

Smart by oneself? Analysis of Russian regional innovation strategies within the RIS3 framework

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Outline

1. What is it “to be smart” for a regional innovation strategy (RIS)? How can one gain smartness?
2. Testing innovation strategies of 7 Russian regions to fulfil RIS3 criteria: hypotheses, data, outcomes.
3. Conclusions on RIS3 implementation in non-EU countries.

Academic vision of smartness for a regional innovation strategy: internal efforts

Place-based

- Tailoring and fine-tuning to the local context (*Barca, 2009; McCann & Ortega-Argilés, 2016*), using localised know-how and assets to ensure differentiation and unique position in the market (*OECD, 2013; Boshma et al. 2012*)

Evidence-based

- Ensuring the broader use of evidence-based methods (*Kroll, Müller, et al., 2014; Fraunhofer ISI, 2013*), verifiable, submitted to scrutiny (*Barca, 2009*).

Diversified

- Based on related diversification and greater variety (*Boschma, 2014; McCann & Ortega-Argilés, 2015*), cross-sector links (*Foray et al., 2012*) and “cross-fertilization” of ideas between different technological domains (*Iacobucci & Guzzini, 2016*), considering the heterogeneity of research and technology specialization patterns (*Giannitsis, 2009*).

Broad-minded

- Shifting from R&D-focused innovations to practice-based, providing solutions to societal problems and those articulated by businesses (*Hughes, 2012; Moretti, 2012; World Bank, 2010*), with a focus on the technological upgrading of traditional activities, medium and low technology sectors (*Kroll, 2015*).

Future-oriented

- Encouraging investment in the domains that will complement existing skills to create future capability and comparative advantage (*Foray et al., 2011; Hausmann & Hidalgo, 2009*).

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Academic vision of smartness for a regional innovation strategy: external expertise and synchronization

