Innovation Research Centre

Annamária Inzelt:

Update on the ESF MO Forum on Indicators of Internationalisation

Member of Financial Research Corp.
H-1023 Budapest, Felhévízi út 24.

www.penzugykutato.hu/en

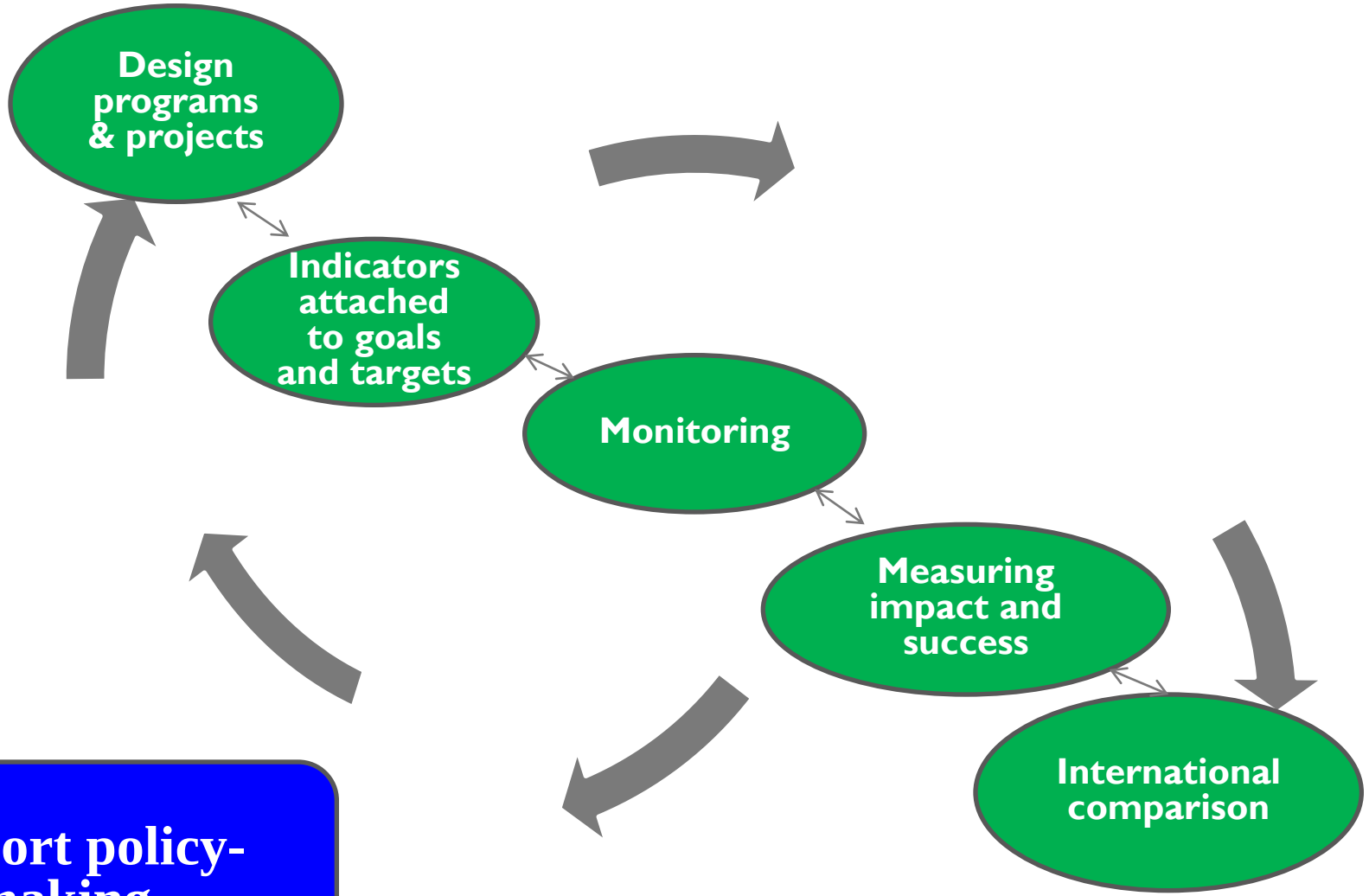
ESF Forum on "Indicators of Internationalisation"
3rd Workshop, Bern, Switzerland 7-8 November 2011

Indicator needs for the internationalisation to ...

