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Study on the use of ERDF/CF common indicators by Member States in the 2021-2027 period and possibility of using common indicators in a system of “payments not based on costs”

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Study on the use of ERDF/CF common indicators by Member States in the 2021-2027 period and possibility of using common indicators in a system of “payments not based on costs”

Final Report

Directorate-General for for Regional and Urban Policy

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Contents

Acronyms

CF	Cohesion Fund
EC	European Commission
ECA	European Court of Auditors
ERDF	European Regional Development Fund
FNLC	Financing Not Linked to Costs
IF	Intervention Field, as defined in Annex I of Regulation (EU) 2021/1060
JTF	Just Transition Fund
M&E	Monitoring and evaluation
M&T	Milestones and Targets
MS	Member State
PO	Policy Objective, ref. Art. 5(1) of Reg. (EU) 2021/1060
RACER	Relevant, Accepted, Credible, Easy, Robust
RBF	Result-based financing
R&I	Research and Innovation
RRF	Recovery and Resilience Facility
RRP	Recovery and Resilience Plans
RSO	Regional Specific Objectives
SO	Specific Objective, ref: Art. 3 Reg. (EU) 2021/1058
SCO	Simplified Cost Options
SME	Small and Medium-sized Enterprise
SWD	Staff Working Document
TEN-T	Trans-European Transport Network
TN	DG REGIO Transnational Network on Simplification

Glossary

Term	Definition
European Regional Development Fund (ERDF)	*European Regional Development Fund*. One of the main EU Cohesion Policy funds, designed to strengthen economic, social and territorial cohesion in the European Union Further details are provided in Regulation (EU) 2021/1058.
Cohesion Fund (CF)	*Cohesion Fund*. A fund under EU Cohesion Policy that supports Member States with a gross national income (GNI) below 90% of the EU average, in the field of environment and trans-European networks in the area of transport infrastructure (TEN-T). Further details are provided in Regulation (EU) 2021/1058.
Financing Not Linked to Costs (FNLC)	Based on Article 125 of the Financial Regulation (Regulation (EU, Euratom) 2018/1046), FNLC is a simplified form of Union financing whereby payments are made upon (i) the fulfilment of predefined conditions, or (ii) the achievement of results, rather than by reimbursing actual costs incurred. FNLC is further defined in Article 95 of Regulation (EU) 2021/1060.
Common Indicators	Standardised output and result indicators defined by the regulatory framework to ensure comparability across programmes and Member States in ERDF and CF. Common indicators are listed in Annex I of the ERDF/CF Regulation (Regulation (EU) 2021/1058) and are further defined and explained in the Commission Staff Working Document ‘Performance, monitoring and evaluation of the European Regional Development Fund, the Cohesion Fund and the Just Transition Fund in 2021-2027’.
Output Indicator	A type of common indicator that measures the specific deliverables of an intervention (e.g., kilometres of road built, number of enterprises supported).
Result Indicator	A type of common indicator measuring the immediate effects of the intervention with particular reference to the

	direct addressees (e.g., jobs created, increase in energy efficiency).
Process Indicator	An indicator linked to an administrative, procedural, or institutional achievement. This type of indicator is not included in the list of common indicators but was widely used to measure the achievement of milestones under the RRF.
Milestones	Predefined intermediate targets (often measured by process and output indicators) used to assess progress in a results-based funding framework and trigger payments.
Targets	Pre-agreed value to be achieved at the end of the eligibility period in relation to an indicator included under a specific objective (Article Regulation (EU) 2021/1060).
Policy Objective (PO)	One of five strategic priorities under EU Cohesion Policy 2021–2027, such as a *Smarter Europe (PO1)* or a *Greener Europe (PO2)*. Each PO contains Specific Objectives. Policy objectives are described in Article 5 of Regulation (EU) 2021/1060.
Specific Objective (SO)	Sub-objectives under each Policy Objective that define the concrete thematic focus of funding (e.g. increasing SME competitiveness under PO1). Specific objectives relevant for this study are described in Article 3 of the ERDF/CF Regulation (Regulation (EU) 2021/1058).
Investment Action	A more granular categorisation of the types of actions funded at the specific objective level (e.g. under SO 2.1 – Energy Efficiency: energy efficiency in enterprises, energy efficiency in housing, energy efficiency in public infrastructure) contributing to indicator valorisation. This classification is based on Annex I of the Regulation (EU) 2021/1060. (intervention fields), the correspondence table from the Cohesion Data Platform, and a textual analysis of programme actions.
Investment Action Matrix (IAM)	Investment Action Matrices were developed within this study to assess the suitability of common indicators for the FNLC approach. Each Matrix combines a process indicator (linked to an administrative, procedural, or

	institutional achievement), a common output indicator (serving as a proxy for intermediate delivery), and a common result indicator (serving as a proxy for intended outcomes), thereby covering the full intervention logic of different types of investment actions.
Managing Authorities (MAs)	National or regional bodies designated by Member States to manage and implement EU-funded programmes, including the selection, monitoring, and evaluation of projects.
Methodological Documents (MDs)	In accordance with Article 17 of Regulation (EU) 2021/1060, methodological documents define the performance framework, detailing the choice of indicators, baselines, milestones, and targets by specific objective. The performance framework consists of output and result indicators, milestones for output indicators and targets for 2029 for output and result indicators.
RRF	*Recovery and Resilience Facility*. An EU instrument supporting post-COVID-19 recovery through results-based financing, where payments are made upon achievement of agreed milestones and targets.
European Court of Auditors (ECA)	The EU institution responsible for auditing the EU's finances, including the effectiveness and efficiency of Cohesion Policy instruments and indicators.

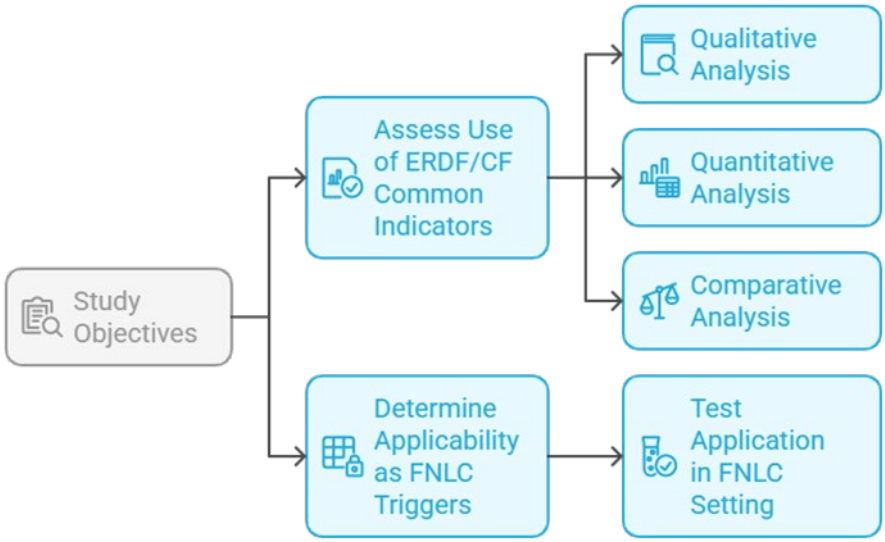
Executive Summary

The overall aim of the study is to determine whether the European Regional Development Fund (ERDF) / Cohesion Fund (CF) programme performance framework methodologies for 2021–2027, or elements thereof, could be applied within a future system of "financing not linked to costs" (FNLC) ([1]). The aim of the study has two key objectives:

- **First**, to assess the use of ERDF/CF common indicators during the 2021–2027 programming period.
- **Second**, to determine whether these indicators could, at least partially, serve as triggers for payments within an FNLC framework.

Each of these two objectives has been pursued through four specific tasks, comprising: a qualitative analysis, a quantitative analysis, a comparative analysis, and a final testing phase (see figure below).

Figure 1: Objectives and analysis of the Study



The following pages present the **key findings** emerging from the qualitative analysis, the quantitative analysis, the comparative analysis, and the final testing phase.

([1]) For the sake of clarity, in this study the term *Financing Not Linked to Costs* (FNLC) is used in accordance with the definition provided in Article 125 of the Financial Regulation (Regulation (EU, Euratom) 2018/1046). FNLC refers to a simplified form of Union financing whereby payments are made upon the fulfilment of predefined conditions, without the obligation to demonstrate or report the actual costs incurred.

I - Assessing the use of ERDF/CF common indicators during the 2021–2027 programming period.

Quantitative analysis

The key findings regarding **quantitative analysis** relate to three aspects: frequency (i.e., the number of times indicators are used across adopted programmes), relevance (i.e., the significance of indicators based on budget allocation), and consistency (i.e., the extent to which programmes with comparable financial allocations have set similar targets). The key findings are:

(i) The most frequent and relevant indicators—both output and result—are primarily associated with a subset of Specific Objectives (SOs) under Policy Objective (PO) 1 ([2]), which is also receiving the highest share of allocations.

(ii) The majority of the most frequently used and relevant indicators are relatively generic, can measure the deliverable and the effect of an array of different projects falling under different SOs.

(iii) Overall, result indicators are used less frequently than output indicators. This is true both in terms of absolute frequency and when indicators are counted separately by programme.

(iv) Unlike PO1 and PO5 ([3]), distinct SOs under PO2 ([4])and PO4 ([5]) feature different indicators among the top used. This appears to be related to the fact that the SOs under PO2, PO3 ([6]) and PO4 have a narrower thematic focus and can be more easily differentiated when measuring their deliverables and effect through thematically dedicated common indicators.

(v) The number of indicators used by Member State (MS) reflects factors such as the number of programmes in the country, the type of programme (regional vs. national), the country’s level of development (less developed regions have higher per capita budgets) the presence of one or multi categories of region and the thematic diversity agreed.

([2]) PO 1: a more competitive and smarter Europe:

([3]) PO 5: a Europe closer to citizens

([4]) PO 2: a greener, low-carbon, and resilient Europe

([5]) PO 4: a more social and inclusive Europe

([6]) PO 3: A more connected Europe

(vi) Consistency between an indicator's target value and financial allocation is influenced by the varied scope and specificity of the projects that the indicator measures.

(vii) The correlation between indicators' target values and financial amounts is stronger when calculated within the context of a single SO or Member State. The reason might be that projects using the same indicator within a specific SO or MS tend to be more similar, setting comparable target values with analogous financial amounts ERDF and CF regulation.

(viii) **The analysis of frequency, relevance, and consistency led to the identification of 43 indicators**. These were selected because they are more frequently used, consistent across programmes, and considered relevant. As such, they are deemed more "available" to Programme Authorities and were subsequently selected for more detailed qualitative assessment.

Qualitative analysis

The **qualitative analysis** focused on two aspects: coherence with the common indicator definitions and assumptions set out in the European Commission's Staff Working Document (SWD) (2021) 198 'methodological documents', and homogeneity. The homogeneity assessment, in particular, examined three dimensions: granularity, consistency in target-setting assumptions, and factors that may influence the achievement of indicator's milestones and targets. The qualitative analysis also provided specific insights into outlier programmes identified under the previous quantitative analysis. The following points summarise the key findings identified through the analysis:

(i) The coherence assessment shows that there are no methodological documents that define indicators inconsistently with the SWD guidelines and there are no substantial differences in definitions across specific objectives.

(ii) Regarding homogeneity, the following findings were observed concerning granularity: i) under PO1 multiple types of investment actions typically contribute to the valorisation of a single indicator; ii) in contrast, indicators under PO2, PO3, and PO4 tend to have a more consistent linkage between indicator and intervention type; iii) the case of PO5 is considered very specific and does not follow a general pattern. The target-setting practices and the timeliness of output and result indicators show notable variation, particularly in the case of result indicators. Measurement of results may occur upon output completion, in the short to medium term, or even after 12 months. This diversity in timing is particularly relevant in the context of FNLC, where payment is triggered upon achievement of results. Some programmes use different approaches or sources to establish unit costs, which could explain why they are outliers.

(iii) As for target-setting approaches: output targets are typically based on experience or ad hoc studies. Result targets are usually defined based on statistical sources and are closely linked to the related output indicators (i.e., result indicator target and measurement approaches are typically established based on the outputs they are in relation to).

(iv) Factors influencing milestone and target achievement are typically policy-related issues (e.g. budget limits, regulatory changes, implementation delays) and socio-economic conditions (e.g. price increases and crises).