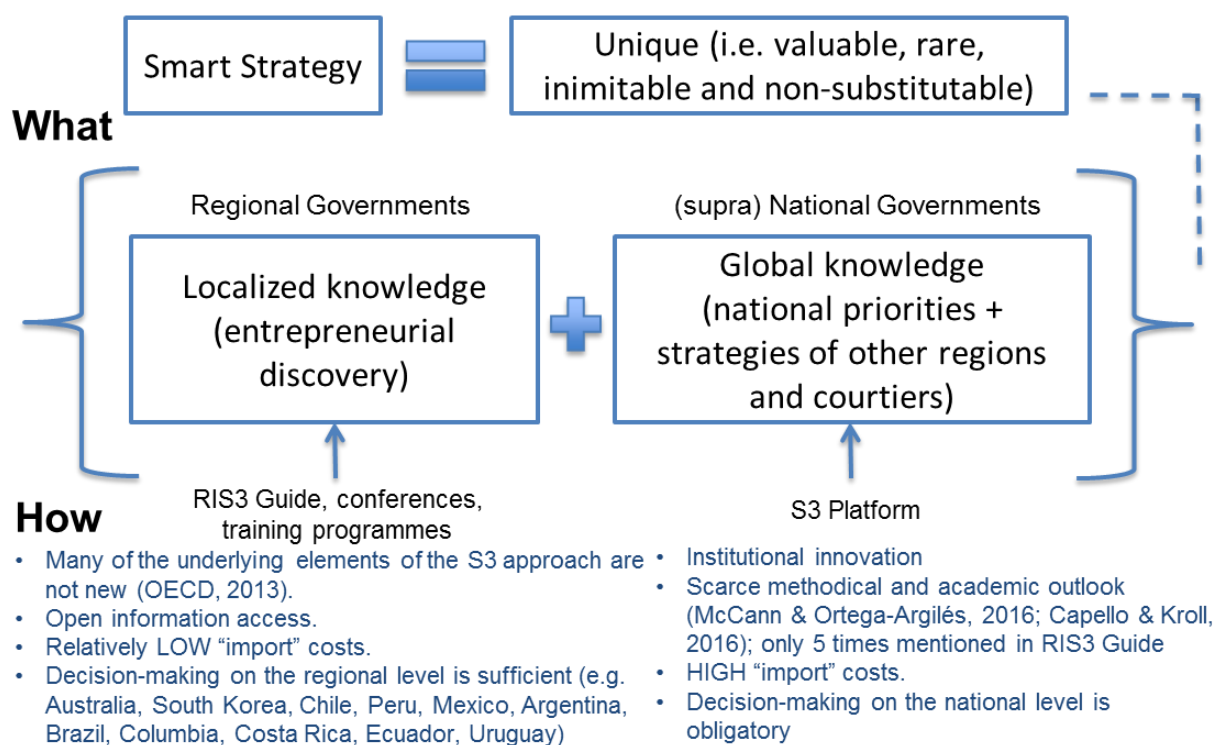
Outward-looking

- Incorporating international benchmarking, global value chain considerations (*Thissen et al., 2013*) and technologically open policy settings to allow for the identification of niches (*Kroll, 2015*).
- Accounting for potential relations with other regions, on the basis of complementarities or similarities between the chosen domains (*Iacobucci & Guzzini, 2016*): “Match what you have with what the rest of the world has” (*Foray et al., 2012*)

Synchronised, well-governed and balancing the top-down and bottom-up approaches

- Ensuring improved policy coordination (*Kroll, Müller, et al., 2014*), clarified division of tasks for policy design and implementation among all parties (*Barca, 2009*), with multi-level governance set-ups to maximize engagement of local actors in partnership with central government actors (*McCann & Ortega-Argilés, 2014*).
- Synched with national and regional strategies, e.g. STI, R&D, industrial (*OECD, 2013; Leonard, 2016*).
- Along with EDP (*Foray et al., 2011*) the strategy design must rely, at least at the beginning, on a top-down approach (*Miren Estensoro & Miren Larrea, 2016; Kroll, 2015; Boschma, 2014*).

What is it “to be smart” for a regional innovation strategy? How can one gain smartness?



Hypotheses

- 1) Most RIS3 principles are considered in current regional innovation strategies without formal recommendations (RIS3 Guide).
- 2) With national level missing (uniform rules for priorities choice, single analytical database, organizational support, expertise and synchronization) a RIS is hardly to become SMART.

Even strong innovative regions are unable to design a smart strategy alone due to the lack of uniform data on peers.

Testing innovation strategies of 7 Russian regions according to RIS3 criteria. Why Russia?

1. Large economy

9th UN rank by world population in 2016: 143,4 mln people

EU – 505,8 mln people; USA – 324,1 mln people; EEU – 182,7 mln people

Source: Worldometers (www.Worldometers.info); Eurostat (<http://ec.europa.eu/eurostat/>); Eurasian Economic Commission (<http://www.eurasiancommission.org/>)

6th IMF rank by GDP (PPP) in 2016: \$3,75 T

EU – \$19,9 T; USA – \$18,56 T; EEU – \$4,84 T

Source: International Monetary Fund (<http://www.imf.org>)

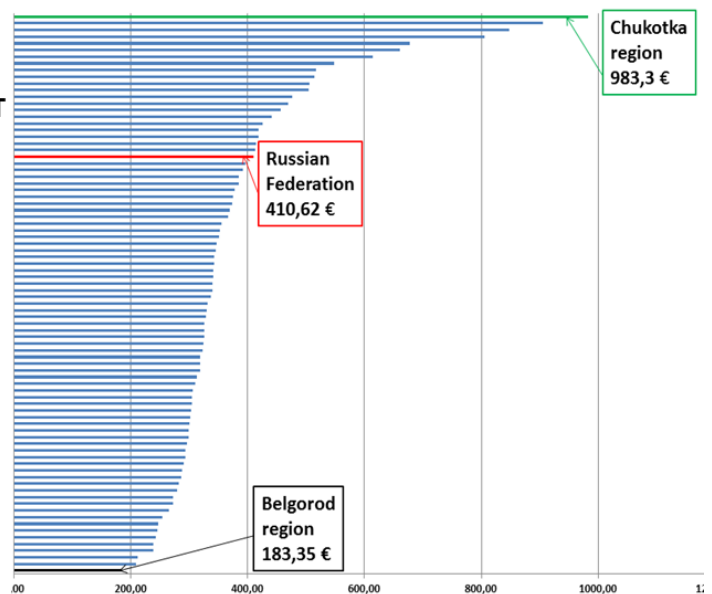
2. Regionally diverse country

85 regions

3,3 times difference by average income of the population per capita between 10% top and lagging regions

