



Improving the system of indicators used in monitoring and evaluation

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Ministry of Public Finance
Authority for Coordination of Structural Instruments (ACIS)

Improving the system of indicators used in monitoring and evaluation

Activity 1.1 Analysis of the system of indicators used in monitoring and evaluation

National Strategic Reference Framework

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NATIONAL STRATEGIC REFERENCE FRAMEWORK

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1. NEEDS ASSESSMENT

1.1. GENERAL INFORMATION

While respondents frequently give broadly positive assessments of the overall system, they nevertheless have multiple suggestions for improvement. This suggests satisfaction in principle, but many practical problems.

There is considerable consistency about the range of problems identified at both system and individual indicator level. This is helpful in identifying a series of groups of issues needing to be addressed to improve the system.

Commonly cited difficulties are:

- Insufficient personnel and excessive workload;
- Lack of training and information;
- Lack of resources (stationary, infrastructure);
- Poor working conditions;
- Lack of dedicated procedures for indicators;
- Poor performance of SMIS – the system should allow access for beneficiaries and should enable the input of project and KAI level indicators;
- Insufficient communication within and between stakeholder organisations.

There is lack of clarity among many stakeholders about the distinction between project and programme indicators, and between SMIS and the programme indicator system.

1.2. PRELIMINARY CONCLUSIONS

A horizontal issue for all OPs recognised by the consultations is that although context and impact indicators are mentioned by the programming documents, they are not labelled and identified as such.

Although differences exist according to the specifics of each OP, a common point that becomes apparent from the surveys is that a significant amount of indicator duplication exists. Moreover, as far as core indicators are concerned, these are not fully transcribed in the national indicator system.

The consultations have indicated the need for procedures dedicated to working with indicators. An implicit modus-operandi is currently functioning and the activities related to collecting, measuring, processing and monitoring of indicators are partially covered by other procedures. Nonetheless, this omission perpetrates a vague allocation of responsibilities.

The surveys have indicated that although SMIS is functional, it does not fully answer the indicator needs at NSRF and OP level.

2. ANALYSIS OF THE INDICATORS SYSTEM

2.1. COVERAGE OF THE INDICATORS SYSTEM

2.1.1. SOCIO-ECONOMIC ENVIRONMENT

The main purpose of context indicators is to provide information on the current socio-economic environment in which the strategy is implemented.

The context indicators were in the programming phase used for the analysis of the situation in terms of strengths and weaknesses in order to identify and quantify the needs of the envisaged sectors. In the implementation phase they are relevant in order to monitor the overall development in relevant areas of the sector.

In the NSRF a list of context indicators was not provided, but several potential specific context indicators could be identified through the screening exercise carried out by us at the level of the socio-economic analysis and SWOT in the programming document. We noticed that the analysis of the current situation within the NSRF was based on the most significant trends occurred in different sectors, reflected by several macro-economic indicators.

Thus, we may draw certain *preliminary conclusions* as follows:

- Some context or quasi-context/impact indicators are already contained in NSRF;
- There is some ambiguity regarding whether some impact indicators may actually be better as context indicators;
- Context indicators are relatively easily dealt with in that they are generally drawn from national or international statistical sources.

Therefore, it would be advisable to consider ***the formal inclusion in the monitoring system of a number of context indicators*** reflecting the identified fields addressed by the NSRF. The analysis of the current situation offered us a clear view on the most important sectoral context indicators and their history.

In addition, a number of NSRFs from other EU Member States (MS) were analysed, to check for international good practice. As a result, the identified context indicators used by other MS were mapped against the five main themes targeted by the Romanian strategic document in the comparative table presented in the following pages (Figure 1).

Finally, all four sub-sections (strengths, opportunities, weaknesses and threats) of the SWOT analysis were considered in determining the proposed list of potential context indicators, as they offer a series of the issues that have to be maximised or, on the contrary, alleviated, as well as of the ones that have to be taken into account or risk prevented.

Furthermore, the availability of the proposed indicators from official statistical sources was considered (e.g. National Institute of Statistics, Ministry of Transport database, Romanian Police).

As a result, the Figure 2 encompasses the context indicators that were considered relevant for the NSRF implementation.



FIG. 1 BENCHMARK OF CONTEXT INDICATORS

Fields targeted by NSRF	Potential context indicators resulting from the NSRF analysis	Context indicators targeted by the NSRF Czech Republic	Context indicators targeted by the NSRF Hungary	Context indicators targeted by the NSRF Poland
<p>1. Infrastructure covers issues like road transport, railway transport, water transport, air transport, inter-modality, sustainable transport, water and wastewater infrastructure, waste management, air pollution and climate change, nature protection, risk prevention, energy efficiency.</p>	<ul style="list-style-type: none"> - Density of public roads - Passengers/freight road traffic - Number of road accidents (deaths/1mil. passenger-vehicle) - Density of railway - Rail freight transport - Ports traffic capacity - Freight transported on inland waters - Passengers and freight air traffic - % of population connected to drinking supply/sewage network - % of wastewater sufficiently treated - % of population covered by sanitation services - % of recyclable materials recovered - % of industrial waste recovered - Decrease of pollutants emissions in the air - Life losses due to natural disasters (no.) - Material damages due to natural disasters (EUR) - Decrease of energy intensity - Increase of energy efficiency 	<ul style="list-style-type: none"> - Energy intensity of the economy 		<ul style="list-style-type: none"> - Investment expenditure for the protection of environment (% GDP)