(v) Outlier programmes identified in the quantitative analysis are not necessarily adopting incorrect assumptions but may behave differently from the average correlation between indicator targets and invested amounts. The review of methodological documents identifies two key factors that could explain this discrepancy: (1) programme actions may involve different types of beneficiaries, target groups, focus areas, or delivery modes. For example, supporting large or micro-enterprises, focusing on energy efficiency in industry or housing, using financial instruments or grants, can affect unit costs and programme delivery, explaining differences between programmes (2)lack of specification of investment actions or the use of umbrella investment actions. Some methodological documents do not specify the type of operations supported under each specific objective, while others use broad programme actions covering a wide and flexible set of possible interventions. This can affect the relationship between indicator targets and invested amounts, contributing to the outlier phenomenon.

Comparative analysis

The comparative analysis examined ERDF/CF common indicators against the milestones and targets used in the Recovery and Resilience Facility (RRF). The comparison demonstrates that:

(vi) Most ERDF/CF common output and result indicators relate to measurable deliverables / effects and do not include a wide set of process indicators, as in the RRF.

(vii) Under ERDF/CF, the use of common output and result indicators across multiple SOs allows the same outputs and results to be captured in many different contexts. In addition, this flexibility,combined with a common definition of indicators, makes the aggregation of data possible, e.g. at EU level.

(viii) RRF milestones and targets are diversified as they are tailored to the specific measures and to the specificities of the individual Member States, which leads to limitations in terms of aggregation.

(ix) The analysis of individual ERDF/CF common indicators as potential triggers for payments—similar to milestones and targets under the RRF—indicates that most of the indicators assessed demonstrate a high potential for use within a FNLC context.

II – The potential application of ERDF / CF common indicators in a FNLC context

Indicators were first tested for suitability in a FNLC context. The outcome is displayed in the indicator list of Box 1 (below). Indicators were then combined and applied within Investment Action Matrices (IAMs) and, lastly, the potential impact of their use on ERDF/CF stakeholders was evaluated.

Box 1: Figure 2: Common indicators suitable for use in a FNLC context

PO	Common output indicators	Common result indicators
1	RCO02 Enterprises supported with grants RCO05 New enterprises supported RCO06 Researchers working in supported research facilities RCO14 Public enterprises supported to digitise their products and services RCO41 additional households with broadband access of very high capacity RCO15 Firms: Capacity of incubation created	RCR01 Jobs created in supported entities RCR03 RTDI: SMEs introducing product or process innovation RCR102 RTDI: New researchers RCR11 Digital: Users of new and upgraded public digital services RCR17 Firms: New enterprises surviving in the market RCR18 Firms: SMEs using incubator services RCR53 Digital: Dwellings with broadband to very high-capacity network
2	RCO18 Energy: Dwellings with improved energy performance RCO19 Energy: Public buildings with improved energy performance RCO22 Energy: Renewable energy capacity RCO25 Climate: Flood protection newly built or consolidated RCO30 Water: Length of pipes for public water supply RCO34 Circular: Additional capacity for waste recycling RCO37 Env: Surface of Natura 2000 sites RCO58 Urban Trans: Dedicated cycling infrastructure supported RCO36 Env: Green infrastructure supported for other purposes than adaptation to climate change RCO57 Urban Trans: rolling stock for public transport	RCR26 Energy: Annual primary energy consumption RCR29 Climate: Estimated GHG emissions RCR32 Energy: Renewable energy capacity RCR41 Water: Population with improved water supply RCR63 Urban Trans: Annual users of tram and metro lines RCR64 Urban Trans: Annual users of cycling infrastructure RCR47 Waste recycled RCR95 Env: Pop. with access to green infrastructure RCR35 Population benefiting from flood protection

3	RCO47 Rail: Length of new or upgraded rail - TEN-T ([7]) RCO49 Rail: Length of rail reconstructed or modernised - TEN-T	RCR58 Rail: Annual users railways
4	RCO67 Education: Classroom capacity of education facilities RCO69 Health: Capacity of health care facilities RCO66 Education: Classroom capacity of childcare facilities	RCR71 Education: Annual users of education facilities RCR73 Health: Annual users of health care facilities RCR70 Education: Annual users of childcare facilities
5	RCO74 Population covered in integrated territorial development	RCR77 Visitors of cultural and tourism sites

Source: Consortium own elaboration

The IAMs enabled for testing the practical use of the selected indicators.

The following main findings were drawn on the potential of common indicators to be used in FNLC / performance based programming:

(x) **Suitability of common indicators in a FNLC context**:
The **strengths** of the common indicators shortlisted lie in their **reliability, methodological homogeneity, and broad coverage**, which ensure ease of implementation and consistency in data collection. Their widespread use across programming periods, along with standardized methodologies, enhances comparability and supports aggregation across Member States. These strengths directly address several of the concerns expressed by the European Court of Auditors (ECA)[8], with findings showing that 90% of the indicators examined can help respond to the ECA's remarks. This highlights the potential of the ERDF/CF system of indicators to mitigate identified shortcomings while also aligning with the core requirements of the EU Financial Regulation.

([7]) TEN-T stands for Trans-European Transport Network. It is a European Union policy initiative and a planned network of roads, railways, inland waterways, maritime shipping routes, ports, airports, and multimodal terminals across the EU. Under PO3, ERDF/CF, common indicators distinguish between TEN-T (e.g., RCO47 Rail: Length of new or upgraded rail - TEN-T) and non-TEN-T (e.g., RCO48 Rail: Length of new or upgraded rail - non-TEN-T) infrastructure investments in order to track which contributions support the development of the TEN-T.

[8] ECA Report n. 26/2023, *The Recovery and Resilience Facility's performance monitoring framework, measuring implementation progress but not sufficient to capture performance*, 2023.

(xi) **Challenges in using common indicators**:
However, **challenges** arise from the heterogeneity in their application, complexity of result indicators, and difficulties in maintaining alignment between upper (from the European Commission to the Member States' programmes) and lower levels (i.e., from Member States' programmes to beneficiaries) in FNLC reimbursement flows.

- Heterogeneity in indicator use stems from the diversity of intervention types and implementation methods. For example, RCO02 (Enterprises Supported by Grants) can be linked to varied interventions like innovation support or digital transformation, resulting in cost variability.

- Result indicators pose complexity in measurement and verification, as they often require post-intervention tracking of intangible outcomes such as behavioural changes or medium-term effects. This necessitates robust monitoring systems and imposes a substantial administrative burden on Managing Authorities and Beneficiaries.

- Challenges also emerge when using common indicators across both upper and lower FNLC levels. Some common output indicators capture intermediate steps in the process rather than specific deliverables; for instance, they measure the supported enterprises and public institutions. This makes these indicators not immediately suitable for reimbursement at lower level, because they require identifying (and measuring) the output triggering payment. Moreover, they are associated with the misalignment of financial flows across the two different reimbursement levels. Certain indicators, particularly those measuring additional capacity created by a project, such as incubation, energy production, waste management, broadband access, and energy storage as well as the process-related common output indicators mentioned earlier, can be problematic because they may not allow for defining intermediate deliverables as conditions for reimbursement under the FNLC scheme. Moreover, some common 'coverage' indicators measure the population covered by the funded interventions. This implies that programmes may assess the achievement of these indicators only at an aggregate level, rather than tracking them at the level of individual operations.

(xii) The **stakeholder analysis** shows that risk and workload are distributed unevenly across different types of indicators and stakeholders. Process indicators carry the lowest risk and workload for Managing Authorities and Beneficiaries but pose the highest risk to the European Commission and European Parliament due to their limited impact on policy outcomes. In contrast, long-term result indicators impose the highest risk and workload on Managing Authorities and Beneficiaries, while minimizing risk for EU-level actors. This risk distribution highlights the strategic importance of using a

combination of process, output, and result indicators to balance administrative efficiency with policy effectiveness.

To maximize the strengths and address the weaknesses identified, specific conditions are recommended:

(i) Combining common indicators enhances coherence and reliability, effectively representing the lifecycle of interventions and balancing stakeholder risks.

(ii) Adjustments to the indicator design are necessary to better align aggregation rules, data collection timing, and payment mechanisms.

(iii) Enhanced verification and adjustment mechanisms are required to maintain accountability, address external factors, and clarify responsibilities.

(iv) Additionally, the FNLC design should be approached as a collaborative and adaptive process, fostering dialogue between the European Commission and Member States to align objectives, address challenges, and ensure flexibility.

References to Previous Deliverables

This report builds on the findings presented in the two previous deliverables:

- First Interim Report, submitted in September 2024
- Second Interim Report, submitted in November 2025

For further information on the analyses and results presented below, it is possible to refer to the relevant sections of the previous reports, as indicated in the table.

Section of this report	Previous reports references
2.1 Quantitative analysis	First interim report: • Chapter 1 - Data analysis of the use of common indicators (Task 1a) • Annexes I - V
2.2 Qualitative analysis	Second interim report: • Chapter 1 - Detailed assessment of selected common output and result indicators (Task 1b) • Annex I
2.3 Comparative analysis	Second interim report: • Chapter 2.1 – Comparison between ERDF/CF common indicators and RRF milestones and targets (sub-task 2a1) • Annex II • Chapter 2.2. - Assessment of the potential of selected common indicators for payments not linked to costs (sub-task 2a.2)
3.1 Suitable common indicators selection	Second interim report: • Chapter 3.1 - Assessment of the implications of financing not linked to cost and the role of milestones (Task 2b) - Methodology • Chapter 3.2 - Analysis of output indicators (sub-task 2b.1) • Chapter 3.3 - Analysis of result indicators (sub-task 2b.2) • Annex II
3.3 Application of common indicators in FNLC schemes	Second interim report: • Chapter 3.1 - Assessment of the implications of financing not linked to cost and the role of milestones (Task 2b) - Methodology • Chapter 3.4 – Design of the intervention action matrix (sub-task 2b.3) • Annex III
3.4 Implications for different stakeholders	Second interim report: • Chapter 3.1 - Assessment of the implications of financing not linked to cost and the role of milestones (Task 2b) - Methodology • Chapter 3.5 – Analysis per stakeholder (sub-task 2b.4)
4.2 … in an FNLC system	Second interim report: • Chapter 3.6 - Assessment of how common indicators address weaknesses identified by ECA (sub-task 2a.3) • Chapter 3.6 Conclusions

1. Introduction and Methodologic approach

This study explores whether the ERDF/CF performance framework methodologies for 2021–2027 could inform the design of a future system of FNLC. It does so by assessing the use of ERDF/CF common indicators during the current programming period and exploring their potential role as payment triggers under an FNLC framework.

The methodology is designed as a sequence of quantitative, qualitative, and comparative analyses, each building on the previous one and progressively enhancing the understanding of the use of common indicators. All the information collected provides a comprehensive assessment of the ERDF/CF common indicators, focusing on various attributes to determine whether the identified indicators are suitable for use and, if so, how (i.e., for which typology of investment action and at which stage in the intervention logic) within an FNLC framework. The study adopted the following methodological approach:

Quantitative analysis of the use of common ERDF/CF indicators

The analysis covers all common ERDF/CF indicators, also taking into account the common indicators of the Just Transition Fund (JTF), and focuses on the quantitative assessment of the following aspects:

- **Frequency:** accounts for the times an indicator is selected in the adopted programmes. It is possible to examine the indicator's frequency from different angles. Accordingly, various frequency measurement methodologies were employed: i) Absolute frequency: number of times the indicator is selected across all SOs and programmes; ii) Distinct frequency: number of times the indicator appears at least once in programmes (to analyse indicators used across multiple SOs); iii) Frequency by SO: number of times the indicator has been selected in a given SO; iv) Frequency by Member State: number of times Member States selected an indicator; v) Frequency by Intervention Field, as defined in Annex I of Regulation (EU) 2021/1060: number of times the indicator has been selected in a given Intervention Field (IF).
- **Relevance**: Indicates the importance of indicators based on the budget allocated to them through their connection to the SOs and IF. In other words, indicators are deemed relevant if they are used to track the impact of large financial amounts. The analysis was twofold: on one hand, the relevance of indicators was assessed based on the budget allocated to the SOs, and on the other, it was evaluated through the budget allocated to each specific Intervention Field. The second part of the analysis is based on a merged dataset created specifically for this assignment.
- **Consistency:** measures the extent to which programmes established similar targets for their indicators with comparable financial allocations, and identifies outliers in these two dimensions (i.e., indicators’ target

values and financial allocations) that where further analysed under the following step 'Detailed assessment of selected common output and result indicators'. For some indicators, where the measurement unit is surface of area covered, persons or enterprises, the plausibility of their target value is assessed in relation to external datasets containing information on total surface area, population and number of enterprises.