Average income of the population per capita, euro (2014)

Source: Rosstat, 2016



Federal country with regions empowered to pursue various policies

Quality of regional innovation policy in Russia



Source: HSE (2016) Russian Regional Innovation Ranking. Issue 4.

~ 60% of Russian regions pursue targeted innovation policies

Database of the research

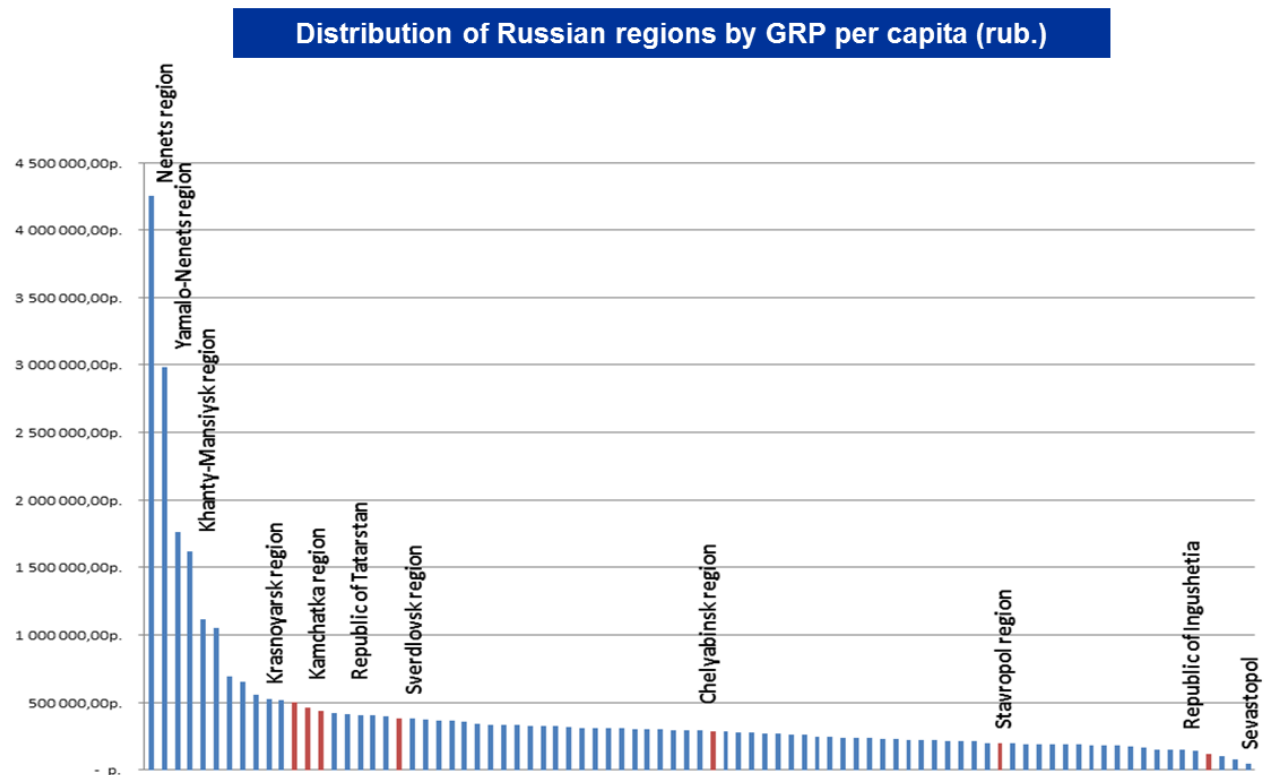
- Close to all **85** Russian regions have Socio-Economic Strategies
- **35** regional Socio-Economic Strategies have innovation-relevant sections
- **7** Russian regions have Innovation strategies: **the Tatarstan Republic (2008); Stavropol Region (2009); Kamchatka Region (2010); Krasnoyarsk Region (2011); Chelyabinsk Region (2012); the Ingush Republic (2012); Sverdlovsk Region (2013)**
- **3** Russian regions have Innovation concepts: Kaluga Region, Republic of Tyva and Republic of Sakha (Yakutia)