Fields targeted by NSRF	Potential context indicators resulting from the NSRF analysis	Context indicators targeted by the NSRF Czech Republic	Context indicators targeted by the NSRF Hungary	Context indicators targeted by the NSRF Poland
<p>2. <u>Economic competitiveness</u> covers issues like productivity growth, business support services and infrastructure, certification and eco-innovation, entrepreneurial development, access to finance, RDI, ICT, tourism</p>	<ul style="list-style-type: none"> - GDP per capita - Real GDP growth rate - Foreign trade (imports, exports, deficits) - Foreign direct investments (FDI) - Inflation rate - Public deficit - Labour productivity - No. of SMEs/1000 inhabitants - Micro-finance market portfolio - % of RDI in GDP - No. of researchers/1000 employees - % of ICT in GDP - Broadband connections penetration rate - % of tourism in GDP - Tourism accommodation capacity 	<ul style="list-style-type: none"> - Real GDP growth - Rate of inflation - Aggregate productivity of labour - Gross fixed capital formation - State budget balance in GDP - Balance of Government deficit in GDP - Volume of exports - GDP per capita in PPS - Productivity of labour in PPS/hour - Expenditure on R&D as a % of GDP - Regional difference of GDP per inhabitant – in PPS 	<ul style="list-style-type: none"> - Annual volume index of the GDP 	<ul style="list-style-type: none"> - GDP growth (to the previous year) - Foreign direct investments as % in the growth of gross capital - Share of the state-owned enterprises in the added value - Changes in the real gross disposable income per capita in the sector of households in 2 poorest regions in absolute terms - Changes in the real gross disposable income per capita in the sector of households in 2 richest regions in absolute terms
<p>3. <u>Human capital</u> covers issues like education and training, guidance and counselling, employment and combating unemployment, adaptability and flexibility, social inclusion, health and welfare</p>	<ul style="list-style-type: none"> - Employment/unemployment rate (inhabitants aged 15 to 64 years) - Early school leaving rate - Labour force migration rate - Hospital beds/1000 inhabitants 	<ul style="list-style-type: none"> - Employment rate (inhabitants aged between 15 and 64 years) - Long-term unemployment rate - Total public expenditure on education as a % of GDP 	<ul style="list-style-type: none"> - Human Development Index (HDI) - National employment rate 	<ul style="list-style-type: none"> - Indicator of the threat by poverty (after including social transfers in the income of households) - Employment share in the sectors of the economy (I, II, III) - Unemployment rate according to BAEL¹ (w/m) - Long-term unemployment rate (m/w) - Diversity of the registered unemployment rate in sub-regions (NUTS III)

¹ Labour Force Survey carried out by Central Statistic Office in Poland



Fields targeted by NSRF	Potential context indicators resulting from the NSRF analysis	Context indicators targeted by the NSRF Czech Republic	Context indicators targeted by the NSRF Hungary	Context indicators targeted by the NSRF Poland
<p>4. <u>Administrative capacity</u> covers issues like strengthening the institutional management capacity of the central and local administration, decentralisation/ de-concentration of administration at local level, integrated planning, use of budgetary and non-budgetary resources, efficient use of Structural Instruments</p>	<ul style="list-style-type: none"> - On-line availability of public services (%) - Absorption rate of Structural and Cohesion Funds 			
<p>5. <u>Territorial development</u> covers issues like infrastructure, regional cohesion, urban development, rural development, European territorial cooperation, trans-national cooperation, inter-regional cooperation</p>	<ul style="list-style-type: none"> - GDP/capita/region - Unemployment rate/region - FDI/capita/region - SMEs/1000 inhabitants/region - Rural population/region (%) - Urban population/region (%) - Level of education/region 			

FIG. 2 PROPOSED LIST OF CONTEXT INDICATORS FOR NSRF

Context indicators suggested for the NSRF Romania	Rationale
	SWOT analysis
Density of higher class roads (km/thou inhabitants)	(W) Insufficient and degraded transport infrastructure
Share of population connected to drinking supply/sewage network (%)	(W) Inadequate delivery of basic utilities (water, sewerage and waste disposal)
Pollutants emissions in the air, by type	(W) Pollution in hot spot areas, mainly as result of emissions from large combustion plants
Energy intensity (Mwh)	(W) Inefficient use of energy and high losses along the entire energy chain (T) Risk of increased energy dependence on external sources
GDP growth rate (%)	(T) Difficult business and financial environment (T) Unregistered (black) economy
Foreign trade (imports, exports, deficits) (EUR)	(T) Increased exposure to global markets (T) Periods of stagnation or economic decline in European and global markets
Productivity of labour in PPS/hour	(W) Low productivity
Share of RDI in GDP (%)	(W) Under investment in R&D
Occupancy rate of tourism accommodation (%)	(W) Weak tourism infrastructure and poor marketing
Employment/unemployment rate (%)	(W) Mismatch between education and labour supply and demand given the requirements of a modern market economy (W) Employment in the unregistered (black) economy
Human Development Index	(W) High levels of early school leaving and drop out (T) Decrease of interest in education for teachers, as well as for pupils / students
Hospital beds/1000 inhabitants	(W) Low quality of health and social services, especially in small towns and rural areas



2.1.2. OBJECTIVES COVERED

A key tool in analysing the consistency of the indicators at system level is to check their correlation with the objectives set at different levels of NSRF.

Our analysis covers the correlation between impact indicators and thematic priorities envisaged by NSRF. By correlating the indicators with objectives it was expected to identify:

- 1) Indicators that remain “outside” priorities;
- 2) Indicators that were inappropriately assigned to certain priorities;
- 3) Priorities for which impact cannot be measured for lack of indicators.

The first step consists in outlining the objectives of NSRF as well as the breakdown from global, to specific objectives (corresponding to thematic priorities). The **general objective** is “*To reduce the economic and social development disparities between Romania and the EU Member States, by generating a 15-20% additional growth of the GDP by 2015*”.

The strategic document identifies four **thematic priorities** that can be translated into specific objectives:

- ***Development of basic infrastructure to European standards;***
- ***Increasing the long term competitiveness of the Romanian economy;***
- ***Development and more efficient use of Romania’s human capital;***
- ***Building an effective administrative capacity.***

Integrated planning and the coordinated implementation of these priorities through the sectoral and regional operational programmes aim to achieve the highest impact of the Structural and Cohesion Funds and will ***promote a balanced territorial development***, as a **territorial priority**.

The impact of the NSRF strategy on the economic, social and environmental situation in Romania is measured through a set of basic indicators, for which indicative targets have been defined. Also, specific impacts at the level of the NSRF thematic priorities have been quantified.