This quantitative analysis allows the identification of a set of 43 common output and result indicators to be used for the more in-depth analysis, ensuring sufficient frequency, relevance and consistency for high representativeness of the SOs (see Table 2)

Qualitative analysis: detailed assessment of selected common output and result indicators

The analysis focuses solely on the identified set of 43 common output and result indicators and reviews 35 Art. 17 CPR methodological documents ([9]). At the level of each PO, the analysis examines each common indicator under a selected specific objective for which the indicator is more relevant, frequent and plays a key role in the intervention logic according to the findings of the quantitative analysis. The qualitative analysis reviews at least 5 (but in many cases more) methodological documents for each common indicator covering all the POs: 13 for PO1, 19 for PO2, 3 for PO3, 6 for PO4, 2 for PO5. Wherever relevant and possible, the outcomes of the consultations with programme and national authorities have been used to complete the desk review findings. This analysis allowed the collection and examination of information on indicators through the following steps:

- **Coherence** with the European Commission SWD (2021)198 definitions and assumptions.
- **Homogeneity** across programmes and SOs, with a focus on:
  - *Granularity*. The review of methodological documents assesses whether similar investment actions contribute to each indicator. To ensure consistency across the analysed programmes in line with the RSO intervention logic, the study team proposes types of investment actions at the level of each specific objective, drawing on the Annex I CPR intervention fields, the correspondence table from the Cohesion data platform, and textual analysis of programme actions. This proposed typology of investment actions also served as the

([9]) Initially, a sample of 44 methodological documents and programmes was defined to start the analysis of a selected list of output and result indicators under a defined set of specific objectives. Then, considering the quality of available information from methodological documents, the analysis focused on 35 programmes.

basis for designing the IAMs used to test the concrete application of common indicators within the FNLC framework. Different levels of homogeneity have been defined: high homogeneity when an indicator is associated with a single type of investment action, medium homogeneity with two or three types, and low homogeneity with four or five types.

- *Consistency in target-setting assumptions*. This analysis considers the timeliness of output/result delivery, and the approach used for target setting, with particular attention to the sources and calculation methods applied.
- *Factors which might affect the achievement of milestones and targets.* These include policy-related aspects (e.g. regulatory changes, delays in programme implementation and completion), socio-economic constraints (e.g. inability to provide anticipated advances or payments, inflation) and other external drivers (e.g. geopolitical crises, technological developments).

- **Assessment of target setting and outliers.** The analysis of the methodological documents helps identify reasons why, in relation to investment allocations, indicator targets may vary across programmes and highlights potential reasons for outlier values.

The qualitative analysis assesses the extent to which the selected 43 common output and result indicators are coherent and homogeneous, and thus reliable for use in the context of FNLC.

Comparative analysis

Comparative analysis examines ERDF/CF common indicators against RRF milestones and targets by:

- Placing the ERDF/CF common indicators alongside the RRF investment-relevant milestones and targets for a comparison by subsets of indicator type (i.e. process, output, result), policy sector, and investment action. Establishing a systematic one-to-one correspondence between individual ERDF/CF indicators and RRF milestones and targets was not feasible due to the variability across different Recovery and Resilience Plans (RRPs). Indeed, a key novelty of the RRF is that Member States have flexibility in designing the reforms and investments in a way that suits their national conditions, which increases their ownership of the plans but does result in heterogeneity amongst the 27 RRPs. Conversely, a broad, generic comparison would have yield limited and superficial insights. Using subsets allows for a more operational and nuanced comparison instead, balancing granularity with comprehensiveness.

- Assessing the potential of selected common indicators in a FNLC context ("**Potentiality**"). A synthetic judgement is provided by examining several dimensions: (i) clear linkage to intervention logic, (ii) attribution, (iii) time lag, (iv) robustness, and (v) homogeneity.

The comparative analysis helps to understand the main features of ERDF/CF common indicators in relation to the milestones and targets used under the RRF.

Testing the potential application of ERDF / CF common indicators in a FNLC context

- Assessment of the "**Suitability"** criteria (including frequency, relevance, consistency, coherence, homogeneity and potentiality), based on all information collected in the previous analyses for each of the 43 selected common output and result indicators, to identify the most suitable ones for use in an FNLC system.
- Based on the previous analyses, output and result indicators were combined to cover different investment actions, leading to the development of **IAMs**— initial models to be further refined into potential FNLC schemes. This exercise enabled the identification of strengths, weaknesses, and conditions under which common indicators could y function effectivel within an FNLC framework.
- **Stakeholder analysis** to evaluate the roles and responsibilities of different stakeholders engaged in the implementation, monitoring, and evaluation of FNLC schemes using common indicators.
- Evaluating how common indicators address **concerns regarding the RRF's performance monitoring framework expressed by the ECA**[10] (i.e., Main focus on inputs and outputs; Poor coherence and robustness; Inability to capture completion of a measure; Unclear link with financial values).

[10] ECA Report n. 26/2023, *The Recovery and Resilience Facility's performance monitoring framework, measuring implementation progress but not sufficient to capture performance*, 2023.

By integrating the results of the qualitative, quantitative, and comparative analyses and designing operational IAMs, the final assessment tests the use of common indicators in the context of FNLC, identifying both strengths and weaknesses.

The study involved **several stakeholders** and in different moments and ways:

- A specific survey for programme authorities addressed exclusively the sample of programmes identified for the revision of the methodological documents under the qualitative analysis. The questionnaire focused on aspects related to data collection practices for monitoring the indicators, as limited information on this was available from both the SWD (2021)198 and the review of the methodological documents.
- A second specific survey targeted the DG REGIO Evaluation Network and aimed to explore the differences compared to the previous programming period and assess whether improvements have been observed. Furthermore, questions regarding the choice of using programme-specific indicators over common indicators were also included.
- **An online workshop with some members of the DG REGIO Transnational Network on Simplification was organised too.** The main objective was to validate the study findings and further investigate practical implications of using common indicators as indicators triggering payment within a future FNLC framework, which can be applied in the post-2027 programming period.

2. Common indicator analysis

The ERDF/CF common output and result indicators have been analysed from three different perspectives: qualitative, quantitative and comparative. Each analysis builds on the preceding one, with the objective of achieving a more comprehensive understanding.

2.1. Quantitative analysis

This section presents the results of a comprehensive **analysis of the use of all common ERDF/CF indicators in the 2021-2027 programming period**. The analysis focused on three key dimensions:

- **Frequency**: The extent to which different indicators are used. This analysis tracks how often each indicator is selected in the adopted programmes.
- **Relevance**: The significance of indicators based on budget allocation. Indicators are considered relevant if they are used to monitor the impact of large financial amounts.
- **Consistency**: The extent to which programmes with similar financial allocations set comparable targets. This analysis also identifies outliers in both frequency and relevance.

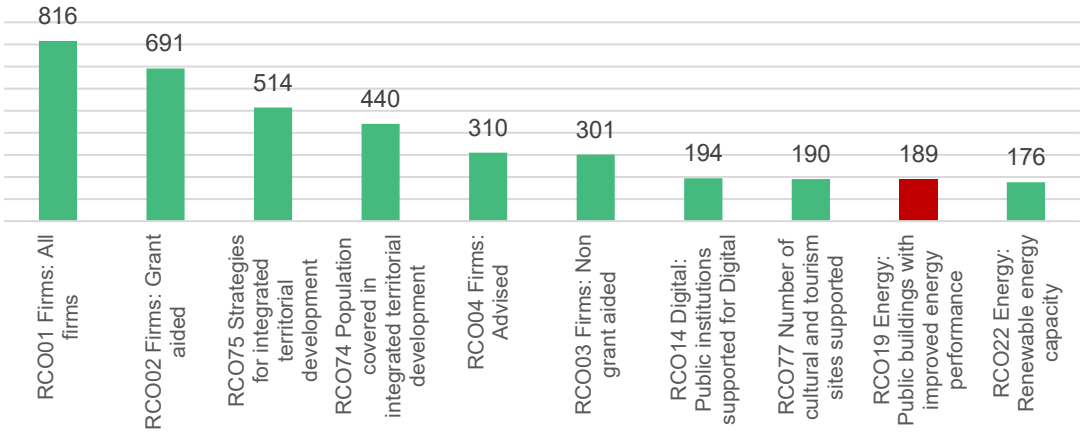
Overall, the analysis reveals that **indicators with high frequency, relevance, and correlation are mostly associated with PO1 “Smarter Europe”.** As further explained in the following sections, frequency and relevance are closely linked. Many generic indicators widely used under RSO1.1 and RSO1.3—the two most heavily financed SOs—appear among the most frequent and relevant. Among these, those that also show a strong correlation between target values and financial amounts include RCO02, RCO07, RCO08, and RCO13 (output indicators), and RCR02 and RCR06 (result indicators). These are all financial indicators linked to processes. Additionally, RCO18, RCO19, and RCO67 also rank highly across all considered metrics. The first two are primarily used under RSO2.1 and are related to energy efficiency, while RCO67, associated with RSO4.2, is related to education.

2.1.1. Frequency

The most frequently used indicators (see figures below)**, both output and result, are primarily related to a subset of the SOs with the highest allocations.** These include RSO1.1 “Research and Innovation (R&I) capacities” and RSO1.3 “Growth and competitiveness of SMEs,” ranked first and third in

terms of total financing, respectively, as well as RSO2.1, "Energy efficiency," the fourth largest SO in terms of total financing. As a result, a significant share of the programmes has activated projects under these SOs. Regarding indicators with the lowest absolute frequency, only two have never been used: RCO63 "Social Infra: Capacity of temporary reception facilities" and RCR66 "Social Infra: Annual users of reception facilities", both related to RSO4.4. Furthermore, the indicators with the lowest usage are mostly output indicators associated with SOs under PO3 "Connected Europe". The relatively large number of common output indicators specific to RSO3.1 and RSO3.2, combined with their high specificity in terms of the intervention measured, explains the low adoption of some indicators (e.g., RCO52 "Waterways: Length of inland waterways- non-TEN-T" and RCO108 "Road: Length of roads with TMS - TEN-T"). Less frequently used result indicators appear more often than less frequently used output indicators. This may be due to the smaller pool of result indicators available, which forces Managing Authorities to select from a more limited set.

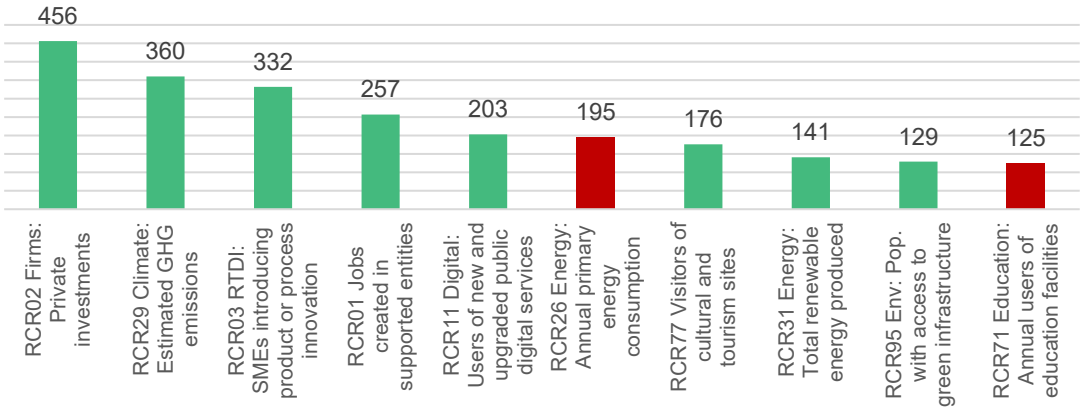
Figure 2: Ten most frequent output indicators (absolute frequency)



Note: data labels are the absolute frequencies of the corresponding indicators. The green bars represent indicators that, according to Annex I of the ERDF and CF regulation (the Regulation (EU) 2021/1058), can be used across all specific objectives whenever relevant (these are the indicators marked with an asterisk in Annex I of the Regulation (EU) 2021/1058). In contrast, the red bar highlights indicators with a specific SO-usage as per the same Annex

Source: own elaboration on achievements dataset.

