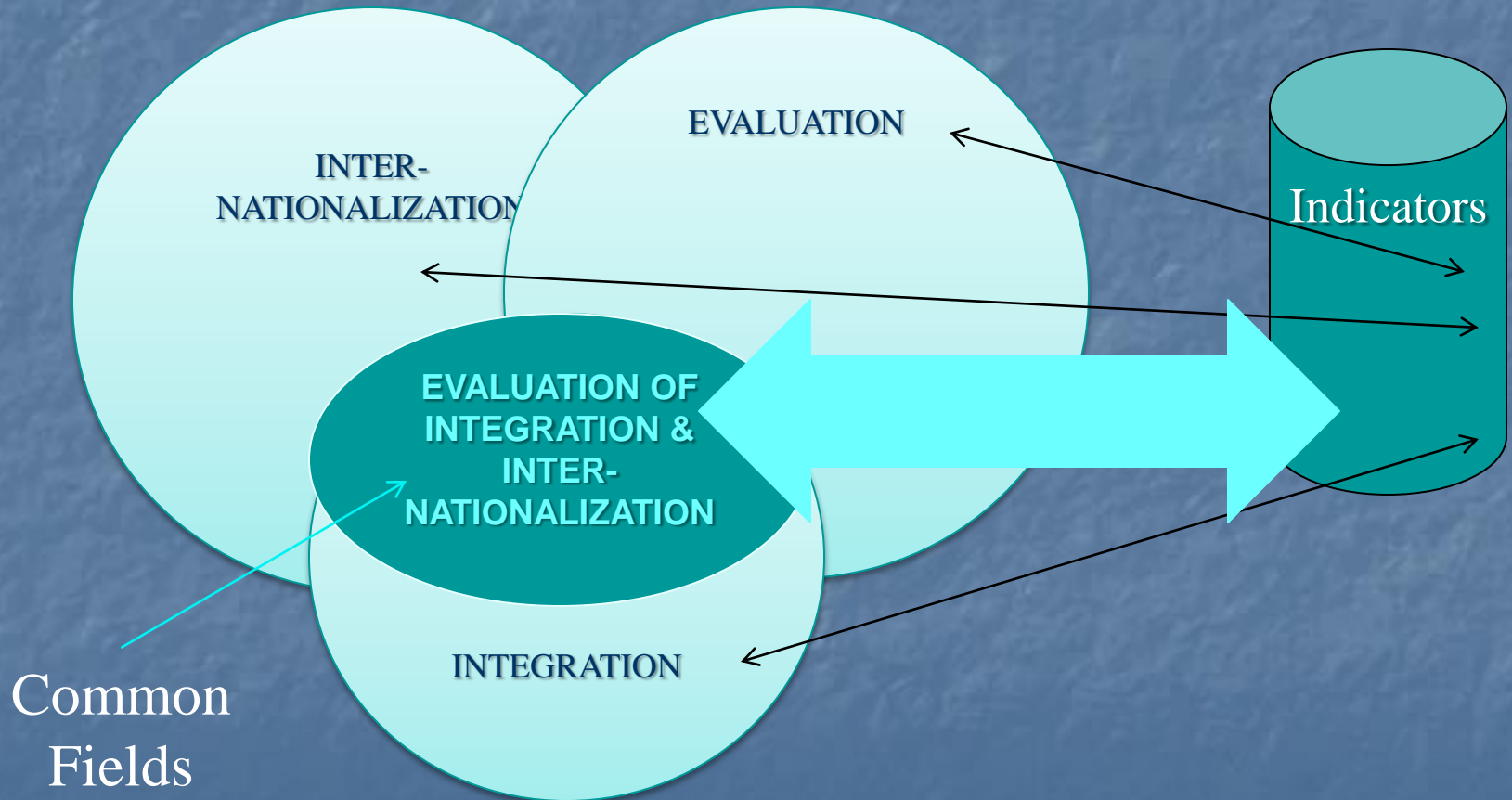


Co-ordinated funding  
Co-ordinated calls  
Joint calls (& co-funding)