BASIC INDICATORS AT THE LEVEL OF THE NSRF

Indicator	Unit	Source
GLOBAL IMPACT INDICATORS ESTABLISHED AT NSRF LEVEL		
Additional growth of GDP, aggregated for the period 2007-2013	%	Macroeconomic modelling (HEROM)
Additional gross capital formation (investments) growth, aggregated for the period 2007-2013	%	Macroeconomic modelling (HEROM)
Induced growth rate of GDP per employee	annual rate in %	National Statistics / surveys



Additional employment growth, aggregated for the period 2007-2013: - tradable sector (manufacturing) - non-tradable sector (services)	%	Macroeconomic modelling (HEROM)
New jobs created (direct and indirect) and maintained	No.	SMIS / National Statistics / surveys
SPECIFIC IMPACT INDICATORS OF THE 1ST THEMATIC PRIORITY		
Roads with access to West-European corridors completed and/or rehabilitated (TEN and national)	lane-km	Monitoring System
Population connected to basic water services in a regional system	%	MESD
Population covered by integrated waste management systems	% of total population	MESD
Reduction of the primary energy intensity compared to 2001	%	National Statistics / MET
SPECIFIC IMPACT INDICATORS OF THE 2ND THEMATIC PRIORITY		
Increase of SME's share of GDP	up to % of GDP	National Statistics / Agency for Projects and Programmes Implementation designated to SMEs
Gross domestic R&D expenditures (GERD)	%	National Statistics
Broadband penetration rate	No. of broadband connections /100 inhab.	National Statistics/ NRACIT
SPECIFIC IMPACT INDICATORS OF THE 3RD THEMATIC PRIORITY		
Employment rate of the population	%	National Statistics
Activity rate of the population aged 15-64	%	National Statistics
Share of the 25 - 64 age group with at least upper secondary education	%	National Statistics / surveys
SPECIFIC IMPACT INDICATORS OF THE 4TH THEMATIC PRIORITY		
Change in the level of trust / confidence of citizens in public administration: - central administration - local administration - government effectiveness	%	Surveys Surveys WB
Absorption rate of Structural and Cohesion Funds under the Convergence Objective	%	SMIS

Source: Government of Romania, *National Strategic Reference Framework 2007-2013*, final version, 2007, p. 91 <http://www.fonduri-ue.ro/upload/118786170647.pdf> [31.7.2010]



The following could be observed from analysing the link between objectives and indicators at the level of NSRF:

- 1) the indicators established at NSRF level can be associated with one of the thematic priorities; indicators established at priority level are by their nature specific to the interventions, so there are no indicators that remain “outside” these objectives;
- 2) no impact indicator established at priority level have been inappropriately assigned;
- 3) the impact related to each thematic priority can be measured due to the indicators established at this level. However, some other interventions may be allocated impact indicators, as follows:

Thematic priority	Impact indicator	Source
1st: Development of basic infrastructure to European standards	<ul style="list-style-type: none">- Increase in passengers/freight traffic by transport mode (passengers/km, tonnes/km)- Decrease of life losses caused by natural disasters (no.)	Surveys
2nd: Increasing the Long Term Competitiveness of the Romanian Economy	<ul style="list-style-type: none">- Increase of the Romanian products' export (EUR and %)- Increase of tourism share in the GDP formation (%)	National Statistics