Our sample

Regional strategic planning in Russia



Regions that designed Innovation strategies vary in terms of economic development (from 12th to 82nd ranks by GRP per capita)



Innovation profiles of the selected regions are also diverse

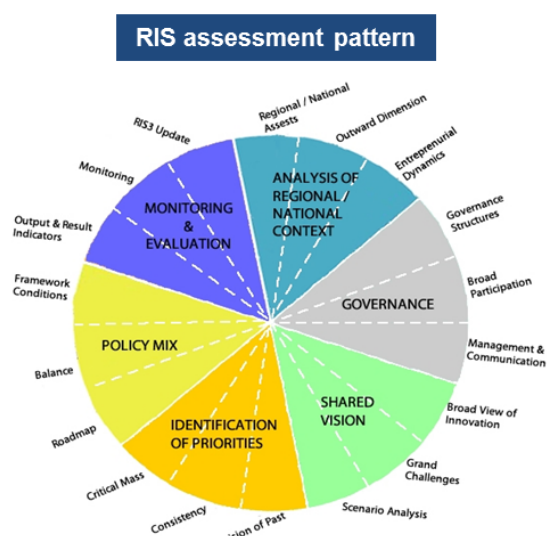
Ranks of the selected regions according to the values of HSE Russian Regional Innovation Index and Sub-indices

Region	Russian Regional Innovation Index	Socio-Economic Conditions for Innovation Activities SUB-index	S&T Potential SUB-index	Innovation Activities SUB-index	Quality of Innovation Policy SUB-index
Tatarstan Republic	1	3	17	2	1
Krasnoyarsk Region	12	19	19	22	6
Sverdlovsk Region	13	14	13	14	26
Chelyabinsk Region	18	12	28	21	29
Stavropol Region	23	24	51	39	10
Kamchatka Region	71	77	77	66	49
Ingush Republic	82	81	83	82	60

Source: HSE (2016) Russian Regional Innovation Ranking. Issue 4.

Assessment wheel: a method adapted to test Russian RISes for RIS3 critical factors matching

- Built on the basis of the six steps described in the RIS3 Guide and 3 critical factors for each step
- The scaling from 0 to 1 estimates the evidence provided for matching each critical factor with the following meaning: **0 – no match; 0,5 – unclear match; 1 – clear match**
- Final result in a form of "spider graph" highlights strengths and weaknesses of a RIS