# Literature supports Indicator Development for Evaluation

## Strands of Different Literature



# EC Evaluation – history

Early 1980s: EC started systematic RTD programme evaluation

**1994** –EC introduced new scheme for the evaluation of RTD *programmes* (applied in 1995)

- Continuous monitoring
- Five-year assessment (Combined ex-post evaluation + mid-term of the on-going one + recommendation for future orientation)

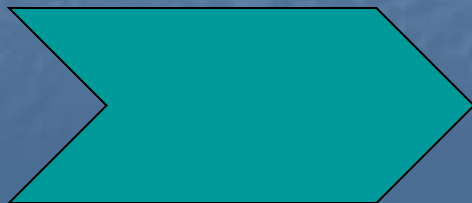
## ■ Shortcomings pre-1994:

- Lack of overall synchronisation (timeliness)
- *Lack of minimum set of common indicators across all programmes and their systematic collection*
- Lack of appropriate timeframe

Main method: carefully selected independent experts working in panels (possibility for aggregating expertise in a Nr of fields)

Source: Fayl et. al. 1997

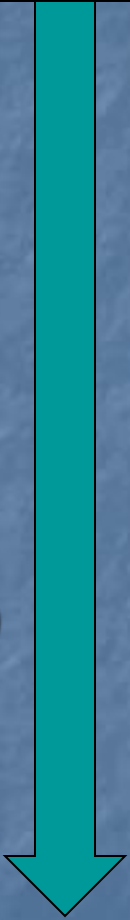
- Desirable metrics and databases are rarely available (CREST WG 2007)
- „A systematic and well-established set of indicators to measure the state of international activities and the effectiveness of these activities in the strategies of research founding organisations does not yet exist.” (Edler & Flanagan 2010)



Attempts to overcome on shortcomings → Develop indicators

- Science from its very beginning internationalised (16th century: Erasmus from Rotterdam; Copernicus from Poland; 19th: Gauss, 20th: Szentgyörgyi from Hungary)
  - individual researchers + students
- Since late-20 century
  - + Business (internationalisation of industrial R&D)
  - + Research performing organisations (HEIs, PROs)
  - + Policy-making organisations and (Research Councils, STI ministries) funding agencies

Indicators



Policies for internationalisation of STI

Internationalisation STI Policies



# INDICATORS – Facilitate the Evaluation of Internationalisation & Integration

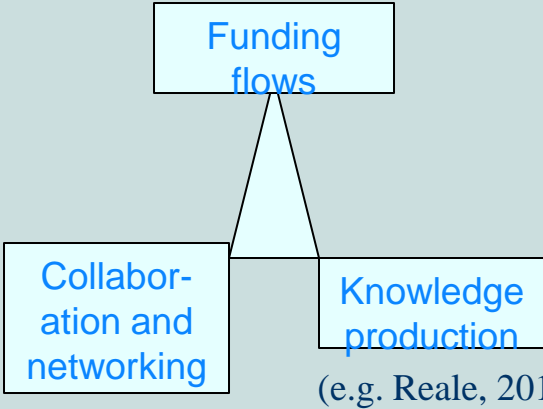
Set of indicators for evaluation is depending on the *focus of evaluation* by

- Actors
- Fields of science
- Modes of international collaboration (linked vs. joint; virtual vs. real field)

*Some of the indicators are useful for each of them but some special indicators need by types*



# Grouping the indicators for Evaluation

By episodes	By main strategy issues	By dimensions of internationalisations
<ul style="list-style-type: none"> <li>• Research capacity</li> <li>• Evolution and change</li> <li>• Value of research capacity</li> <li>• Output</li> <li>• Impact</li> </ul> <p>(e.g. Nedeva 2010)</p>	<ul style="list-style-type: none"> <li>• Scale and scope</li> <li>• Mobility of HRST</li> <li>• Openness of policy actions</li> <li>• Impact analysis</li> </ul> <p>(e.g. Edler and Flanagan, 2010)</p>	