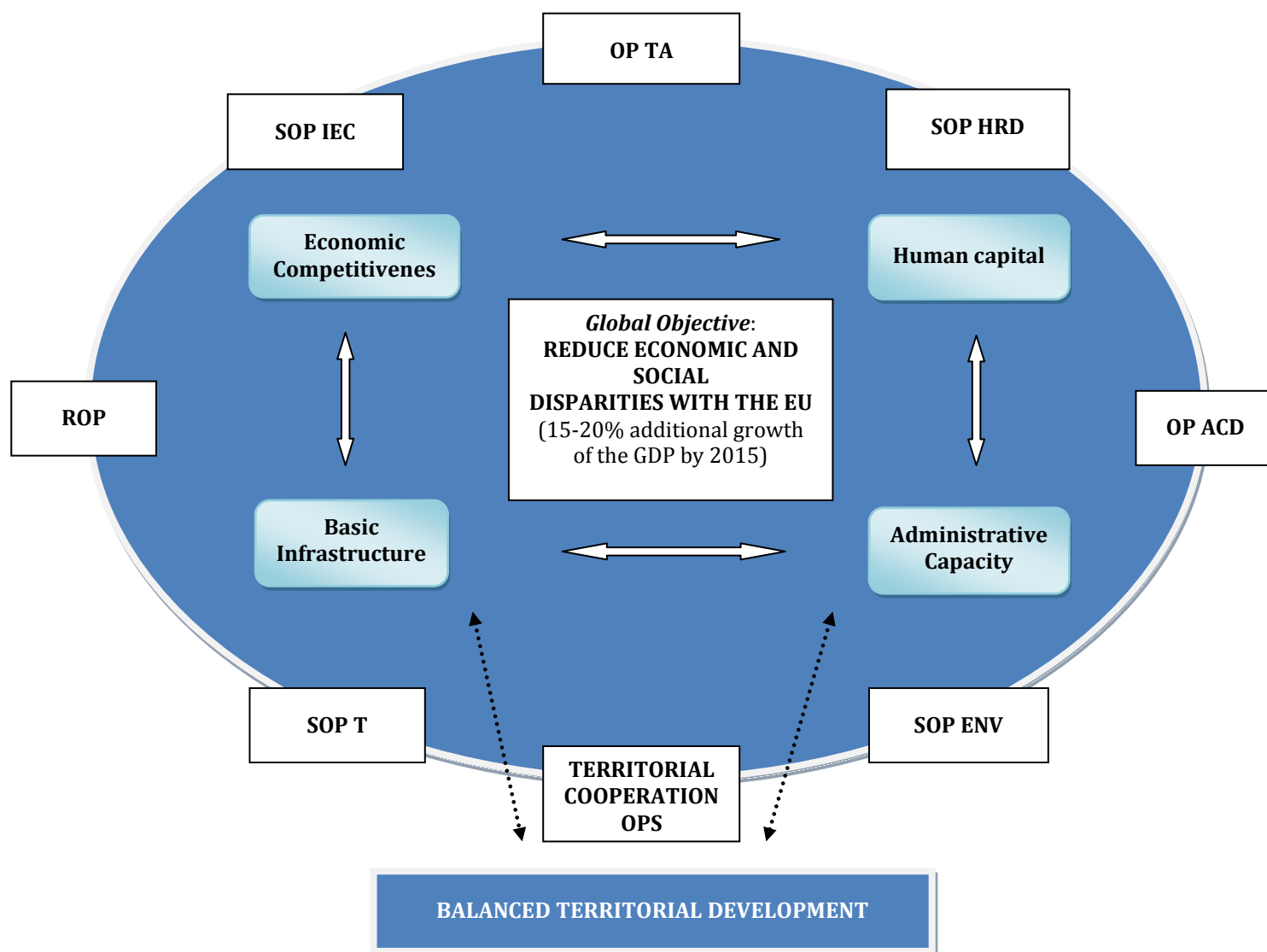
Preliminary remarks

The overall conclusion is that NSRF thematic priorities are sufficiently covered by existing impact indicators. Two of the priorities may still be allocated some more indicators in order to capture all types of interventions.

2.1.3. INTERVENTION LOGIC

The “intervention logic” was built on the cause-effect relationship among indicators at OPs’ level and impacts that are measured at NSRF level, considering that NSRF is implemented through the seven sectoral Operational Programmes developed in Romania, to which territorial cooperation is added. Once the OPs objectives achieved, they will lead to the attainment of the NSRF objectives.

The way in which OPs contribute to the achievement of the NSRF priorities is shown in the next diagram and treated in Table 3



Source: Government of Romania, *National Strategic Reference Framework 2007-2013*, final version, 2007, p.88



Fig. 3 Relation between OPs and NSRF Specific Objectives

Operational Programme	NSRF thematic priorities				
	Develop Basic Infrastructure to European Standards	Increase the Long-term Competitiveness of the Romanian Economy	Development and More Efficient Use of Romania's Human Capital	Building Effective Administrative Capacity	Promote Balanced Territorial Development
SOP T	✓	✓	✓	✓	✓
- PA1	✓	✓	✓		✓
- PA2	✓	✓	✓		✓
- PA3	✓				
- PA4	✓			✓	
SOP ENV	✓	✓		✓	✓
- PA1	✓	✓			✓
- PA2	✓	✓			✓
- PA3	✓				✓
- PA4	✓			✓	✓
- PA5	✓				✓
- PA6	✓			✓	
SOP IEC	✓	✓	✓	✓	✓
- PA1		✓	✓		✓
- PA2		✓	✓		✓
- PA3		✓	✓	✓	✓
- PA4	✓	✓			
- PA5		✓		✓	
ROP	✓	✓	✓	✓	✓
- PA1	✓	✓		✓	✓
- PA2	✓	✓			✓
- PA3	✓		✓		✓
- PA4	✓	✓	✓		✓
- PA5	✓	✓	✓		✓
- PA6	✓	✓	✓	✓	
SOP HRD	✓	✓	✓	✓	✓



- PA1	✓	✓	✓		✓
- PA2	✓	✓	✓		✓
- PA3		✓	✓		✓
- PA4		✓	✓	✓	✓
- PA5		✓	✓		✓
- PA6		✓	✓		✓
- PA7			✓	✓	
OP ACD	✓	✓	✓	✓	✓
- PA1	✓	✓	✓	✓	✓
- PA2	✓	✓	✓	✓	✓
- PA3				✓	
OP TA	✓	✓	✓	✓	✓
- PA1	✓	✓	✓	✓	✓
- PA2				✓	
- PA3	✓	✓	✓	✓	✓



The following preliminary conclusions could be drawn:

- 1) At NSRF level only impact indicators have been established, as the interventions contained by the document are applied through Operational Programmes. The system of indicators as it is designed follows the causal link between interventions and impact indicators; for example, interventions in infrastructure will impact accessibility on roads to West-European corridors;
- 2) There are a number of interventions for which impact cannot be measured due to the lack of indicators, as specified in section 2.1.2 Objectives covered.

Effects on environment

The following graphics broadly reflects the cause-effect relationship among interventions financed under NSRF and the three dimensions of sustainable development (economic, social and environmental):

- a) Economic: improved economic activity, due to investments in infrastructure (business, transport, water and sewage, etc.);
- b) Social: accessibility of population to water supply services, due to extended networks;
- c) Environment: reflected in the decreased air pollution due to modernisation of the heating systems.

In other words, investments in infrastructure, for example, can generate impacts: improving the transport network, contributing to economic activity, improving the social component (through accessibility and better services), and diminishing negative effects on environment.

At the same time, investments in environment protection will have long-term effects on human health, the same way investments in education have effects on inclusion in the labour market.

A logical system of indicators would therefore be able to reflect the investments (through interventions within thematic priorities), and the impact (through impact indicators). The relation between thematic priorities and impact areas are presented in the diagrams below.