- Science policies that are navigating the actors
- Funding agencies that are increasingly promoting internationalisation
- Research performing organisations that are acting more and more internationally

Need much more information to understand the scale, scope and effects of existing international activities in science, its incentives and framework conditions

Various needs of indicators in cycle of FAs work

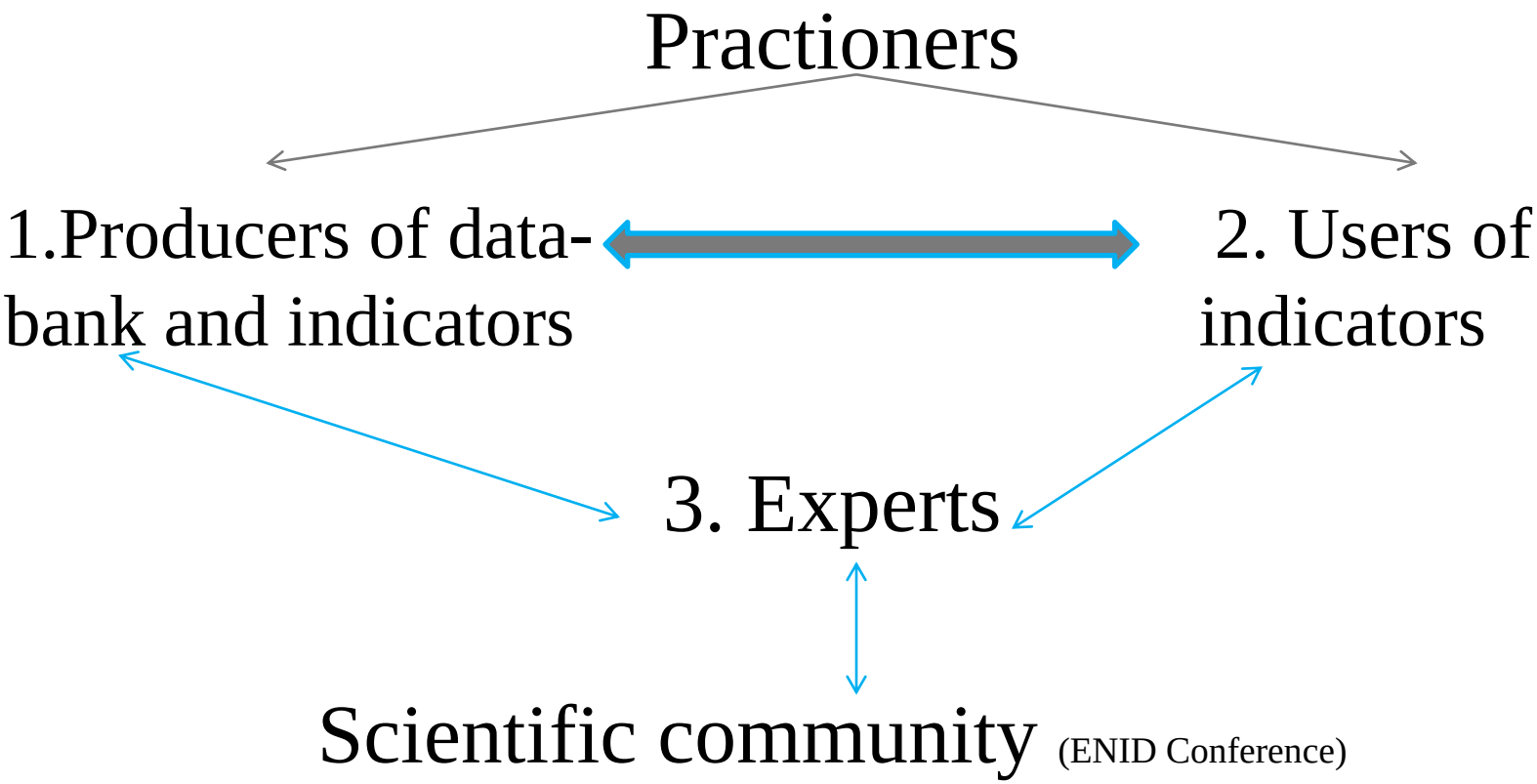


Support policy-making

Indicators have to respond on key questions for assessment purposes:

- Why and to what extent are we investing in international research?
- What are the main characters of internationalization processes?
- What are the expected outcomes of investing in international activities?
- How are the countries differing by their efforts and by their outcomes of internationalisation?