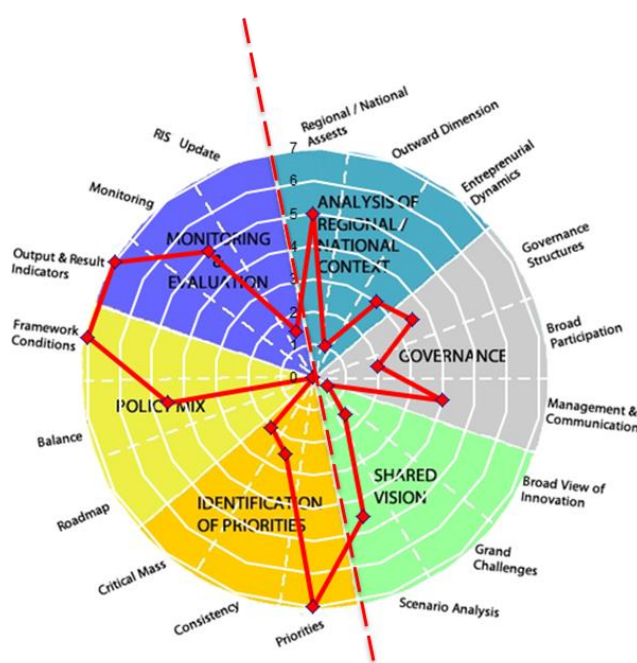


Source: adapted from S3 Platform

<http://s3platform.jrc.ec.europa.eu/ris3-assessment-wheel?inheritRedirect=true>

RIS3 Guide Steps	Sections (Critical Factors)	No. of matches (0 / 0,5 / 1)
1. ANALYSIS OF REGIONAL CONTEXT	Regional / National Assets	
	Outward Dimension	
	Entrepreneurial Dynamics	
2. GOVERNANCE	Governance Structures	
	Broad Participation	
	Management & Communication	
3. SHARED VISION	Broad View of Innovation	
	Grand Challenges	
	Scenario Analysis	
4. IDENTIFICATION OF PRIORITIES	Priorities setting	
	Consistency	
	Critical Mass	
5. POLICY MIX	Roadmap	
	Balance	
	Framework Conditions	
6. MONITORING & EVALUATION	Output & Result Indicators	
	Monitoring	
	RIS Update	

Russian RISes highlight framework conditions, have priorities identified and monitored, but lag in most analytical, governance and visioning issues

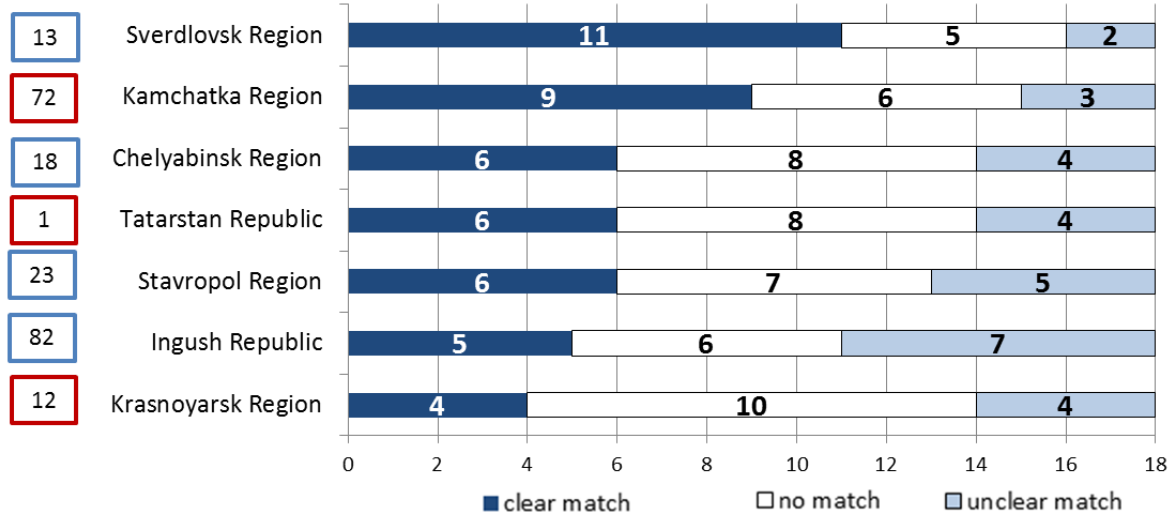


RIS3 Guide Steps	Sections (Critical Factors)	No. of matches	Total
1. ANALYSIS OF REGIONAL CONTEXT	Regional / National Assets	5	9
	Outward Dimension	1	
	Entrepreneurial Dynamics	3	
2. GOVERNANCE	Governance Structures	3,5	9,5
	Broad Participation	2	
	Management & Communication	4	
3. SHARED VISION	Broad View of Innovation	0,5	6,5
	Grand Challenges	1,5	
	Scenario Analysis	4,5	
4. IDENTIFICATION OF PRIORITIES	Priorities setting	7	11,5
	Consistency	2,5	
	Critical Mass	2	
5. POLICY MIX	Roadmap	0	11,5
	Balance	4,5	
	Framework Conditions	7	
6. MONITORING & EVALUATION	Output & Result indicators	7	13,5
	Monitoring	5	
	RIS Update	1,5	

Russian regional innovation ranks and no. of RIS3 critical factor match in half of the cases