	TYPES OF INTERVENTION	AREAS IMPACTED
Thematic Priority 1 – Development of basic infrastructure to European standards		
	<u>Infrastructure</u> <ul style="list-style-type: none"> - road transport, railway transport, water transport, air transport, inter-modality - water and wastewater, waste management - heating systems, protected sites, natural risk prevention - energy efficiency 	<ul style="list-style-type: none"> → Economic → Social → Environment → Health
Thematic Priority 2 – Increasing the long term competitiveness of the Romanian economy		
	<u>Economy & finance</u> <ul style="list-style-type: none"> - productivity growth, - certification and eco-innovation, entrepreneurial development, access to finance <u>Infrastructure</u> <ul style="list-style-type: none"> - tourism - business support 	<ul style="list-style-type: none"> → Economic → RDI



<ul style="list-style-type: none"> - RDI - ICT 	
Thematic Priority 3 – Development and more efficient use of Romania’s human capital	
<p>Infrastructure</p> <ul style="list-style-type: none"> - education and training - health <p>Education & training</p> <ul style="list-style-type: none"> - guidance and counselling <p>Social</p> <ul style="list-style-type: none"> - employment and combating unemployment, labour adaptability and flexibility, social inclusion 	<p style="text-align: right;">Social</p> <p style="text-align: right;">Health</p>
Thematic Priority 2 – Building an effective administrative capacity	
<p>Technical assistance</p> <ul style="list-style-type: none"> - strengthening the institutional management capacity of the central and local administration <p>Administrative reform</p> <ul style="list-style-type: none"> - decentralisation/ de-concentration of administration at local level, integrated planning, <p>Fund management</p> <ul style="list-style-type: none"> - use of budgetary and non-budgetary resources, efficient use of Structural Instruments 	<p style="text-align: right;">Administrative capacity</p>

As shown in the above diagram, one area of significant impact of transport investments is the environment.

In accordance with the provisions of the European and national environmental legislation, for the assessment of the potential effects of the infrastructure investments, the OPs were subject of Strategic Environment Assessment (SEA).

Furthermore, environmental monitoring should be carried out during OPs implementation, and after their completion. Thus, the SEA reports proposed **environmental indicators**, to be incorporated into the overall system of monitoring of each OP, which could be used selectively based on the characteristics of the projects selected for funding.

From analysing the link between SEA recommendations and environmental indicators at the OPs level it was observed that only some of the indicators were transposed from the SEA report/environmental certificate to the related Framework Implementation Documents.

According to the Managing Authorities, this is due to the fact that no technical expertise in this field was available when the FIDs were drafted.



2.2. MANAGEABILITY

This section assesses the main processes involved in working with NSRF indicators, namely collecting, measuring, processing, monitoring and communicating/reporting. The analysis covers also briefly the institutional context, the procedures and the resources available for running the above mentioned processes, from the specific NSRF viewpoint.

Institutions in charge with NSRF indicators	Types of indicators	Role	
		Direct	Indirect
ACIS	- Impact	- Defining - Communication	- Collecting - Processing - Measuring (Analysing) - Monitoring

Institutions

The Authority for the Coordination of Structural Instruments (ACIS) is the institution entrusted with the coordination of management and delivery of the Structural Instruments in Romania. Its tasks are to coordinate the programming, implementation and evaluation of Operational Programmes under the NSRF.

Due to the fact that NSRF is put in practice through operational programmes, ACIS holds a direct role only in the definition of indicators. **Data collection and monitoring** comes through MAs, which have in most cases an indirect connection with the beneficiaries. This makes the communication flow a little slower, ACIS depending on the processes developed by the IBs and MAs for each operational programme.

At political, management and operational levels, the following mechanisms oversee the NSRF implementation:

- **National Coordination Committee for Structural Instruments**, an inter-ministerial body whose members are the Ministers in-charge of the Managing Authorities of all the Operational Programmes supported by the Structural Instruments and the Certifying and Paying Authority; The Minister of Economy and Finance chairs the NCC;
- **Management Coordination Committee**, in charge with administrative and management issues with horizontal relevance to the OPs; the Head of ACIS coordinates the activity of this committee.

The existence of these mechanisms was thought for an easy correlation of MAs activity within OPs. In practice, continuity and availability of members, as well as different interests may slow down communication and work at NSRF level.

Procedures

Procedures related to monitoring, reporting or other processes are operated by each Managing Authority and IB. Nevertheless, more detailed instructions related to indicators collection should be further provided. MAs have developed specific instructions for the



beneficiaries with respects to collection, by requiring them to provide data on indicators in the financing requests and progress reports.

Resources

The tasks related to collection, monitoring and reporting of indicators belong to the staff of IBs and MAs. No other have been earmarked for the related activities.

Referring to human resources, the staff involved in indicators-related activities should be properly trained.

Defining indicators

A list of impact indicators for NSRF was defined during the programming exercise, and passed through the ex-ante evaluation. When defining indicators a special attention was paid to coverage of interventions and to labelling, the measurement unit being included in the definition. The sources of information were also indicated, most of the indicators being available from more than one source.

Collecting indicators

Once the indicators were defined and included in the NSRF, their collection becomes mandatory.

However, project level information is not enough to determine all required NSRF indicators, which is quite obvious. Only some of the result indicators may be compiled based on direct information from beneficiaries. For impact indicators a more complex analysis is required, which will imply more than information from beneficiaries (e.g. use of national statistics etc.)

The impact indicators have not been introduced in SMIS so Action Categories were not assigned either.

For the indicators which cannot be calculated based on input from beneficiaries, there is a need to define in a more clear way the collection procedure. This implies a closer link to official statistics and an enhanced capacity to analyse statistical indicators within MAs and ACIS. NSRF does not have currently any official context indicators, which is a weakness in terms of its overall monitoring. The proper collection of context indicators is also heavily related to existing of good and reliable statistics in the fields envisaged by the strategy.

Processing and measuring indicators

Processing and measuring indicators for NSRF should follow the general principles of a simple and flexible monitoring system:

- Should allow the aggregation of data from lower to higher level and the generation of monitoring reports (**vertical aggregation**).
- Should take into account the overall need at NSRF level for overall monitoring of the same intervention fields, which implies **horizontal aggregation** across OPs.

However, given the fact that no formal impact and context indicator was established for the OPs under NSRF, aggregation can only be done if such indicators will be officially adopted for each operational programme.

Already mentioned in the subsection related to collection, the issue of **connecting project level to programme level indicators** is crucial to facilitate proper processing and measuring of indicators at the OP level, and based on this at NSRF level. Currently, there is no perfect



match between the indicators required in the application process, the ones required in the progress/financial reporting and the programme indicators. The Applicants' Guide provides no clues on how and why the indicators should be collected and processed. Such mismatch hinders the full functionality of the SMIS in terms of automatically aggregating data, which sometimes leads to a situation where the MAs are processing/measuring programme indicators using other more time consuming and costly means, such as manual analysis outside SMIS.