Actors in indicator development



Participatory process, involving all relevant actors

It has working well in the Forum

Paris Outcome: Designed Indicators by Dimensions & Rationales

Rationales / Dimensions	Critical mass	Complementary	Global coverage	Enlarging innovation networks
Resources flows	I.1. % (sum)budget for joint research program	I.1	I.2. % (sum) budget spending abroad	I.3.
Funding knowledge production	II.1. Nr. of international co-authored papers to total publications of researchers funded by FA (by discipline's)	II.2 Nr. of co-patents with international partners to total patents owned by RPOs funded by FA	II.1.	II.2.
Funding knowledge circulation	III. 1. % (capita) inward/ outward mobility by position			I.3. % (sum) of budget to attract foreign researcher
Funding collaboration and networking	IV.1. % of annual budget spent on large facilities Replace: Large research infrastructure	IV.1		
Governance and processes		V.1 Nr. of offices abroad	V.2. % of foreign reviewers and panellist	

Exercises between Paris and Bern

- Phase 1: Experts provided short description of indicators and a template to collect information
  - on the *availability* of data, their *sources* to selected indicators
  - *use* of the indicator by FAs and *needs* of indicators for various purposes
- Phase 2: FAs and RPOs responded on questions, *many details became clear*
- Phase 3: *Testing few selected indicators* - data were readily available at most respondants
- Phase 4: Starting discussion on the unsolved problems (such as: treating multipurpose programs, breakdown by disciplines, by field of science, by economic activity)

The Participating RPOs by Phases

Country	Full name	09-11 2010.	07.- 09 2011	09 – 11 2011
1. France	French National Institute for Agricultural Research, INRA	-	+	+
2. France	INSERM	-	-	+
3. Germany	Max Planck Society, MPS	+	-	-
4. Italy	Istituto Nazionale di Fisica Nucleare, INFN	-	+	+
5. Italy	CNR	?	?	?
6. Spain	Agencia Estatal Consejo Superior de Investigaciones Científicas, CSIC 	+	+	+
4 Countries	Total	2	3	4

Indicator Development for Measuring Internationalisation of Funding Agencies

FAs are intermediaries between - the Government and - the performing sector

- Acting in a multi-layered policy environment,
- Performing different functionalities related to research funding (determining goals and content, submission and selection, decisions, contract management, etc.), which can be more or less internationalized,
- Performing different functionalities related to governance and processes according to a more or less propensity toward internationalisation
- ***Internationalization of FAs can be assessed by looking at the different functionalities***