## INDICATORS FOR EVALUATION OF INTEGRATION AND INTERNATIONALIZATION BY ACTORS



# Indicators for Evaluation of Integration and Internationalization

Indicators:	International research activities		Policies, programmes, fundings for internationalisation	
	individuals	PROs, HEIs	ministries, agencies	funding org.
<b>Scale and scope</b>				
• Nr. of agreements	-	+	+	+
• Nr. of participation in				
○ International programmes	+	+	+	+
○ leading international programmes	+	+	+	+
○ foreign advisory boards	+	+	+	+
• internationally used/shared facilities	-	+	+	+
• share of income from international funding sources	-	+	+	+
• share of staff from abroad	-	+	+	+
• share of domestic staff spending research time abroad	-	+	+	+
• success rates in internationally funded programmes	+	+	+	+

# Indicators - Mobility of HRST

Indicators:	International research activities		Policies, programmes, fundings for internationalisation	
	individuals	PROs, HEIs	ministries, agencies	funding org.
- inward mobility	-	+	+	+
- inflow of best (leading) researchers	<p style="text-align: center;"><b>By fields of science; by country of origin/host; by length of stay; by age; by gender</b></p>			
- outward mobility				
- Outflow of best (leading) researchers				
- inward/outward %				
- inflow/outflow of best	-	+	+	+

# Indicators - Mobility impact

Collaboration and networking

Indicators:	International research activities		Policies, programmes, fundings for internationalisation	
	individuals	PROs, HEIs	ministries, agencies	funding org.
● scientific career	+	-	-	-
● cooperation with foreign researchers	+	+	+	+
● international teaching experiences	+	+	-	-
● Networking/lasting networks	+	+	+	+



# Indicators - Openness of policy actions and research funding scheme

Funding flows

Indicators:		International research activities		Policies, programmes, funding for internationalisation	
Impact	Status quo	individuals	PROs, HEIs	ministries, agencies	funding org.
-	for domestic actors				
○	indirectly supported	-	+	+	+
○	directly supported	-	+	+	+
-	for foreign actors				
○	funded participation	-	+	+	+
○	non-funded participation	-	+	+	+
-	openness of existing instruments to internationalisation activities	-	-	+	+

Indicators:	International research activities		Policies, programmes, funding for internationalisation	
	individuals	PROs, HEIs	ministries, agencies	funding org.
• internationalisation dedicated budget to total	-	+	+	+
• budgets spent on international activities	-	+	+	+
• financial income from EU/ intern. research programmes to total research income	-	+	+	-
• % of nationally funded, co-funded or internationally funded collaboration	-	+	+	+
• % of PP co-funded projects across border to total PPPs	-	+	+	+



# Impact analysis 1: expected scientific benefits /improving quality of excellence

Indicators	Knowledge prod			
	International research activities		Policies, programmes, fundings for internationalisation	
● <i>Scientometrics</i>	individuals	PROs, HEIs	ministries, agencies	funding org.
- international co-publication (different locations) (Nrs)	+	+	+	+
- Total				
- in prestigious journals				
- international & intersectoral co-publications (Nrs)	+	+	+	+
- % of intl. co-publications to total nationally related publications	-	+	+	+
- Nr of citation by internat. and national co-authored papers	-	+	+	+

# Impact analysis 1- continued

Knowledge production

INDICATORS	International research activities		Policies, programmes, fundings for internationalisation	
	individuals	PROs, HEIs	ministries, agencies	funding org.
● <i>Technometrics</i>				
- co-inventions (different locations)	+	+	+	+
- co-patenting	+	+	+	+
- Nr. of nationally owned patents cited abroad (in patent documents)	-	+	+	+
- Nr. of foreign owned patents citing in national patents	-	+	+	+
- Cross national inventor-applicant	-	+	+	-



# Impact analysis- continued

Indicators:	International research activities		Policies, programmes, fundings for internationalisation	
	individuals	PROs, HEIs	ministries, agencies	funding org.
<b>Impact analysis 2</b> (solving societal problems, contributing to developments)	+	+	+	+
<b>Impact analysis 3</b> (gaining access to new talents, knowledge, advanced facilities)	-	+	+	+

# Importance of Evaluation

- Good policy is evidence based at any level
- A well-embedded evaluation culture in a country / in an international organisation, and so on, helps to build up evidences
- Evaluation is an integral part of intelligent policy-making. It is much more than just justify the necessary budgets.

# Thank you

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