Progress monitoring

As part of the Cohesion Fund rules, on NSRF **monitoring is undertaken only at national level** (NUTS 1). While programmes developed at sub-national/regional level involve a multitude of stakeholders, who may influence the choice of monitoring indicators, for the programmes developed at national level, the central government (represented by ACIS) is, *de facto*, the only actor in any monitoring arrangement.

Monitoring of impact and context indicators should be done starting 2 years after the programme commencement, so the projects financed could have minimum 6 months operation time.

Communication

The specificity of NSRF is that is addressed to a high number of stakeholders, specific to each OP, and to the general public, as a whole. Communication channels and messages should be differentiated depending on the target groups and should be carried out by each MA, but also by ACIS, at NSRF level (impact indicators).

It is to be mentioned that, the lower sensitivity to time of indicators (as impact indicators generally are) implies that their value will be available for reporting only at larger time intervals.

The general public is more aware of the output indicators than of the impact ones, which reduces the pressure on reporting from the Romanian society.



FIG. 4 SYNTHESIS OF THE ANALYSIS OF THE SYSTEM OF INDICATORS

IMPACT INDICATORS						
LEVEL	Crt no	Indicators	Recommendation	Rationale		
				COVERAGE	BALANCE	MANAGEABILITY
NSRF	1.	Additional growth of GDP, aggregated for the period 2007-2013 (%)	Keep			
	2.	Additional gross capital formation (investments) growth, aggregated for the period 2007-2013 (%)	Keep			
	3.	Induced growth rate of GDP per employee (%)				
	4.	Additional employment growth, aggregated for the period 2007-2013 (%): - tradable sector (manufacturing) - non-tradable sector (services)	Keep			
	5.	New jobs created (direct and indirect) and maintained (no.)	Keep			
TP 1	6.	Roads with access to West-European corridors completed and/or rehabilitated (TEN and national) (km)	Remove			Incorrectly assigned as impact indicator, instead of output.
	7.	Population connected to basic water services in a regional system (%)	Keep			
	8.	Population covered by integrated waste management systems (%)	Keep			
	9.	Reduction of the primary energy intensity compared to 2001 (%)	Keep			
	*	Increase in passengers/freight traffic by transport mode (passengers/km, tonnes/km)	Add			
	*	Decrease of life losses caused by natural disasters (no.)	Add	Reflects interventions in risk prevention		



IMPACT INDICATORS

LEVEL	Crt no	Indicators	Recommendation	Rationale		
				COVERAGE	BALANCE	MANAGEABILITY
TP 2	10.	Increase of SME's share of GDP (%)	Keep			
	11.	Gross domestic R&D expenditures (GERD) (%)	Keep			
	12.	Broadband penetration rate (no. / 100 inhabitants)	Keep			
	*	Increase of the Romanian products' export (EUR and %)	Add	Reflects interventions in enterprises support		
	*	Increase of tourism share in the GDP formation (%)	Add	Reflects interventions in tourism		
TP 3	13.	Employment rate of the population (%)	Keep			
	14.	Activity rate of the population aged 15-64 (%)	Keep			
	15.	Share of the 25 – 64 age group with at least upper secondary education (%)	Keep			
TP 4	16.	Change in the level of trust / confidence of citizens in public administration (%): <ul style="list-style-type: none"> - central administration - local administration - government effectiveness 	Keep			
	17.	Absorption rate of Structural and Cohesion Funds under the Convergence Objective (%)	Keep			

FIG. 5 RESULTS OF THE OVERALL ANALYSIS OF THE SYSTEM OF INDICATORS

IMPACT INDICATORS	
NSRF	1. Additional growth of GDP, aggregated for the period 2007-2013 (%)
	2. Additional gross capital formation (investments) growth, aggregated for the period 2007-2013 (%)
	3. Induced growth rate of GDP per employee (%)
	4. Additional employment growth, aggregated for the period 2007-2013 (%): - tradable sector (manufacturing) - non-tradable sector (services)
	5. New jobs created (direct and indirect) and maintained (no.)
TP1 - Development of Basic Infrastructure to European Standards	1. Population connected to basic water services in a regional system (%)
	2. Population covered by integrated waste management systems (%)
	3. Reduction of the primary energy intensity compared to 2001 (%)
	4. Increase in passengers/freight traffic by transport mode (passengers/km, tonnes/km)
	5. Decrease of life losses caused by natural disasters (no.)
TP 2 - Increasing the Long Term Competitiveness of the Romanian Economy	1. Increase of SME's share of GDP (%)
	2. Gross domestic R&D expenditures (GERD) (%)
	3. Broadband penetration rate (no. / 100 inhabitants)
	4. Increase of the Romanian products' export (EUR and %)
	5. Increase of tourism share in the GDP formation (%)
TP 3 - Development and More Efficient Use of Romania's Human Capital	1. Employment rate of the population (%)
	2. Activity rate of the population aged 15-64 (%)
	3. Share of the 25 - 64 age group with at least upper secondary education (%)
TP 4 - Building Effective Administrative Capacity	1. Change in the level of trust / confidence of citizens in public administration (%): - central administration - local administration - government effectiveness
	2. Absorption rate of Structural and Cohesion Funds under the Convergence Objective (%)



CONTEXT INDICATORS

Density of higher class roads (km/thou inhabitants)

Share of population connected to drinking supply/sewage network (%)

Pollutants emissions in the air, by type

Energy intensity (Mwh)

GDP growth rate (%)

Foreign trade (imports, exports, deficits) (EUR)

Productivity of labour in PPS/hour

Share of RDI in GDP (%)

Occupancy rate of tourism accommodation (%)

Employment/unemployment rate (%)

Human Development Index

Hospital beds/1000 inhabitants



3. ANALYSIS OF THE INDIVIDUAL INDICATORS

The analysis of the individual indicators consisted of the examination of the impact indicators **upshot from the analysis at system level.**

This list of impact indicators was assessed against the four criteria for quality indicators as set out in the ToR, based on the DG Regional Policy Guidelines namely: “relevance”, “sensitivity”, “availability” and “cost”. Each indicator will be marked as explained in the textbox below.