Source Reale et. al. 2011

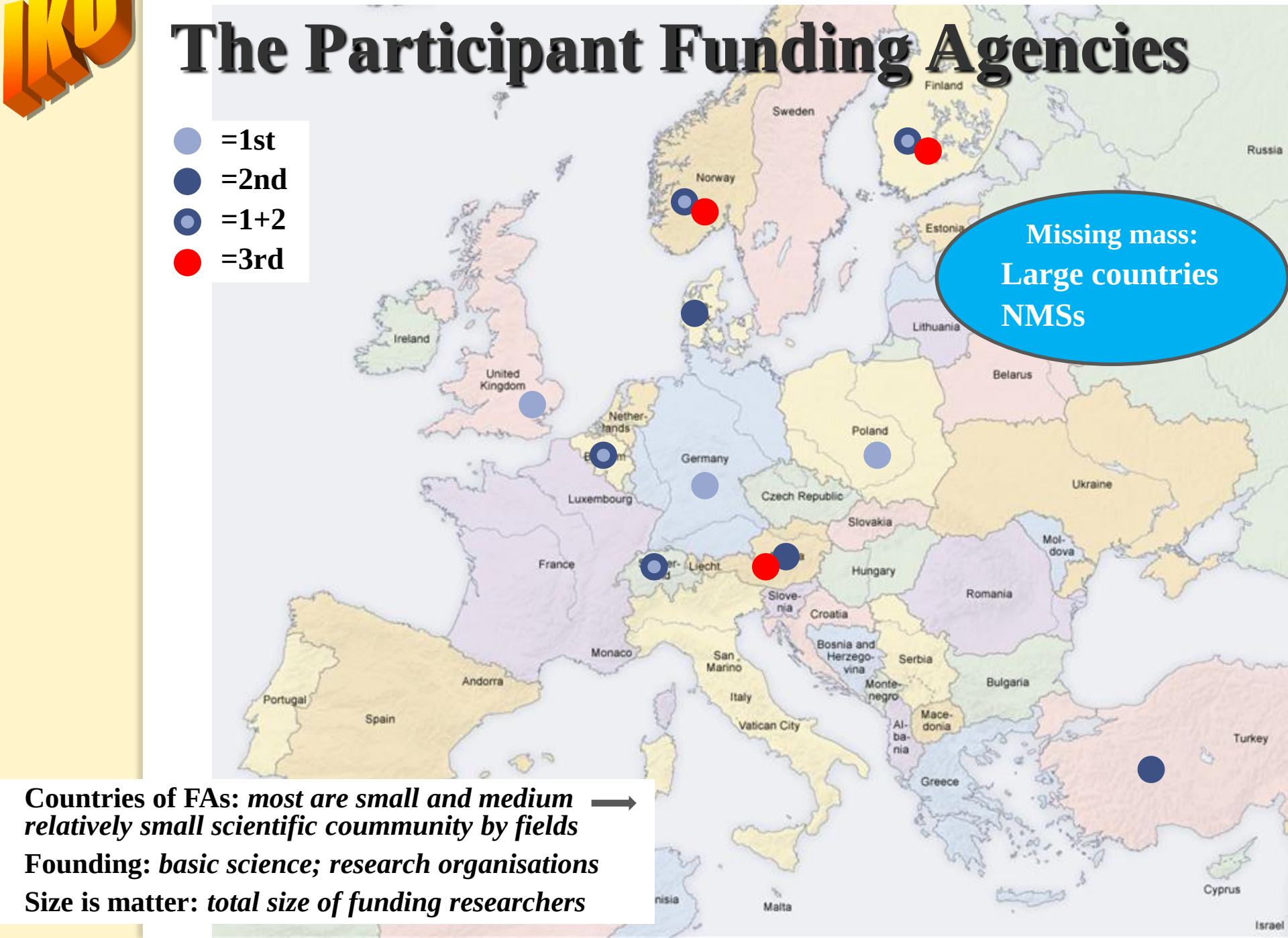
Type of FAs involved in investigating needs, usefulness and feasibility of indicators

Type	ESF-type FAs	Foundation for Basic Research	Hybrid, multi-task organisations
Examples	RCN in Norway, SNSF in Switzerland, FWF in Austria, AKA in Finland, and FWO in Belgium Foundation for Polish Science, FPS	DNRF, Denmark Research Councils, RC, UK Deutsche Forschungsgemeinschaft, DFG	TUBITAK, Turkey

The Participating Funding Agencies

Country	Agency	09-11 2010	07-08 2011	09-10 2011
1. Austria	Austrian Science Fund, FWF	-	+	+
2. Belgium	Fonds voor Wetenschappelijk Onderzoek – Vlaanderen, Research Foundation – Flanders, FWO	+	+	-
3. Denmark	Danish National Research Foundation, DEF	-	+	-
4. Finland	Academy of Finland, AFA	+	+	+
5. Germany	Deutsche Forschungsgemeinschaft, DFG	+	-	-
6. Norway	Research Council of Norway, RCN	+	+	+
7. Poland	Foundation for Polish Science, FPS	+	-	-
8. Swiss	Swiss National Science Foundation, SNSF	+	+	-
9. Turkey	The Scientific and Technological Research Council of Turkey, TUBITAK	-	+	-
10. UK	Research Councils, RC – UK	+	-	-
10 countries	Total	7	7	3

The Participant Funding Agencies



Countries of FAs: ***most are small and medium*** →
relatively small scientific coummunity by fields

Founding: ***basic science; research organisations***

Size is matter: ***total size of funding researchers***

Data Sources to Indicators

Indicators	Central administrative (internal) databank	Central administrative file	Outside sources	Project database/ final project reports	National/ regional database
Budget for Joint Research Programs	FWO FWF 2	AFA; DEF; RCN TUBITAK 4			
Budget spending abroad	FWF 1	TUBITAK; DEF 2			
Budget for attracting foreign researchers	FWO; FWF 2	TUBITAK; AFA 2		DEF 1	
International co-authored papers		DEF 1	TUBI, AFA FWF 3		FWO 1
Int. co-patenting		DEF 1	TUBI 1	AFA 1	
Mobility (*) By disciplines	FWO; AFA; FWF 3		TUBITAK; DEF 2	AFA 1	
Mobility (*) By country of origin/destination	FWO; FWF 2		TUBITAK; DEF 2		
Mobility (*) By position	FWO 1		TUBI; DEF 2		
Large Facilities		RCN 1		FWO 1	
Offices abroad		AFA 1	TUBI 1		
Evaluation	RCN; FWF 2	FWF; FWO 2			