Figure 3: Ten most frequent result indicators (absolute frequency)

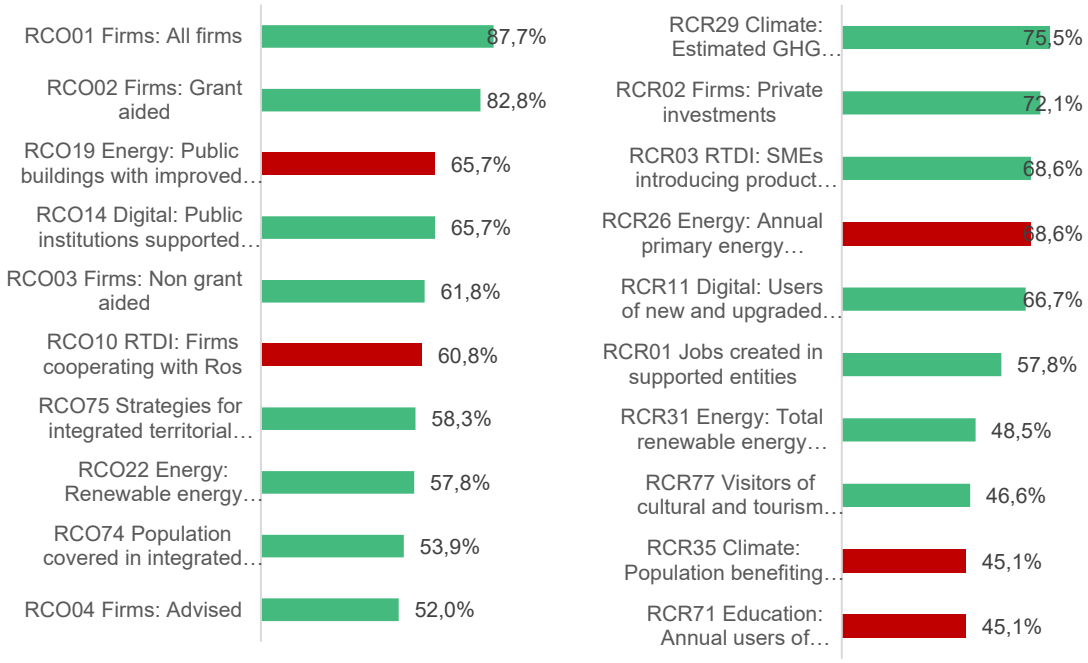


Note: data labels are the absolute frequencies of the corresponding indicators. The green bars represent indicators that, according to Annex I of the ERDF and CF regulation, can be used across all specific objectives whenever relevant (these are the indicators marked with an asterisk in the regulation's Annex). In contrast, the red bars highlight indicators with a specific SO-usage as per the same Annex

Source: own elaboration on achievements dataset

The most commonly used output and result indicators by programme are also among the most frequent overall (see figure below). For result indicators, the order of the top ten rankings by distinct count closely mirrors the order by absolute frequency. Instead, for output indicators, except for RCO01 and RCO02, which rank 1st and 2nd in both rankings, the order differs more between the two frequency measures. The third and fourth most used indicators by distinct programmes, RCO19 "Energy: Public buildings with improved energy performance" and RCO14 "Digital: Public institutions supported for Digital," ranked 9th and 7th in absolute frequency. This suggests that while widely adopted, they were used less often within each programme. In contrast, RCO75 and RCO74, though adopted by fewer programmes, are used more frequently within those programmes.

Figure 4: Top 10 most frequent output (left) and result (right) indicators by Programme



Note: the percentage is the share of Programmes in which the corresponding indicator is used at least once. The total number of analysed Programmes is 204. The green bars represent indicators that, according to Annex I of the ERDF and CF regulation, can be used across all specific objectives whenever relevant (these are the indicators marked with an asterisk in the regulation's Annex). In contrast, the red bars highlight indicators with a specific SO-usage as per the same Annex

Source: own elaboration on Achievements dataset

The majority of the most frequently used indicators are relatively generic and can measure the deliverables and effect of a diverse array of different projects falling under different SOs. Indeed, the frequency of indicators is also influenced by their applicability across a relatively broad spectrum of SOs. For example, indicators such as RCO77, RCO74, RCO75 (among the outputs), and RCR77 (among the results), are widely used across a wide range of SOs. The only SO-specific indicators (according to Annex I of the ERDF and CF regulation) that appear among the most frequently used are RCO19 “Energy: Public buildings with improved energy performance” for outputs and RCR26 “Energy: Annual primary energy consumption” and RCR71 “Education: Annual users of education facilities” for results. When considering distinct frequency by programme, RCO10 “RTDI: Firms cooperating with ROs” and RCR35 “Climate: Population benefiting from flood protection” also make it into the top 10 most frequently used indicators.

Overall, result indicators are used less frequently than output indicators, both in terms of absolute frequency and when counted separately by Programme. This can be explained by the higher overall availability of indicators, particularly the more generic ones. Unsurprisingly, generic indicators make up 9 of the top

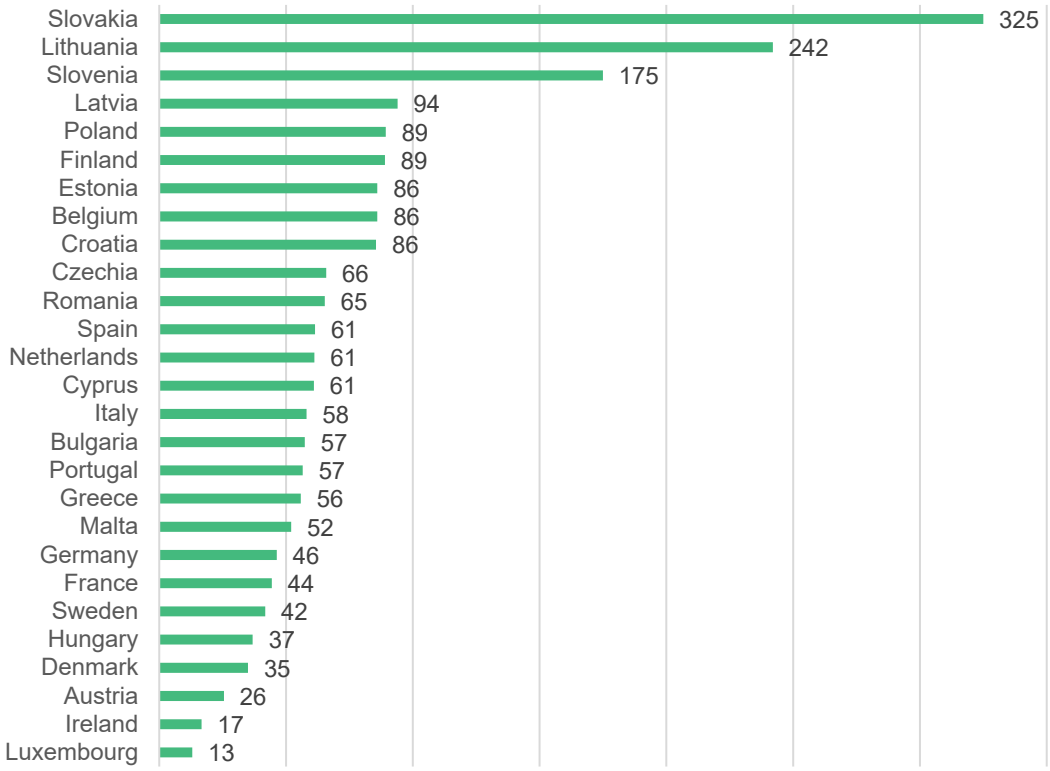
ten output indicators ranked by frequency. Among the most frequently used output indicators, those with a process-oriented nature—primarily adopted under PO1—are the most prominent. These include RCO01, RCO02, RCO03, and RCO04. The broad scope of these indicators, which is not limited to a specific type of project, makes them flexible and suitable for a wide range of projects.

Unlike PO1 and PO5, distinct SOs under PO2 and PO4 feature different indicators among the top used. This suggests that SOs under PO2 and PO4 have a narrower focus and can be more easily differentiated. Additionally, it indicates that SO-specific output and result indicators exist and were adopted for most SOs under PO2 and PO4. For PO3, the situation is more mixed. The most frequently used output indicators vary by SO, even though they refer to similar investments, whether or not part of TEN-T. In contrast, the most frequently used common result indicators under the two SOs of PO3 are almost identical, reflecting the similarity in expected outcomes from investments supported by these SOs. It is also worth noting that a relatively high number of distinct indicators were used under the SOs of PO5 (59 distinct output and result indicators were utilized across both SOs), especially when compared to the SOs under PO4. Many of these indicators, such as RCO75 and RCO74, are also common to other POs.

The number of indicators used per Programme (see figure below) **reflects factors such as the type of programme** (regional vs. national)**, the country’s level of development, and the number of programmes in the country**. National/multiregional programmes typically employ an average of 26 distinct indicators, whereas regional programmes use an average of 38 indicators. This difference is mainly attributable to the thematic nature of many national programmes designed to finance projects and investments within a specific policy sector. As a result, the scope of intervention tends to be narrower, leading to a reduced number of indicators included in the monitoring framework. Obviously, this conclusion does not hold true for countries with only one active ERDF/CF Programme. In fact, programmes in Slovakia, Lithuania, Slovenia, and Latvia feature the highest number of indicators as they support a broad range of intervention types. These are also all countries that benefit from Cohesion Fund ([11]).

([11]) For the 2021-2027 period, the Cohesion Fund concerns Bulgaria, Czechia, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.

Figure 5: Average number of indicators per programme, by country



Note: data labels are the average number of indicators per programme, by country.

Source: own elaboration on Achievements dataset

2.1.2. Relevance

The relevance of an indicator, both output and result, is mainly related to its frequency and to the financing allocated to the SOs where they are most commonly used. Relevance, that is to say the extent to which an indicator is used to track the impact of large financial amounts, can be inferred from the importance of the SOs under which they are adopted. Using this approach, indicators are considered relevant based on their frequency within SOs that receive the largest funding. Consequently, indicators RCO01, RCO02, RCR03, RCR02 and RCR01 are among the most relevant indicators as they are the most frequently used indicators both under RSO1.1 and RSO1.3. Indicators RCO01 and RCR02 also rank among the top 3 most used indicators in other highly financed SOs, such as RSO2.1, JSO8.1 and RSO1.2. The same logic applied to RSO2.1 and RSO2.8, the two richest SOs of PO2, yields that the most relevant indicators measure respectively benefits in terms of energy efficiency and urban transport (RCO19 RCR29, RCO58 and RCR62). Indicators related to infrastructure projects, such as RCO49, RCO44 RCR56 and RCR55 can also be

considered relevant thanks to their widespread use in the two SOs related to PO3 "Connected Europe".

