

# **Evaluation of R&D Institutions in Ukraine – the New Approach**

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An evaluation of institutional structure (network of R&D institutions) -

one of the elements of the S&T policy evaluation framework

**The goal of research** is to identify whether current institutional arrangement evaluation process supports intensive S&T development of Ukraine

**Ways to achieve the goal:**

- to identify key differences and advantages of current methodology of assessment of Ukrainian R&D institutes in comparison with the previous ones;
- to determine the main tendencies in evaluation of Ukrainian R&D institutes that gives floor for re-shaping Ukrainian R&D landscape and in its turn for the improvement of S&T policy

## The evaluations of R&D institutions on the state level in Ukraine:

- (a) state statistical observations;
- (b) state attestation of R&D institutions, supported by state;
- (c) information about results of public procurement on R&D and summary of its outcomes implementation monitoring  
and
- (d) mandatory scientific and technological expertise of state targeted S&T programs, intersectoral and sectoral S&T programs;
- (e) expertise of basic research in all research areas;

# Limitations of statistical evaluation:

- **NO comparisons** and **NO evaluations** of R&D institutions or universities performance. Just **primary official data** for further evaluation and comparison of R&D institutions
- reliability of statistical data because of the self-evaluation



the state attestation of R&D institutions  
was implemented in 1998

**BUT NOT FOR ALL**

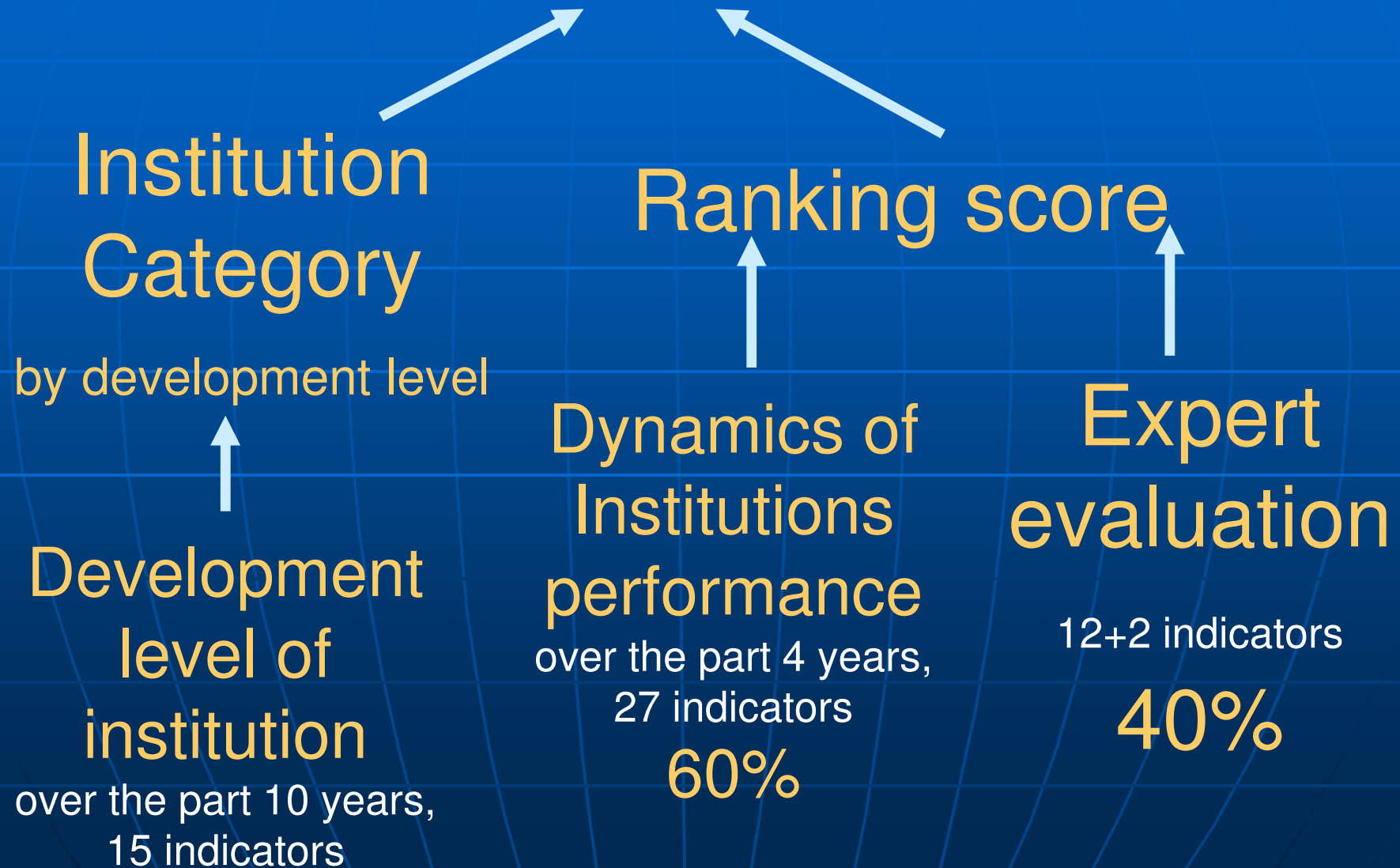
it covers only institutions included in State register of research institutions, which are supported by the state