Relevance: (+) little relevance; (++) relevant

Sensitivity: (+) low sensitivity (the indicator has very limited response when changes occur in the variable to be measured and can be influenced by a lot of external factors); (++) sensitive (the indicator is fully responsive to the changes in the variable to be measured and is not influenced by external factors).

Availability: (+) limited availability (it is difficult to collect/update regularly, due to calculation method, source etc.) (++) available (does not pose any difficulties for collection/update)

Cost: (+) high costs (specific studies, surveys at MA/ACIS etc.), (++) low cost (no additional costs for collection, other than regular reporting requirements and input into the electronic system)

Comments have been made in relation to each of the above issues. The analysis of the individual indicators of NSRF can be found in **ANNEX I**.

Overall, the individual indicators of NSRF have scored relatively high *for the criteria of relevance and cost*. *In terms of sensitivity and availability*, due to the fact that we deal with impact indicators, it is normal to have lower scores.

4. SUMMARY OF RECOMMENDATIONS

NEEDS ASSESSMENT

1. In respect to the appropriateness and the actual use of indicators, the knowledge base at the level of the MA is currently limited; **therefore, it is recommended that training and instructions specifically designed for working with indicators be provided through additional TA.**
2. The survey has indicated the need for procedures dedicated to working with indicators. An implicit modus-operandi is currently functioning and the activities related to collecting, measuring, processing and monitoring of indicators are partially covered by other procedures. Nonetheless, this omission perpetrates a vague allocation of responsibilities. **It is advisable to have dedicated procedures for working with indicators. These procedures should have a common approach across OPs and should be done under ACSI coordination.**
3. In order to have a complete and accurate image of the progress of the implementation, not only for Technical Assistance, but for all types of interventions, both quantitative



and qualitative information is needed. **It is suggested that the Evaluation Plan for NSRF include thematic evaluations for assessing the quality of the interventions, such as the value added of the OP on increasing accessibility, the effectiveness of the interventions etc.**

4. There is a clear need for having a definitive list agreed with the European Commission. **Therefore, it is highly advisable that the process of negotiations and defining a final list of indicators for NSRF be given priority.**
5. As implementation will progress, more knowledge will be achieved, on all tiers – performance, capacity of beneficiaries, and appropriateness of indicators. The feedback provided by the use of indicator systems should be used for continuous improvement both in terms of policy but also in terms of the indicator system itself. **It is recommended that ACIS and all relevant stakeholders be actively involved in the process of improving the system of indicators.**
6. There is a lack of correlation with other OPs (ROP, SOP HRD and OPTA, for example), for cross-cutting indicators, such as “number of participants”, “length of road” etc. **It is suggested that a common approach be enforced and observed by ACIS in coordination with the respective MAs.**

ANALYSIS OF THE INDICATORS SYSTEM

1. It is advisable that **new impact indicators be introduced to fill the gaps in coverage.** Indicators could be generated by all interventions envisaged. However, it is not practical to attach indicators to all of them. It is preferable to concentrate on developing indicators for the more prominent interventions only.
2. Given that the European Commission underlines the utility of context indicators and that the need for this type of indicators has precisely resulted from the analysis performed, it is recommended that **context indicators be introduced and properly defined** for NSRF. A list was presented in the previous sections.

LIST OF INDICATORS

The recommended list of indicators for NSRF is built based on the findings, conclusions and recommendations of all the previous chapters and aims at bringing improvements both at the level of the system and at the level of individual indicators.

The final list of impact indicators recommended to be collected for NSRF is included in Table 6.

ANNEX I

Impact indicators

1) ADDITIONAL GROWTH OF GDP, AGGREGATED FOR THE PERIOD 2007-2013 (%)

Relevance	++	The indicator measures the impact of the investments in transport, business support, or tourism infrastructure or productive investment. It is linked with the global objective of NSRF: reduce economic and social disparities with the EU (15-20% additional growth of the GDP by 2015).
Sensitivity	++	The indicator captures relative immediately the effects of the intervention.
Availability	+	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	+	The indicator is calculated using the Macroeconomic modelling (HEROM), which may be costly.

2) ADDITIONAL GROSS CAPITAL FORMATION (INVESTMENTS) GROWTH, AGGREGATED FOR THE PERIOD 2007-2013 (%)

Relevance	++	The indicator measures the impact of the investments in the business sector. It is linked with the global objective of NSRF.
Sensitivity	++	The indicator captures relatively immediately the effects of the intervention.
Availability	+	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	+	The indicator is calculated using the Macroeconomic modelling (HEROM), which may be costly.

3) INDUCED GROWTH RATE OF GDP PER EMPLOYEE (%)

Relevance	++	The indicator is a proxy for productivity. It is linked with the specific objectives of thematic priorities that encourage increase of economic competitiveness.
Sensitivity	++	The indicator captures relatively immediately the effects of the intervention.
Availability	+	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The indicator is calculated by the National Statistics; relation with the strategy's implementation should be established.

4) ADDITIONAL EMPLOYMENT GROWTH, AGGREGATED FOR THE PERIOD 2007-2013: (%)

- TRADABLE SECTOR (MANUFACTURING)
- NON-TRADABLE SECTOR (SERVICES)

Relevance	++	The indicator measures the impact of the interventions in infrastructure, production and human capital. It is linked with the specific objective of the thematic priorities that encourage the increase of economic competitiveness, extension/modernisation of infrastructure, education/training and social inclusion.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other factors.
Availability	+	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	+	The indicator is calculated using the Macroeconomic modelling (HEROM), which may be costly.

5) NEW JOBS CREATED (DIRECTLY AND INDIRECTLY) AND MAINTAINED (NO.)

Relevance	++	The indicator measures the impact of the interventions in infrastructure and production. It is linked with the specific objective of the thematic priorities that encourage the increase of economic competitiveness, extension/modernisation of infrastructure, education/training and social inclusion.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other factors.
Availability	+	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The indicator is calculated by the National Statistics.