Table 1: Total amount (million EUR) and top 3 result and output indicator by POs and underlying SOs million EUR

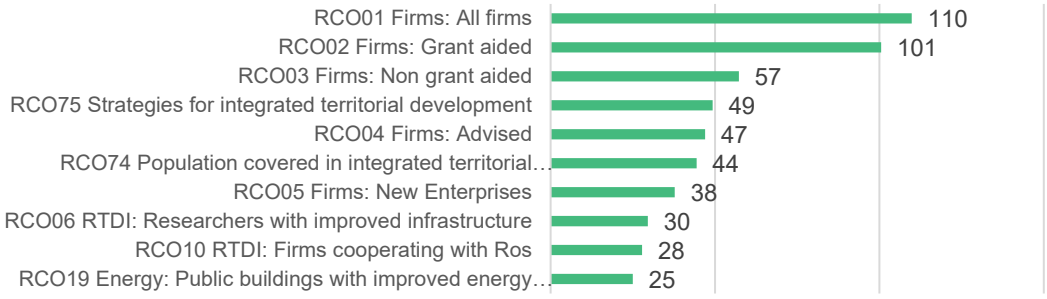
PO and SOs	Total amount, million EUR	Top 3 output indicators by frequency	Top 3 result indicators by frequency
PO1 Smarter Europe	114,377		
RSO1.1 Enhancing research and innovation	54,692	RCO01, RCO02, RCO10	RCR03, RCR02, CR102
RSO1.2 Reaping the benefits of digitisation	16,772	RCO14, RCO01, RCO02	RCR11, RCR13, RCR02
RSO1.3 Growth and competitiveness of SMEs	36,932	RCO01, RCO02, RCO03	RCR02, RCR01, RCR03
RSO1.4 Skills for smart specialisation and transition	2,423	RCO101, RCO16, RCO01	RCR98, RCR02, RCR97
RSO1.5 Digital connectivity	3,558	RCO41, RCO42, RCO01	RCR53, RCR54, RCR02
PO2 Greener Europe	128,845		
RSO2.1 Energy efficiency	32,004	RCO19, RCO18, RCO01	RCR29, RCR26, RCR02
RSO2.2 Renewable energy	13,022	RCO22, RCO97, RCO01	RCR31, RCR29, RCR32
RSO2.3 Smart energy systems	7,314	RCO23, RCO105, RCO01	RCR34, RCR33, RCR02
RSO2.4 Climate change adaptation	17,345	RCO25, RCO24, RCO26	RCR35, RCR37, RCR36
RSO2.5 Sustainable water	16,166	RCO30, RCO32, RCO31	RCR42, RCR41, RCR43
RSO2.6 Circular economy	9,134	RCO34, RCO01, RCO107	RCR47, RCR103, CR48
RSO2.7 Nature protection and biodiversity	10,333	RCO36, RCO37, RCO38	RCR95, RCR52, RCR50
RSO2.8 Sustainable urban mobility	23,527	RCO58, RCO57, RCO60	RCR62, RCR64, RCR29
PO3 Connected Europe	53,525		
RSO3.1 Sustainable TEN-T	33,915	RCO49, RCO43, RCO47	RCR56, RCR59, RCR58
RSO3.2 Sustainable transport	19,610	RCO44, RCO46, RCO54	RCR55, RCR56, RCR58
PO4 Social Europe	27,312		
RSO4.1 Labour market infrastructure	165	RCO61, RCO01, RCO03	RCR65, RCR17, RCR01
RSO4.2 Education and training infrastructure	7,729	RCO67, RCO66, RCO74	RCR71, RCR70, RCR11
RSO4.3 Integration of marginalised communities	3,989	RCO65, RCO113, RCO74	RCR67, RCR01, RCR11
RSO4.4 Integration of third country nationals	34	RCO65, RCO113	
RSO4.5 Access to health care	10,584	RCO69, RCO70, RCO75	RCR73, RCR74, RCR72

PO and SOs	Total amount, million EUR	Top 3 output indicators by frequency	Top 3 result indicators by frequency
RSO4.6 Culture and sustainable tourism	4,812	RCO77, RCO75, RCO74	RCR77, RCR01, RCR02
PO5 Europe closer to citizens	26,904		
RSO5.1 Integrated development in urban areas	18,213	RCO75, RCO74, RCO77	RCR77, RCR26, RCR95
RSO5.2 Integrated development in rural and coastal areas	8,690	RCO75, RCO74, RCO77	RCR77, RCR29, RCR26
PO8 JTF specific objective	26,351		
JSO8.1 Just Transition Fund	26,351	RCO01, RCO02, RCO22	RCR01, RCR02, RCR29

Source: own elaboration on Achievements and Finance datasets

The previous finding holds true when financial amounts are associated with indicators through IFs. All ten of the most relevant output indicators also appear among the most frequently used indicators in absolute terms, except for RCO06 and RCO10. These two indicators are mainly used under RSO1.1, the SO with the highest overall funding. A similar pattern emerges when analysing result indicators. In this case, three result indicators (RCR102, RCR06 and RCR08), widely used under RSO1.1, do not appear among the ten most frequent result indicators. Interestingly, result indicators often receive larger financial allocations. This can be attributed to the limited availability of distinct result indicators, meaning that, while they are used less frequently, the most common ones tend to track the impact of larger financial amounts.

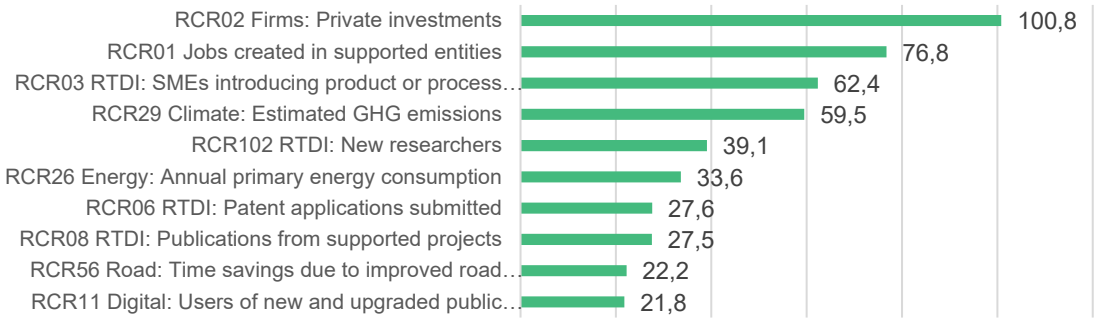
Figure 6: Ten most relevant output indicators, billion EUR



Note: data labels are the total amounts allocated to the corresponding indicators in billion euros.

Source: own elaboration on Achievements and Finance datasets

Figure 7: Ten most relevant result indicators, billion EUR



Note: data labels are the total amounts allocated to the corresponding indicators in billion euros.

Source: own elaboration on Achievements and Finance datasets

As with frequency, the majority of the most relevant indicators are quite generic, whether considering their allocation through SOs or IFs. In particular, generic output and result indicators commonly used under RSO1.1 and RSO1.3 stand out as the most relevant. These indicators can be applied to measure the deliverables and effect of a wide range of projects, which contributes to their high frequency and, consequently, their substantial financial allocations.

The average budget allocation per Programme once again reflects the relationship between financial allocation and number of indicators. As previously highlighted, factors such as the type of programme (regional vs. national), the country’s level of development, and the number of programmes in a country influence the average budget allocation per programme. These factors, in turn, drive up the number of indicators used in each programme, as larger programmes with higher financial allocations tend to use more indicators.

2.1.3. Consistency

The consistency between an indicator’s target value and its financial allocation is influenced by the scope and specificity of the interventions the indicator measures. Indicators that cover a wide range of investments within a given Specific Objective (SO) (e.g., RCR17) or those used to monitor investments across multiple SOs (e.g., RCO77) are more likely to show lower consistency. On the other hand, the most consistent indicators generally have a more specific scope. This is especially true for output indicators, where those with clear scopes tend to have the highest correlation, such as RCO31 “Water: Length of pipes for the collection of wastewater” and RCO18 “Energy: Dwellings with improved energy performance”. Regarding the most consistent result indicators, the picture is more varied. However, result indicators related to financial aspects (e.g., RCR02), digital investments (e.g., RCO53, RCO54), and energy efficiency (e.g., RCR29a, RCR33, RCR105) tend to show the highest correlation between the target value and its financial allocation.

The correlation between indicators’ target values and financial amounts is stronger when calculated within the context of a single SO or Member State. The reason might be that projects using the same indicator within a specific SO tend to be more similar, setting comparable target values with analogous financial amounts. This aligns with the average correlation observed between generic and SO-specific indicators based on the ERDF and CF regulation classification. Even when disaggregating by Member State—where a given indicator may be used in multiple SOs—the relationship remains strong because targets, even under different OPs within the same programme, are set by the same Managing Authority. Moreover, when different MAs operate within the same country, they often follow similar internal logic and face comparable external conditions. It is worth noting that when focusing on correlation by SO, the strongest correlations for many high-frequency output and result indicators do not occur within the SO recommended by the ERDF and CF regulation. This is mainly due to the relatively smaller number of observations used to calculate the correlation coefficient.

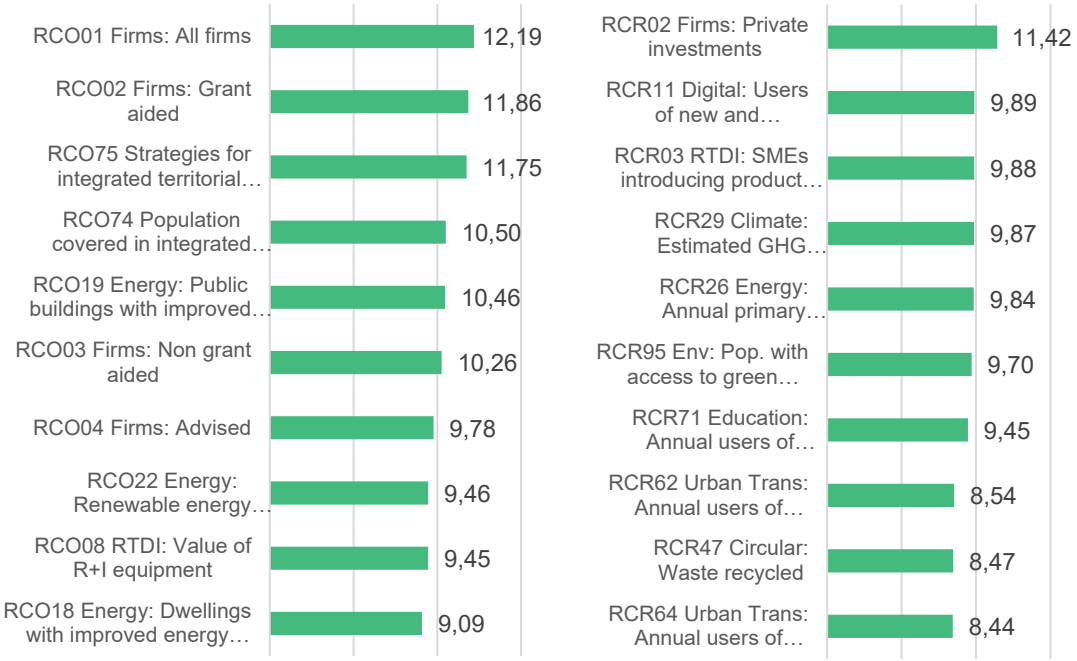
The majority of indicators measure phenomena where a positive correlation is reasonably expected, i.e., higher target values are anticipated to be associated with larger financial amounts.**. The data generally confirms these expectations.** There are exceptions: some result indicators, mainly those related to energy efficiency, such as RCR29 “Climate: Estimated GHG emissions. This inverse relationship obviously occurs due to the specific role of Cohesion Policy in reducing GHG emissions. In the case of output indicators, most negative correlations are very close to 0 and therefore can be interpreted as an absence of relationship rather than an inverse one.

Result indicators generally exhibit a higher correlation than output indicators when considering the most frequently used ones. The average correlation for result indicators in the upper half of the frequency distribution is 0.43, while for output indicators, it is 0.35. In contrast, less frequently used indicators — those in the bottom half of the distribution — show a higher consistency among output indicators, with an average correlation of 0.42, compared to 0.38 for result indicators. This suggests that result indicators, even when not specific to a single SO, tend to have a narrower scope, making them less prone to diversification in their use.

The ranking of the top ten output and result indicators with the highest outlier scores is influenced by their absolute frequency. For output indicators, only the last three in the outlier top ten do not appear among the most frequent ones: RCO22 ranks 11th, RCO08 is 17th, and RCO18 is 20th in terms of frequency. Notably, two of these—RCO22 and RCO08—are energy-related and are mostly used under RSO2.1 and RSO2.2, respectively. For result indicators, other factors beyond frequency also appear to influence the rankings. Although the indicator with the highest outlier score also has the highest number of observations, RCR11 “Digital: Users of new and upgraded public digital services” ranks fourth in terms of frequency. This suggests that RCR11 may be

less consistent compared to other indicators with a similar number of observations. Furthermore, the last three result indicators with the highest outlier scores do not appear among the top ten in terms of frequency. Specifically, RCR62 ranks 12th, RCR47 is 22nd, and RCR64 is 15th. Interestingly, RCR62 and RCR64 are both related to urban transport (RSO2.8), which may explain the lower consistency in observations for these indicators.

Figure 8: Highest outlier score for each indicator, output (left) and result (right)



Source: own elaboration on achievements and finance datasets

2.2. Qualitative analysis

The quantitative analysis has supported the identification of indicators for the qualitative analysis. The following table includes the indicators selected for the qualitative analysis.