Availability of Data

Indicators	Readily available	Not readily	Partly / uncertainty	Not available	Not applicable
Budget for Joint Research Programs (JRP)	RCN; DEF; NSF; FWF; TUBI 5				
Budget spending abroad	DEF; FWF; TUBITAK 3	RCN;SNSF WF 3	AFA 1		FWO
Budget for attracting foreign researchers	AFA; FWF; TUBITAK 3	DEF; SNSF RCN 3			
International co-authored papers	DEF; AFA 2		FWF (outside source) 1	SNSF; FWO;RCN	
International co-patenting	DEF; AFA 2			RCN;FWF SNSF	FWO
Mobility (*) **By disciplines**	DEF; FWO; AFA; FWF; TUBITAK; SNSF 6		RCN 1		
Mobility (*) **By country of origin/destination**	DEF; FWF; FWO; TUBITAK; SNSF 5		RCN 1	AFA; FWO	
Mobility (*) **By position**	DEF; FWO; RCN TUBITAK 4			AFA; SNSF FWF	
Large Facilities	RCN; AFA 2	TUBITAK; SNSF 2			FWF
Offices abroad	RCN; AFA; TUBITAK; SNSF 4				FWO FWF
Evaluation	RCN; DEF; FWF; SNSF 4	AFA 1			TUBITAK

Use of Selected Indicators

Status	Indicator	Purposes
All respondents for *similar purposes*	International co-authored papers	1. Collaboration in international level 2. Output from international collaboration, research activities
	Evaluation	Analysing the internationalisation of the evaluation process
Few respondents for *similar purposes*	International co-patenting	Output of research activities from international collaboration
All respondents for *different purposes*	Budget for Joint Research Programs	1. Extent of European integration 2. Size of funding international mobility 3. Intensity of (funding) for international collaboration 4. Mutual learning

Use of Selected Indicators cont.

Status	Indicator	Purposes
Majority of respondents for *different purposes*	Budget spending abroad	1. Size of fund for international mobility 2. Extent of cross-border funding 3. Enrich international scope of research activity
	Budget for attracting foreign researchers	1. Brain drain/ brain gain 2. Size of funding international mobility 3. Information on specific schemes dedicated to attract foreign researchers
Majority interested but *difficulties for using*	Mobility by disciplines	Internationalization, measuring differences, supporting career development, international experience
	Mobility by country of origin / of destination	Attractiveness of the country, incoming mobility
Not using and not interested	Mobility by position	1, identifying age or career-stage related obstacles to mobility
	Large Facilities	1. information of the importance of these facilities 2. Cooperation in international science
	Offices abroad	1. Cooperation in international science 2. Visibility

FAs (as well as RPOs) are preparing indicators that are not used by themselves but they are very important for national / European policymakers

Status of Indicators
(afternoon discussion)

Status	Description	Timing
Pilot phase	Testing with data (spot data and time-series)	Sept-Oct 2011
Feasibility	Some clarification needs; - Breakdown - Overcome on definiton and classification problems	Nov- ?
Blue sky	Further research need to develop relevant indicator to the needs	Follow up after the Fora
Leave it out	Quantitative measure has very limited meaning for users	Bern decision

Expert proposal to common set of indicators by timing of their development and application

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keep it – ***pilot 3*** **feasibility 3; blue sky 2; leave it out 3**

Interim results and problems

- Co-operation of practitioners (FAs & RPOs) brought lot of fruits now we are much closer to useful and workable indicators
- Hopefully there will be a publication in *Research Evaluation*
- *In present stage*
  - *the size of RPO sample is still too small and the country coverage is very narrow to provide robust results. We need more empirical evidences to compile a well established, relevant list of indicators.*
  - *Sample size and missing type of actors are also a critical issue at FAs*
- **But the work is still worth as a pioneer study**

Thank you for your kind attention!

www.penzugykutato.hu/hu/iku
Email: annamaria.inzelt@uni-corvinus.hu
inzelt.annamaria@penzugykutato.hu