Distribution of matches according to “RIS3 design steps” critical factors

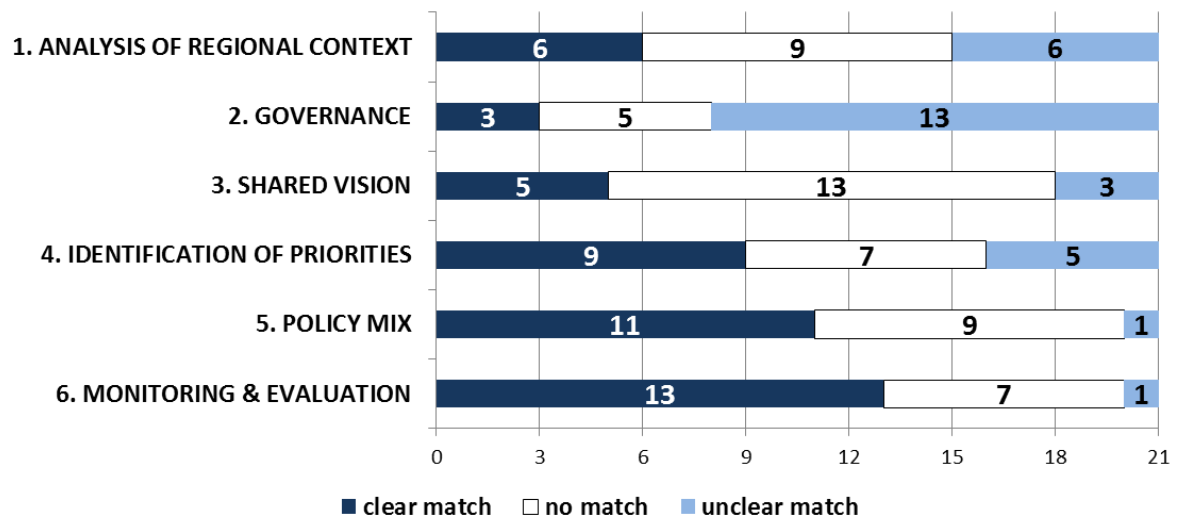
RRII rank



- 6 steps in RIS3 design
- 3 critical factors within each step

Russian RISes clearly match ~40% of “RIS3 design steps” critical factors

Distribution of matches according to “RIS3 design steps” critical factors



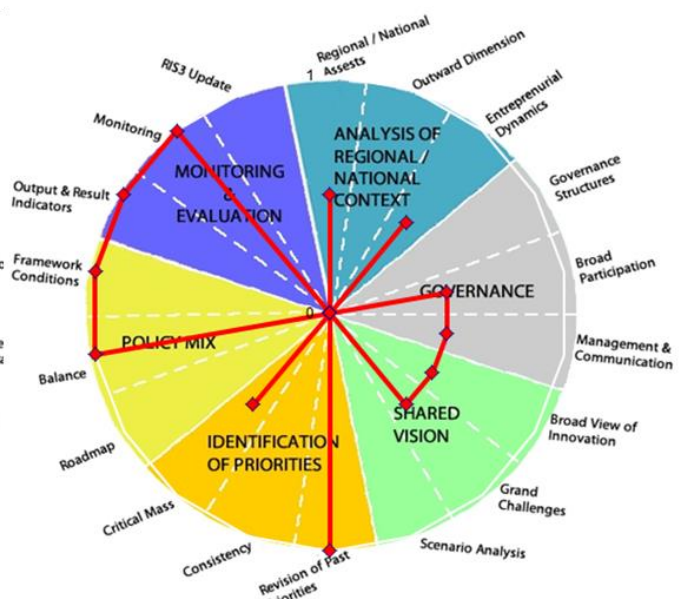
- 7 RISes tested altogether
- 6 steps in RIS3 design
- 3 critical factors within each step

Both peers ranking 1st and 82nd in Russian regional innovation rating have quite similar RIS structure: each step is present, but incomplete

RIS Assessment Wheel results for Tatarstan republic (1st RRIL rank)