Table 2: Indicators selected for the qualitative analysis

PO	Common output indicators	Common result indicators
1	RCO02 Enterprises supported with grants RCO05 New enterprises supported RCO06 Researchers working in supported research facilities RCO14 Public enterprises supported to digitise their products and services RCO41 additional households with broadband access of very high capacity RCO15 Firms: Capacity of incubation created	RCR01 Jobs created in supported entities RCR03 RTDI: SMEs introducing product or process innovation RCR102 RTDI: New researchers RCR11 Digital: Users of new and upgraded public digital services RCR17 Firms: New enterprises surviving in the market RCR18 Firms: SMEs using incubator services RCR53 Digital: Dwellings with broadband to very high-capacity network
2	RCO18 Energy: Dwellings with improved energy performance RCO19 Energy: Public buildings with improved energy performance RCO22 Energy: Renewable energy capacity RCO25 Climate: Flood protection newly built or consolidated RCO30 Water: Length of pipes for public water supply RCO34 Circular: Additional capacity for waste recycling RCO37 Env: Surface of Natura 2000 sites RCO58 Urban Trans: Dedicated cycling infrastructure supported RCO36 Env: Green infrastructure supported for other purposes than adaptation to climate change RCO57 Urban Trans: rolling stock for public transport	RCR26 Energy: Annual primary energy consumption RCR29 Climate: Estimated GHG emissions RCR32 Energy: Renewable energy capacity RCR41 Water: Population with improved water supply RCR63 Urban Trans: Annual users of tram and metro lines RCR64 Urban Trans: Annual users of cycling infrastructure RCR47 Waste recycled RCR95 Env: Pop. with access to green infrastructure RCR35 Population benefiting from flood protection
3	RCO47 Rail: Length of new or upgraded rail - TEN-T RCO49 Rail: Length of rail reconstructed or modernised - TEN-T	RCR58 Rail Annual users railways

4	RCO67 Education: Classroom capacity of education facilities RCO69 Health: Capacity of health care facilities RCO66 Education: Classroom capacity of childcare facilities	RCR71 Education: Annual users of education facilities RCR73 Health: Annual users of health care facilities RCR70 Education: Annual users of childcare facilities
5	RCO74 Population covered in integrated territorial development	RCR77 Visitors of cultural and tourism sites

Source: Consortium own elaboration

As explained in the above methodological section, the qualitative analysis covers:

- **Coherence** with the European Commission SWD (2021)198 definitions and assumptions;
- **Homogeneity** across programmes
- **Assessment** of target setting and outliers.

2.2.1. Coherence

The coherence assessment shows that no methodological documents define indicators inconsistently with the SWD (2021)198 guidelines, and there are no substantial differences in definitions across specific objectives. Regarding result indicators, it is worthwhile mentioning the SWD allows programmes flexibility in determining the specific timing when to measure many result indicators, as long as the measurement occurs no later than one year after the completion of the corresponding outputs / intervention. In this respect, the reviewed methodological documents generally do not specify how or when the result indicators will be measured but simply affirm their consistency with the SWD.

2.2.2. Homogeneity

The homogeneity assessment focuses on: granularity, consistency in target setting assumptions and factors which might affect target achievement.

Granularity assessment examines **whether the investment actions contributing to each indicator are homogeneous under each specific objective**.

- **PO1 indicators usually exhibit medium to low homogeneity**. This means that typically more than one type of investment action contributes to the indicator valorisation, reflecting the complexity of the programme intervention logics and the diverse use of indicators to capture outputs and results. Indicators with high homogeneity cover SME incubation (RCO15, RCR18) and digital connectivity for dwellings (RCO41, RCR53). Indicators

with medium homogeneity measure research infrastructure (RCO06), public sector digitisation (RCO14), SMEs introducing innovations (RCR03). Indicators with low homogeneity measure new enterprises supported (RCO05), job creation (RCR01), new researchers (RCR102), public digital services, products and processes (RCR11) and the survival of new enterprises (RCR17). Homogeneity for RCO02 (SMEs supported with grants) varies across specific objectives under PO1.

- **In PO2, PO3 and PO4**, **homogeneity is typically medium to high**. Indicators often exhibit high homogeneity (a single type of investment action is associated with an indicator) for areas such as energy efficiency in dwelling and public buildings (RCO18 and RCO19), flood protection (RCO25, RCR35), public water supply (RCO30, RCR41), waste recycling (RCO34, RCR47), green infrastructure (RCO36), renewable energy (RCO22, RCR31 and RCR32), public transport (RCO57, RCR63), TEN-T railway infrastructure (RCO47, RCO49, RCR58), childcare infrastructure (RCO66, RCR70), health care facilities (RCO69, RCR73). There is medium homogeneity - two or three types of investment actions under each RSO are associated with an indicator – for Natura 2000 sites (RCO37), access to green infrastructure (RCR95), cycling infrastructure (RCO58, RCR64), education facilities (RCO67, RCR71), annual primary energy consumption (RCR26) and estimated GHG emissions (RCR29).
- **The PO5 is a very specific case**. The analysis shows that reviewed indicators (RCO74, measuring the population covered by projects in the framework of strategies for integrated territorial development, and RCR77, covering visitors of cultural and tourism sites supported) are very often used in combination with others not covered by the qualitative analysis and, therefore, it is not possible to associate homogenous programme investment actions.

The analysis of consistency in target-setting assumptions covers **timeliness** of output / result delivery and **target setting approaches**, particularly the sources and calculation methods used.

- **Timeliness** – The analysis shows that, as specified in SWD (2021)198, all output indicators must be measured no later than upon the completion of the operation. Regarding result indicators, the following distinctions can be made: (i) Result indicators measuring the population benefiting from investments are usually measurable upon output completion; (ii) Job creation indicators can be measured in the short to medium term; (iii) Indicators related to the use of a new or improved service, facility, or infrastructure, or those implying behavioural change or innovation, require 6 to 12 months to measure a pre-post variation.

- Output indicator targets are generally based on past experience or ad hoc studies, while result indicator targets also consider statistical sources ([12]) and delivery and target setting assumptions of related output indicators (i.e., result indicators are typically defined considering the associated output indicator). The analysis of methodological documents suggests that heterogeneity in costing assumptions for the same or similar types of investment action is common and can be attributed to several factors including:
    - **Form of support**. Combining grants and financial instrument can affect costing assumptions.
    - **Size of beneficiaries**. For example, microenterprises and large enterprises typically receive a different type of support.
    - **Intervention specificities**. These may refer to the sector, the focus of the programme intervention logic, or the expected use of infrastructure / service supported or goods delivered. A few examples are presented. The cost of improving energy performance typically varies with the type of building. In the field of public service digitalisation, cost differences arise among e-government, e-inclusion and e-health. Heterogeneity in costing assumptions can be linked to the different types of renewable energy sources (as reflected in Annex I CPR intervention fields).

Factors which might affect the achievement of milestones and targets are often policy-related, such as budgetary restrictions, regulatory changes, delays in programme implementation and completion, the capacity of applicants and beneficiaries to prepare proposals and implement projects, competition from other funding sources, and discrepancies between approved projects and pilot projects used to set the targets. Relevant **socio-economic factors** include the inability to provide anticipated advances or payments, price increases, and potential future crises or supply shortages. **Other factors** identified in methodological documents include the geopolitical crisis, exchange rate risks, long-term effects of the COVID-19 crisis, administrative challenges related to public procurement procedures, and technological advancements.

([12]) By "statistical sources", is meant values provided by statistical institutes. It should be noted that, in the rationale of the 2021–2027 programming period, result indicators are expected to ensure a strict and direct alignment with programme support and therefore should not be based on values from statistical sources. For instance, indicators such as the number of passengers or the number of tourists should reflect those whose conditions improved or who increased as a direct result of programme support, rather than broader trends in the context. On the opposite, context changes were the focus of the 2014-2020 result indicators. However, the analysis revealed that, as establishing a target can often be challenging, programme authorities opted to use statistical indicators (as context indicators) and their values to estimate targets for result indicators.

2.2.3. Lessons learned from the assessment of outliers

Outlier programmes identified through the quantitative analysis are not necessarily adopting incorrect assumptions but may behave differently from the average correlation between indicator targets and invested amounts. The review of methodological documents identifies three key factors that could explain this discrepancy:

- **Programme actions may involve different types of beneficiaries, target groups, focus areas, or delivery modes**. For example, supporting large or micro-enterprises, focusing on energy efficiency in industry or housing, using financial instruments or grants, can affect unit costs and programme delivery, explaining differences between programmes.
- **Different approaches to establishing unit costs**. Some programmes use different approaches or sources to establish unit costs, which could explain why they are outliers.
- **Lack of specification of investment actions or the use of umbrella investment actions**. Some methodological documents do not specify the type of investment actions supported under each specific objective, while others use broad programme actions covering a wide and flexible set of possible interventions. This can affect the relationship between indicator targets and invested amounts, contributing to the outlier phenomenon.

2.3. Comparative analysis

This section presents the results of a comparative analysis between the ERDF/CF common indicators and the RRF investment-relevant milestones and targets (M&T) The analysis has two main components:

1. Comparison of the two sets as a whole – examining the key methodological features of the ERDF/CF common indicators and the RRF milestones and targets (e.g. type of indicator, sectors and investments covered).
2. Assessment of individual ERDF/CF common indicators – analyzing their potential use in a FNLC context, considering the European Court of Auditors' remarks and the specificities of the EU Financial Regulation.

2.3.1. Comparison of the methodological features of the two sets: RRF milestones and targets, and ERDF/CF common indicators

To enable this comparison, an extensive categorisation and mapping exercise has been conducted. More specifically, the study classifies the RRF M&T and the

ERDF/CF common indicators (output and result indicators) under subsets encompass: **indicator type, policy sector and type of investment actions** (see box below).

Box 2: Indicator type

Three indicator types have been assigned: process indicator, output indicator, result indicator. These typologies are aligned with the characterisation of RRF M&T proposed in the tender specifications, as well as with the 2018 study on the development of post-2020 ERDF/CF common indicators ([13]). For the purposes of the present study, the following definitions apply ([14]):

- **Process indicators** describe programme implementation processes with information on the support provided (e.g. number of selected projects, funds allocated).
- **Output indicators** measure what is delivered through the supported intervention (e.g. surface area of energy-renovated buildings, length of new railway lines).
- **Result indicators** measure the direct effects of the supported intervention's outputs (e.g. GHG emission reduction).

These three indicator types do not reflect RRF or ERDF/CF definitions – for instance, ERDF/CF do not foresee the category of process indicators. Yet, to enable the comparison, it is necessary to apply the same categories to both RRF milestones and targets and ERDF/CF common indicators. 7 ERDF/CF common output indicators are categorised as process indicators ([15]). In principle, also common output indicators related to beneficiaries of support (for instance, RCOs 01-05 on firms) could be considered process indicators. However, if for the purposes of this analysis they were considered process and not output indicators, the comparison of output indicators under some Policy Objectives (especially PO1) would lose a crucial element of the analysis.

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(())7 The definitions are adapted from European Commission (2018) *Development of a system of common indicators for European Regional Development Fund and Cohesion Fund interventions after 2020*. ([15]) RCO08 RTDI: Value of R+I equipment; RCO13 Digital: Value of digital services, products and processes; RCO24 Climate: Investments in disaster management; RCO96 RTDI: Value of Interregional investment; RCO107 Circular: Investments in separate waste collection; RCO122 Investments in disaster management (non-climate); RCO27 Climate: Strategies addressing climate change adaptation).

([15]) RCO08 RTDI: Value of R+I equipment; RCO13 Digital: Value of digital services, products and processes; RCO24 Climate: Investments in disaster management; RCO96 RTDI: Value of Interregional investment; RCO107 Circular: Investments in separate waste collection; RCO122 Investments in disaster management (non-climate); RCO27 Climate: Strategies addressing climate change adaptation).

For the purpose of this exercise only the milestones and targets referring to investments were taken in consideration, the reforms related ones were excluded due to the fact that no comparison with ERDF/CF/JTF indicators was possible on them. More information on the RRF policy areas considered for this comparative analysis are provided in the Second interim report.

Policy sector

The policy sectors structuring the comparison correspond to the 2021-2027 Specific Objectives (SOs). In particular, the study covers the SOs corresponding to POs 1, 2, 3 and 4. PO5 is left out of this comparison (as Annex 1 to the CPR indicates, in fact, PO5 may use relevant common indicators listed for POs 1 to 4).