6) POPULATION CONNECTED TO BASIC WATER SERVICES IN A REGIONAL SYSTEM (NO.)

Relevance	++	The indicator measures the impact of the interventions in infrastructure. It is linked with the specific objective of the thematic priority that encourages the development of basic infrastructure to European standards.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other factors, such as cost of services, existing alternatives.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The information can be obtained from the Ministry of Environment and Forests. The collection cost is low.

7) POPULATION COVERED BY INTEGRATED WASTE MANAGEMENT SYSTEMS (%)

Relevance	++	The indicator measures the impact of the interventions in infrastructure. It is linked with the specific objective of the thematic priority that encourages the development of basic infrastructure to European standards.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other factors, such as cost of services, existing alternatives.

Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The information can be obtained from the Ministry of Environment and Forests. The collection cost is low.

8) REDUCTION OF THE PRIMARY ENERGY INTENSITY COMPARED TO 2001 (%)

Relevance	++	The indicator measures the impact of the interventions in energy-related infrastructure. It is linked with the specific objective of the thematic priority that encourages the development of basic infrastructure to European standards.
Sensitivity	++	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	+	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	+	The indicator is calculated by the National Statistics and is also available at the Minister of Economy, Trade and Business Environment.

9) INCREASE IN PASSENGERS/FREIGHT TRAFFIC BY TRANSPORT MODE (PASSENGERS/KM; THOUSAND TONNES/KM)

- RAILWAYS
- INLAND WATERS
- MARITIME
- AIRPORTS

Relevance	++	The indicator measures the impact of the interventions in transport infrastructure. It is linked with the specific objective of the thematic priority that encourages the development of basic infrastructure to European standards.
Sensitivity	++	The indicator captures relatively immediately the effects of the intervention.
Availability	+	In order to quantify the effects of the projects a dedicated study needs to be elaborated.
Cost	+	The elaboration of traffic studies may be costly.

10) DECREASE OF LIFE LOSSES CAUSED BY NATURAL DISASTERS (NO.)

Relevance	++	The indicator measures the impact of the interventions in risk prevention infrastructure. It is linked with the specific objective of the thematic priority that encourages the development of basic infrastructure to European standards.
Sensitivity	++	The indicator captures relatively immediately the effects of the intervention.
Availability	+	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.

Cost	+	The information should be collected in collaboration with the Police; the calculation of the indicator may be costly.
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11) INCREASE OF SME'S SHARE OF GDP (%)

Relevance	++	The indicator measures the impact of the interventions in business support. It is linked with the specific objective of the thematic priority that encourages the increase of economic competitiveness.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The indicator is already calculated by the National Statistics, being also available from the Agency for Projects and Programmes Implementation designated to SMEs

12) GROSS DOMESTIC R&D EXPENDITURES (GERD) (%)

Relevance	++	The indicator measures the impact of the interventions in R&D. It is linked with the specific objective of the thematic priority that encourages the increase of economic competitiveness.
Sensitivity	+	The indicator captures immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The indicator is already calculated by the National Statistics.

13) BROADBAND PENETRATION RATE (NO. / 100 INHABITANTS)

Relevance	++	The indicator measures the impact of the interventions in ICT. It is linked with the specific objective of the thematic priority that encourages the increase of economic competitiveness.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	+	The indicator is already calculated by the National Statistics.

14) INCREASE OF THE ROMANIAN PRODUCTS' EXPORT (EUR, %)

Relevance	++	The indicator measures the impact of the business support interventions. It is linked with the specific objective of the thematic priority that encourages the increase of economic competitiveness.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.

Cost	++	The indicator is calculated by the National Statistics.
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15) INCREASE OF THE TOURISM SHARE IN THE GDP FORMATION (%)

Relevance	++	The indicator measures the impact of the business support and infrastructure interventions. It is linked with the specific objective of the thematic priority that encourages the increase of economic competitiveness.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The indicator is calculated by the National Statistics.

16) EMPLOYMENT RATE OF THE POPULATION (%)

Relevance	++	The indicator measures the impact of the interventions in education and labour market inclusion. It is linked with the specific objective of the thematic priority that encourages the human capital development.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The indicator is calculated by the National Statistics.

17) ACTIVITY RATE OF THE POPULATION AGED 15 – 64 YEARS (%)

Relevance	++	The indicator measures the impact of the interventions in labour market inclusion. It is linked with the specific objective of the thematic priority that encourages the human capital development.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.
Cost	++	The indicator is calculated by the National Statistics.

18) SHARE OF THE 25 – 64 AGE GROUP WITH AT LEAST UPPER SECONDARY EDUCATION (%)

Relevance	++	The indicator measures the impact of the interventions in education. It is linked with the specific objective of the thematic priority that encourages the human capital development.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	In order to quantify the effects of the strategy implementation, a dedicated study needs to be elaborated.

Cost	++	The indicator is calculated by the National Statistics. It can also be determined through surveys, which may be costly.
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19) CHANGE IN THE LEVEL OF TRUST/CONFIDENCE OF CITIZENS IN PUBLIC ADMINISTRATION (%):

- CENTRAL ADMINISTRATION
- LOCAL ADMINISTRATION

Relevance	++	The indicator measures the impact of the interventions in administrative capacity. It is linked with the specific objective of the thematic priority that envisages the increase of administrative capacity of central and local authorities.
Sensitivity	++	The indicator captures relatively immediately the effects of the intervention.
Availability	+	The calculation of the indicator requires specific studies
Cost	+	The calculation of the indicator may be costly.

20) ABSORPTION RATE OF STRUCTURAL AND COHESION FUNDS UNDER THE CONVERGENCE OBJECTIVE (%):

Relevance	++	The indicator measures the impact of the interventions in administrative capacity. It is linked with the specific objective of the thematic priority that envisages the increase of administrative capacity of central and local authorities.
Sensitivity	+	The indicator captures relatively immediately the effects of the intervention, but it can be influenced by other external factors.
Availability	++	The indicator is available from the SMIS system.
Cost	++	The calculation of the indicator is low.