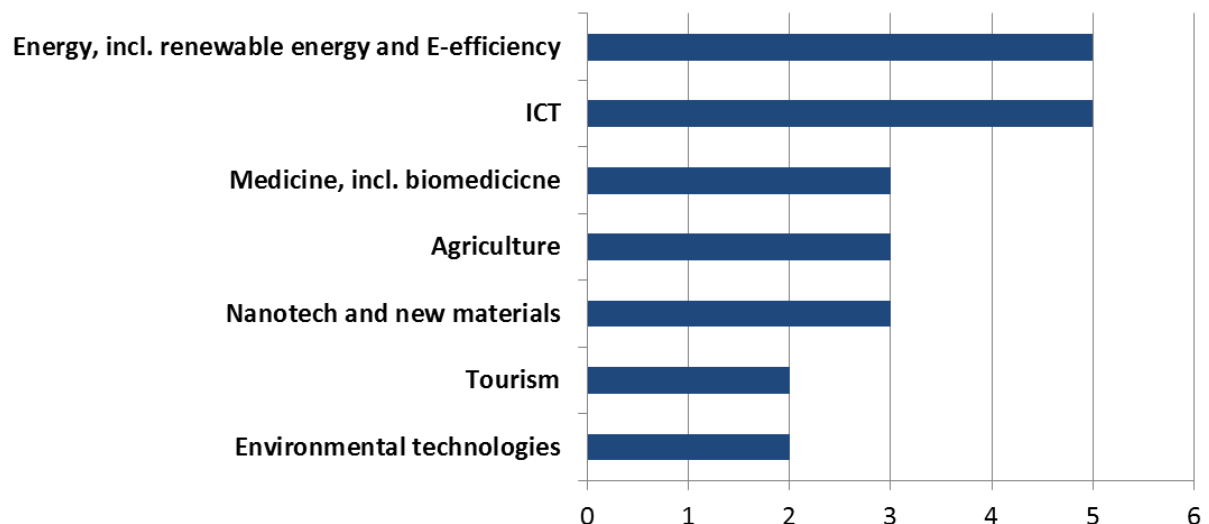


RIS Assessment Wheel results for Ingush republic (82nd RRIL rank)



Most Russian RISes choose “fashionable” sectors: ICT, nano-, biotech etc.

No. of strategies with sector indicated



How evidence-based are these choices?

ICT as a RIS priority is evidence-based in only 1 out of 5 regions

Region	Percentage of the ICT personnel in total employment in the region	Average value for federal district	Rank by the indicator
Tatarstan Republic	3,1	3,0 (Volga federal district)	21
Russian Federation	2,9	2,9	
Sverdlovsk Region	2,7	2,3 (Ural federal district)	26–28
Chelyabinsk Region	2,3	2,3 (Ural federal district)	35–37
Krasnoyarsk Region	1,9	2,3 (Siberian federal district)	44–51
Ingush Republic	1,6	2,0 (North-Caucasus federal district)	59–63

Source: Rosstat, 2016

Nanotech as a RIS priority is evidence-based in 2 out of 3 regions. Tatarstan - ?