Investment type

The comparison is also structured by type of investment action, defined as an aggregation of thematically closely related Intervention Fields (IFs). The choice to introduce the concept of type of investment action in this comparison in addition to the structure by SO stems from different needs: ensuring a granular analysis; combining the policy/strategic dimension (covered by the SO) with the nature of the supported action (the IF); ensuring consistency throughout the whole study (type of investment actions will be a building block of the development of Investment Action Matrices). Common indicators and M&T are compared for the different types of investment actions of each SO.

Concerning **process indicators**, in both ERDF/CF and the RRF some indicators capture procedural steps or the amounts of financial support provided. However, most ERDF/CF common output and result indicators refer to measurable deliverables and do not include a broad set of process indicators comparable to those used under the RRF. ([16]) More in details, six concern financial amounts and relate to sectoral support to RTDI, digitalisation, climate, circular economy, and disaster management. They are: RCO08 RTDI: Value of R+I equipment; RCO13 Digital: Value of digital services, products and processes; RCO24 Climate: Investments in disaster management; RCO96 RTDI: Value of Interregional investment; RCO107 Circular: Investments in separate waste collection; RCO122 Investments in disaster management (non-climate). The seventh concerns the deployment of a sectoral strategy on climate adaptation (RCO27 Climate: Strategies addressing climate change adaptation). In terms of their nature, ERDF/CF common indicators are, by definition, quantitative, and their unit of measurement is univocally defined for ERDF/CF indicators in SWD (2021) 198. By contrast, under the RRF, process indicators are numerous and diversified. They are mostly formulated as milestones, which can be grouped into three main categories: initial steps of the project cycle, financial amounts, and

([16]) In principle, also common output indicators referred to beneficiaries of support (for instance, RCOs 01-05 on firms) could be considered as process indicators. However, if for the purposes of the comparative analysis they were considered process and not output indicators, the comparison of output indicators under PO1 (and other POs as well) would lose a crucial element of the analysis.

legislative, strategic, organisational or administrative documents (see table below).

Table 3: Main RRF process indicators

Category	Tag	Examples of actual milestones/targets
Initial steps of the project cycle	Publication of tenders/calls	• Public tender launched for additional hydrogen capacity • Launch of calls for Industrial parks • Launch of a call for the selection of the universities performing e-curriculum development
	Selection of projects/award of contracts	• Grant agreements signed for demonstration facilities for innovative green hydrogen technology • Projects selected to promote innovative digital educational solutions • Selection of Industry 4.0 projects
	Projects started/Works started ([17])	• At least 66 % of approved projects started • Start of all cycling and walking projects • Commencement of the retrofit works
Financial amounts	Funds allocated/committed	• Budget committed for electric vehicles chargers and hydrogen refuelling points • EUR 8364 million of financial institutions funds signed with final beneficiaries • Funds committed to the entities selected
	Transfer of resources to financial intermediaries	• The Ministry has completed the transfer of funds to CDP Venture Capital SGR • Capital transfer from the Lithuanian Government to INVEGA • Capital transfer of EUR 250 000 000 from the Portuguese Government to BPF and adoption of the investment policy for BPF
	Funds disbursed	• Disbursements made towards VET providers for green upskilling • Disbursement of funds in the form of loans to support the health and aerospace sectors • Disbursement of funds to R&D projects under PERTE Health

([17]) Milestones and targets have been classified as output indicators when they concern completed projects instead, i.e. when the underlying investment has produced its foreseen deliverable.

Category	Tag	Examples of actual milestones/targets
Legislation and strategic, organisational or administrative documents	Legislation	• Entry into force of the Digitalisation Fund Act • Legal framework for biogas production • Amendment of Social Services Act concerning inspections and complaints
	Strategy/plan/programme	• Walloon Strategy for deinstitutionalisation (Walloon health policy) • Adoption of a housing affordability strategy • Digitalisation of SMEs Plan 2021-2025
	Signature of agreement/establishment of financial instrument	• Signature of financing agreement between the European Investment Fund and the Government of Bulgaria • Establishment of financial instrument to support investment by micro, small and medium-sized enterprises • Setup of the Fund
	Administrative steps/Implementing agreements	• Signature of contractual agreements between the Ministry of Agriculture, Fisheries and Food (MAPA) and ENISA • Requirements, design and solutions for the different sub-measures are defined and approved • Conclusion of agreements with local governments on the implementation of projects
	Feasibility studies/Evaluations	• Feasibility studies for the Volkskundemuseum Wien and Prater Ateliers • Assessment of water retention potential and proposal of concrete measures • Evaluation of the support programme

Source: Consortium own elaboration

All seven ERDF/CF indicators are in principle present under the RRF, vice versa, not all RRF process indicators find an equivalent under ERDF/CF:

- For the RRF process indicators under the category "Initial steps of the project cycle" (see tables above), no correspondence is found in the list of ERDF/CF common indicators. In fact, the publication of calls, the selection of projects and the start of projects represent usual steps of the implementation of Cohesion Policy (as such, they are already tracked by Managing Authorities at the level of individual operation), but they do not translate into common indicators.

- Similarly, financial amounts are already tracked by Managing Authorities as well at operation level, as they represent cornerstones of ERDF/CF programme monitoring systems.
- No process indicators under the category of "Legislation and strategic, organisational or administrative documents" have equivalents under ERDF/CF common indicators, with the exception of RCO27 "Climate: Strategies addressing climate change adaptation (.[18]).

The RRF's process indicators can be a stimulus for reflection for ERDF/CF especially with regard to the category of "Legislation and strategic, organisational or administrative documents", as such indicators capture (and thus incentivise) pre-conditions, or ancillary features, of a solid public investment system. Steps of the project cycle and financial amounts are already tracked in ERDF/CF instead, and the question related to them is not as much about the potential usefulness of capturing (and incentivising) a certain action. Rather, the RRF's experience points to a potential usefulness of considering transforming such types of information into common indicators, possibly for their use to trigger payments.

Concerning result and output indicators, under ERDF/CF, the fact that common output and result indicators can be used under multiple SOs allows it to capture the same outputs and results in many different contexts. In addition, this flexibility makes the aggregation of data possible. The high variability of individual milestones and targets in the RRF leads to a more diversified set of output indicators than under ERDF/CF.

Focusing on **result indicators**, few milestones and targets are found in absolute terms under the RRF, i.e. few milestones and targets have been classified as result indicators (in contrast with a relative broad set of result indicators that ERDF/CF introduced). Ultimately, different elements of the two systems appear to be each instrument's strength: process indicators for the RRF, result indicators for ERDF/CF.

For some **policy areas** supported by the RRF, there is no correspondence between the RRF milestones or targets and the set of ERDF/CF common output and result indicators, as ERDF/CF do not support projects in areas, related to judicial and fiscal administration and rule of law.

In conclusion, Milestones and targets are highly heterogeneous because closely linked to the underlying investments (and because the different RRPs were prepared individually under time pressure). Crucially, the design of the RRF that

([18]) Other common indicators referred to strategies are RCO75 "Strategies for integrated territorial development supported" and RCO 80 "Community-led local development strategies supported", which have however been excluded from the scope of the comparison because referred to PO5, as mentioned in the methodological section (4.1.1). RCR 79 "Joint strategies and action plans taken up by organisations" is also out of scope for this study, since it is referred to Interreg.

prioritised the tailoring of indicators aimed to align with the specific needs of Member States and with the project features. At the same time, this heterogeneity significantly hampers the possibility to aggregate values across measures and countries, which in turn is a relevant element to ensure transparency and accountability, but also policy evaluation and learning ([19]). Against this background, the ERDF/CF common indicator system stands out for the higher degree of uniformity it enables.

2.3.2. Assessment of the potential of selected common indicators in a FNLC context

To identify the potential for using ERDF/CF common indicators in a FNLC contextthe study investigates different dimensions identified drawing on established international practice, taking into account literature on performance-based payment systems ([20]) and the specificity of the exercise in the context of this assignment. In particular, the following dimensions were considered:

- **Linkage to clear intervention logic**. Can the indicator be linked to a clear intervention logic?
- **Attribution.** Can the indicator's progress/achievement be reasonably attributed to the investment, and not be influenced by external events?
- **Time lag.** To which extent is a time lag expected between the intervention and the change measured by the indicator?
- **Robustness**. To which extent is there the possibility that due to the source for data collection the indicator value is precise/certain?
- **Homogeneity.** To which extent are the assumptions and calculation methods homogeneous among performance frameworks of ERDF/CF programmes?

([19]) It should also be noted that, the RRF includes a set of 14 indicators, common across Member States, which are linked to the six pillars. However, these indicators were introduced after the design of the national Plans and only capable of providing a broad overview of the overall achievements of the RRF

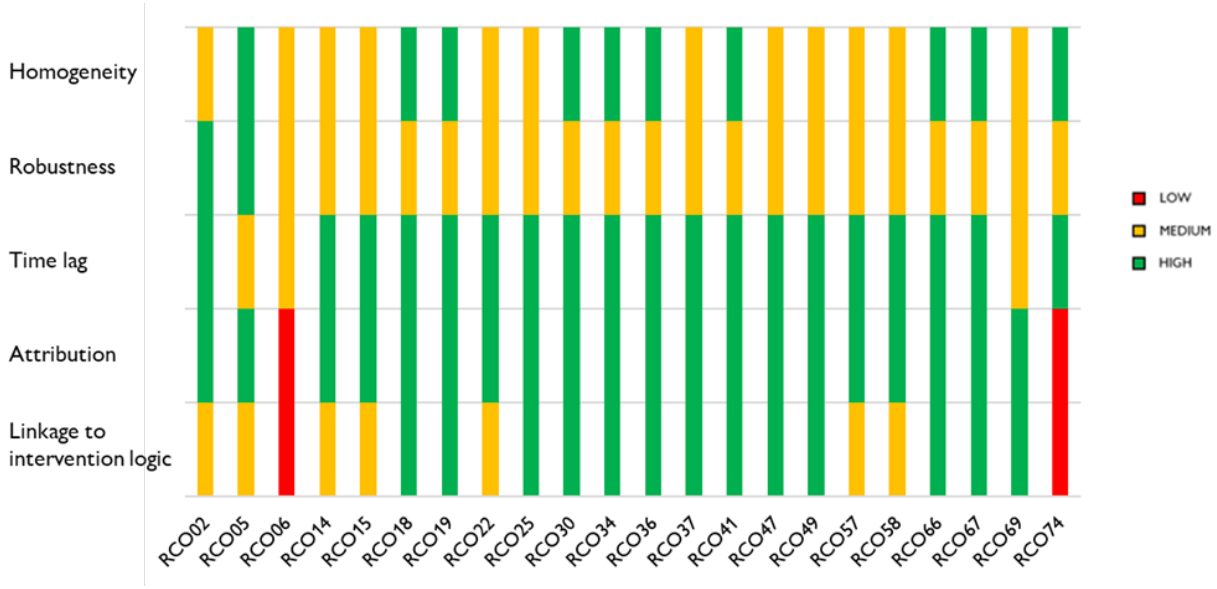
([20]) In addition to ECA reports, relevant bibliography includes, among others: ICF (2015). Payment by Results: Learning from the Literature. A review prepared for the National Audit Office; National Audit Office (2015). Outcome-based payment schemes: government's use of payment by results; National Audit Office (2015). Payment by results: analytical framework for decision-makers; OECD (2023). Linking results frameworks and financing. 15th workshop of the OECD Development Assistance Committee (DAC)'s Results Community; Robinson, M. and Last, D. (2009). A Basic Model of Performance-Based Budgeting. International Monetary Fund; Webster, R. (2016). Payment by results: Lessons from the Literature; European Commission (2021). Roadmaps for administrative capacity building – Practical toolkit; European Commission (2021).

Further information on the methodology used to assess the potential of the indicators can be found in Chapter 2.2 of the second interim report. In general, the overall potential of the 43 selected indicators was rated as follows: (i) Low - two or more of the dimensions considered are rated as low; (ii) Medium - only one of the dimensions considered is rated as low; (iii) High - none of the dimensions considered is rated as low, and one or more are rated as high.

The synthetic judgement on each selected indicator's potential for FNLC should be regarded as the preparatory step, as the ultimate assessment of the feasibility of using common indicators in a system of payments not linked to costs is provided in the subsequent steps described later in this chapter.