**New methodology for R&D institutions evaluation**  
was developed by the experts of the STEPS Center.  
(approved by the Decree of the Ukrainian Government,  
#1176, on 31 October 2011)

### Main **advantages**:

- Combination of quantitative and expert (qualitative) indicators with the priority to quantitative estimations of expert evaluations (through the use of differential weights - 0.6 and 0.4 respectively)
- Combination of self-assessment and external assessment of research institutions
- Consideration of the differences between natural sciences and engineering; social sciences and humanities (through differential weights)
- Anonymous conducting peer reviews and transparency of evaluation (through the on-line system "Expert").

# Integrated Evaluation Index {category&rating}



# How it works?

## Development level – 15 indicators

- Qualification level of researchers - 4
- Budget and infrastructure - 3
- Research projects profile - 2
- Productivity - 2
- Prestige - 4

## Assessment of institute dynamic – 27 indicators

### *Subindex I: Dynamic of S&T potential – 13 indicators*

- Human potential - 5
- Financial, recourses and innovation potential - 8

### *Subindex II: Research Output Indicators – 14 indicators*

- Research volume - 3
- Publications - 2
- Innovation activity - 4
- International integration - 3
- Representation in the world information area - 2

## Natural sciences and engineering vs. social sciences and humanities

	Indicator	Weight for natural sciences and engineering	Weight for social sciences and humanities
1.	R&D funding over the past 10 years, thousands UAH	0.10	0.15
2.	Number of unique objects of national heritage, number of centers for collective use of expensive equipment	0.05	0.00
3.	Number of books (monographs), encyclopedias, dictionaries and hand books (not including educational literature), published in Ukraine or abroad during recent 10 years	0.10	0.20
4.	Number of granted patents and sold licenses (in Ukraine and abroad during recent 10 years)	0.10	0.00



## The structure of expert evaluation

Criteria	Weights (%)	Number of indicators
Targeted orientation of research	16	2
Quality of research results	18	3
Prospects of R&D activity	56	7
Specific indicators	10	2
<i>Total</i>	<i>100</i>	<i>12+2</i>

2

Number of valid utility patents granted in Ukraine and abroad  
Number of license treaties on intellectual property use and know-how per 100 researchers

## Matrix for R&D institution categories

Classifi- cation group	Classifi- cation evaluation (scores)	R&D institution ranking (scores)			
		100-150 Catching up	151-250 Moderate	251-350 Active	351-500 Leaders
I - II	2,61 - 5,00	<i>Category C</i> -high S&T potential -recognized in Ukraine -participation in S&T policy making process -low developments' rate		<i>Category A</i> -high S&T potential -world and Ukrainian recognition -participation in S&T policy making process, influence on sectoral S&T policy -high quality results	
III – IV	1,00 - 2,60	<i>Category D</i> -low S&T potential -low development dynamic -unfamiliar to the world information area -R&D in a very narrow field and often non systematic		<i>Category B</i> -S&T potential is lower than in Category A, but has high rates of development and high efficiency -able to participate in policy making process in a specific area -active in integration process to the world information area -one of the leaders in specific field	

# Methodology in practice (1)

2012 – 82 R&D institutions were estimated



# Methodology in practice (2)

## Main differences:

- 1. Rankings of 71%\* of research institutions according to the old Methodology are higher than rankings received according new methodology*
- 2. Expert evaluation of the institutions is more critical than their self-estimation:*
  - 53 out of 80 research institutes (or 66%) were evaluated by experts more strictly
  - only for 11% of institutes expert evaluations were higher than self-estimations
  - for 22% expert evaluations were equal with self-estimations

\* for 48 out of 82 research institutes (59 %) evaluated according to new methodology in 2012. Rest of institutions did not provide data

# Future

This Methodology is not a last stop!

Important issues to be taken to consideration

- impact factor
- other bibliometric indicators

Thank you for your  
attention!

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