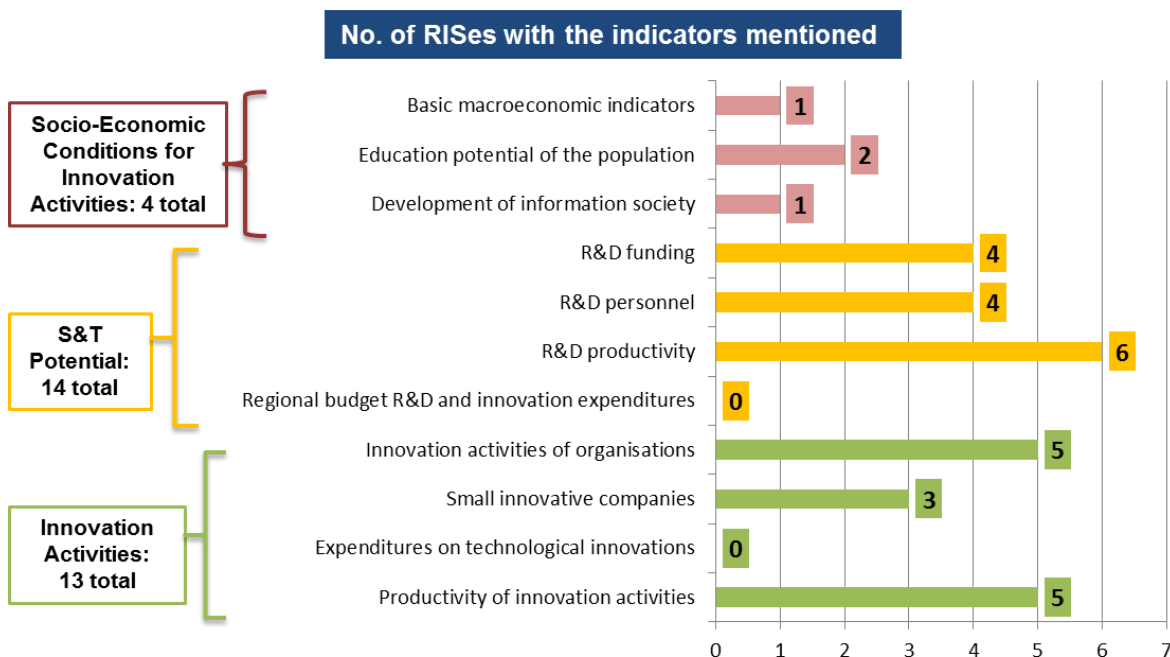
Region	Share of nanotech products / services in the total volume of shipped products / provided services, %	Average value for federal district	Rank by indicator
Tatarstan Republic	0,0121	0,0028 (Volga federal district)	1
Sverdlovsk Region	0,0040	0,0017 (Ural federal district)	5
Chelyabinsk Region	0,0019	0,0017 (Ural federal district)	19
Russian Federation	0,0018	0,0018	
Stavropol Region	0,0013	0,0008 (North-Caucasus federal district)	29

Source: Rosstat, 2016



Despite the evidence-based capacity in nanotech we find no nanotech mentioned in the Tatarstan Republic RIS

KPIs of Russian RISes tend to monitor R&D and Science



Source: HSE (2016) Russian Regional Innovation Ranking. Issue 4.

RIS3 for Russia: research conclusions

1. Russian RISes (4 accepted before 2012, i.e. without RIS3 Guide) basically **follow all 6 RIS3 design steps**, but **fail to complete each of 18 critical factors** (40% of critical factors matches).
2. Russian RISes weakness (in terms of RIS3 concept) concerns **preparatory part** (analysis, governance, vision): **entrepreneurial discovery process** (broad participation, management and communications) and **external expertise** (outward dimension, grand challenges).
3. Russian RISes are mostly **R&D innovation model-based**, including those in lagging regions: lack of broad vision on innovations, R&D-focused monitoring systems.
4. Russian RISes are mostly **declarative than instrumental**: no road maps, updating mechanisms, off-balanced KPIs.
5. Priorities are mentioned, but **without** cross-sectorial / structural change / future markets / GPT-positioning orientation. Regional innovation **priorities** are **based on fine-tuning to the national trends** rather than self-discovery and critical mass.
6. Even regions - strong innovators or regions that formally considered many of common RIS3 Guide principles **fail to find their smart specialization**, since they are **outside the system ensuring uniform evidence-based comparability**.

RIS3 in non-EU countries: second foot to be added

1. **Smart** is a characteristic for the **system of regions** (e.g. regions registered in RIS3 Platform) and not a single region (impossible to be “smart by oneself”).
2. Uniform rules for priorities choice, single analytical database, organizational support, expertise and synchronization are **required** .
3. These requirements (NOT the priorities) should be **determined at the superior level of governance** (national, supra-national) as the second foot of the RIS3 concept.
4. **More regions** within the smart system **ensure the increase of** uniqueness and **smartness** for each separate region (more benchmarking opportunities): Russia => EEU => EU => Global system
- ?
5. Some **competition** (i.e. competence duplication) is essential and should be considered **in the smart system of regions** (or **several smart systems** should co-exist).