Overall, most of the output indicators considered are assessed as having a high potential for FNLC (91%, or 20 out of 22), as none of the dimensions considered is rated as low and one or more are rated as high. This group includes indicators linked by the ERDF/CF Regulation to PO1, PO2, PO3, and PO4. All of them score high on attribution, and all but two are assessed as high for the time lag, meaning the change measured by the indicator is expected to occur immediately after the investment. The linkage to a clear intervention logic and the robustness criterion are assessed as either high or medium, depending on the indicator. This group of indicators with high potential for FNLC includes several ones that refer to number of supported entities or capacity aspects.

Figure 9: The five dimensions of the analysis for each indicator

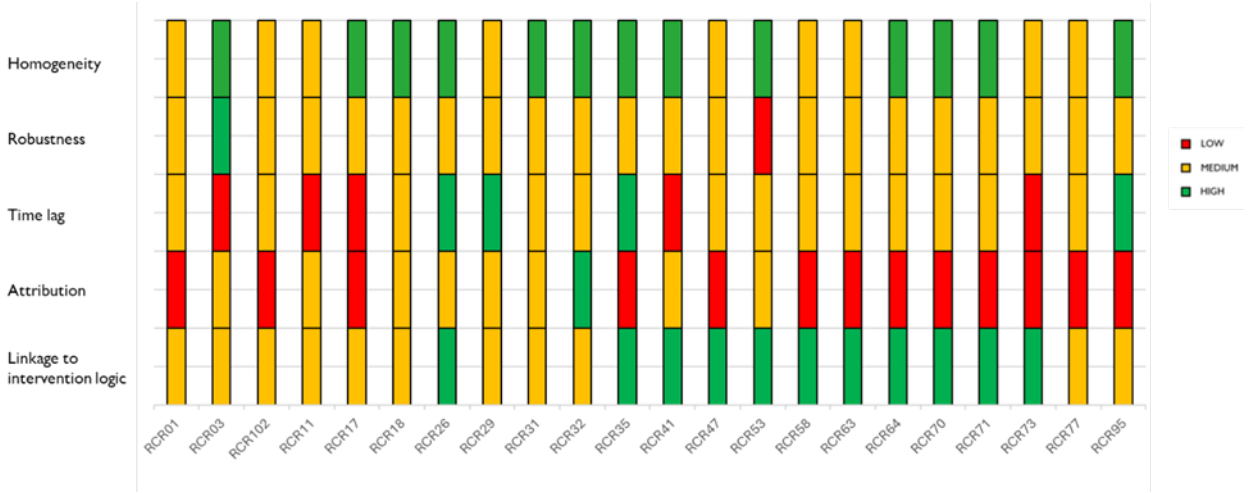


Source: Consortium own elaboration

For what concerns the result indicators, they are assessed as having a medium potential for FNLC (68%, or 15 out of 22), as one of the five criteria considered was rated as low. This group includes indicators linked by the ERDF/CF Regulation to PO1, PO2, PO3, and PO4. A common feature of these indicators assessed as having medium potential for FNLC is that most (11) score

low on attribution. Additionally, a relatively large number (9) of these indicators score high for their linkage to a clear intervention logic, as their use is tied to a single SO according to Annex 1 of the ERDF/CF Regulation. However, this high score is offset by scores in the other criteria. The only two indicators assessed as having a low potential for FNLC (in terms of synthetic judgment) are RCR17 “Firms: New enterprises surviving in the market” and RCR73 “Health: Annual users of health care facilities”. The first one refers to RSO1.3 “Growth and competitiveness of SMEs,” according to Annex 1 of the ERDF/CF regulation and measures the number of new enterprises supported that remain active in the market at least one year after completion of the output. The fact that an enterprise is active in the market can be determined, for example, based on the enterprise's declared turnover for the fiscal year following the year when the output was completed. As a result, the indicator scores low on the time lag criterion. The attribution criterion is also assessed as low because it is highly likely that external events contribute to the indicator’s progress. The second one, RCR73, refers to RSO4.5 and measures the number of patients served by the new or modernised health care facility during the year after the completion of the intervention (starting with the time when the new or modernised health care facility becomes operational). The indicator scores low on the attribution and the time lag criteria, determining a synthetic judgment of low potential.

Figure 10: The five dimensions of the analysis for each result indicator



Source: Consortium own elaboration

3. Testing the application of common indicators to an FNLC system

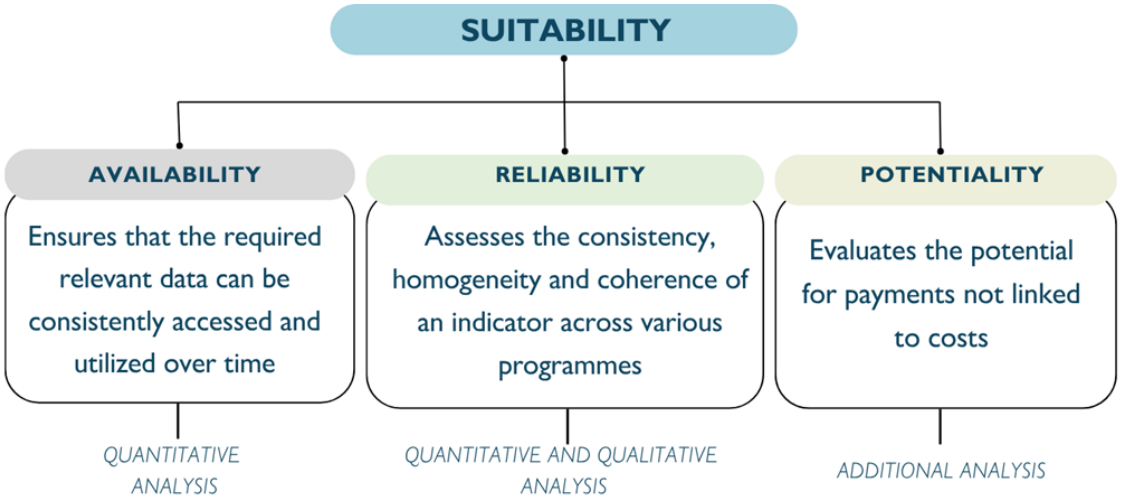
This chapter of the report investigate how common indicators can be used within an FNLC system.

- It first outlines the process undertaken to review and synthesise the results of previous analyses (qualitative, quantitative, and comparative) in order to identify which of the 43 common indicators selected under the quantitative analysis are most suitable for use in a system of FNLC, in line with the study’s logic approach (**suitability assessment**) (Section 3.1: Suitable common indicators selection).
- Taking into account the results of the previous analyses and the suitability assessment, common output and result indicators were combined with process indicators to cover the full intervention logic of different investment actions. These were the same investment actions used to assess granularity in the qualitative analysis and for comparison with the RRF in the comparative analysis. This process led to the development of the **Investment Action Matrices**. It also helped to identify the implications of using common indicators in an FNLC system, as well as key strengths and weaknesses. (Section 3.2: Application of common indicators in FNLC schemes).
- Finally, a stakeholder analysis was also conducted to assess the roles and responsibilities of different actors involved in the implementation, monitoring, and evaluation of FNLC schemes using common indicators (Section 3.3: Implications for different stakeholders).

3.1. Suitable common indicators selection

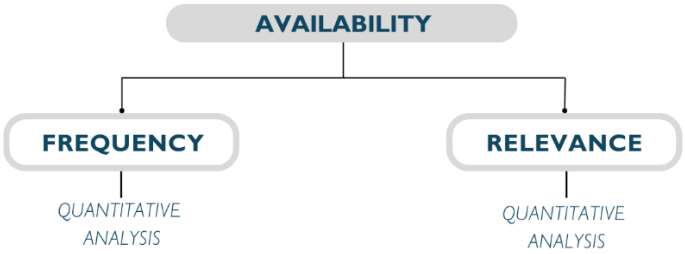
This section describes the **suitability check** carried out on indicators to identify which common indicators are most suitable in a context of “payments not linked to cost”. The suitability of each indicator was assessed through a multi-criteria analysis based on three criteria: **availability, reliability**, and **potentiality.** The scoring for availability and reliability criteria was based on the results of the quantitative and qualitative analyses. The assessment of the criterion of potentiality was carried out under the framework of the comparative analysis.

Figure 11: Suitability assessment



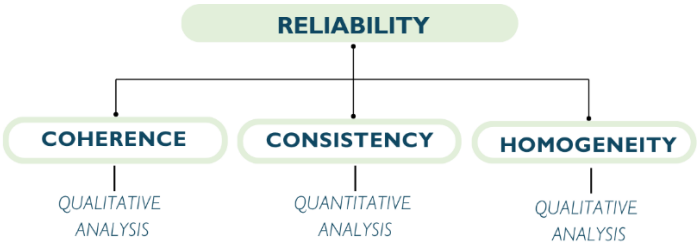
In order to identify suitable indicators for use in a system of FNLC, a final suitability check was carried out on the shortlist of 43 indicators integrating three main criteria: potentiality (see previous section), availability and reliability. The final two criteria, namely **availability** and **reliability**, were evaluated on the basis of a qualitative and quantitative analysis (see Section 2) across five distinct dimensions: frequency, relevance, coherence, consistency and homogeneity (see the accompanying illustration).

Figure 12: "Availability" dimensions



Source: Consortium own elaboration

Figure 13: "Reliability" dimensions



Source: Consortium own elaboration

Availability refers to the extent to which relevant data can be consistently accessed and utilized over time. This criterion was assessed by analysing the *frequency* (see section 2.1.1) and *relevance* (see section 2.1.2) of each result indicator, leveraging the findings from the quantitative analysis.

Table 4: How availability dimensions were scored

Criteria	Availability scores
Frequency *Quantitative analysis*	Low (0): Indicator is among the bottom 30% of all indicators by frequency ranking, where the frequency ranking.
	Medium (1): Indicator is between the 30th and the 70th percentile of all indicators sorted by frequency ranking.
	High (2): Indicator is among the top 30% of all indicators by frequency ranking
Relevance *Quantitative analysis*	Low (0): Indicator is among the top 30% of all indicators by relevance ranking
	Medium (1): Indicator is between the 30th and the 70th percentile of all indicators sorted by relevance ranking.
	High (2): Indicator is among the bottom 30% of all indicators sorted by relevance ranking.

Reliability, entails that the indicator is consistently used for the similar investments (i.e. SO and intervention field) and in homogeneous situations across different regional and national programmes, encompassing also the indicators coherence with the methodological guidance issued by DG REGIO (i.e., staff working documents). This criterion was assessed by examining the *consistency* (section 2.1.3) of the indicators, based on the results obtained from the quantitative analysis, as well as their *coherence* (section 2.2.1) and *homogeneity* (section 2.2.2) as detailed in the qualitative analysis.

Table 5: How reliability dimensions were scored

Criteria	Reliability scores
Consistency *Quantitative analysis*	*Low (0): Indicator is among the bottom 30% of all indicators sorted by correlation ranking.*
	Medium (1): Indicator is between the 30th and the 70th percentile of all indicators sorted by correlation ranking.
	High (2): Indicator is among the top 30% of all indicators by correlation ranking
Coherence *Qualitative analysis*	*High (2): All the indicators were scored as 'highly coherent' because, in the majority of cases, even when not explicitly specified, coherence could be assumed. No inconsistencies were found with the SWD or among the definitions of the same indicators across the different SOs*
Homogeneity *Qualitative analysis*	*Low (0): More than 50% of the programmes used more than three sources/methods for target setting*
	Medium (1): More than 50% of the programmes used a maximum of two sources/methods for target setting (Note: If one of these two sources is classified as "other," it does not contribute to medium homogeneity, as "other" increases heterogeneity).
	High (2): More than 50% of the analysed programmes used only one source/method for target setting (Note: If more than 50% of the programmes rely on "other" as the sole source, this does not contribute to high homogeneity, as it increases heterogeneity)

The final stage of the suitability check entailed the integration of the findings from the availability and reliability analysis with the potentiality in multicriteria analysis. Based on this combined assessment, indicators were categorised according to their overall level of suitability for use in an FNLC system, as follows:

- **High suitability:** indicators having an average score between 1.17 and 1.49;
- **Medium suitability**: indicators having an average score between 1.51 and 1.82;
- **Low suitability**: indicators having an average score between 1.83 and 2.00.

For what concern **output indicators**, all were characterised by high or medium suitability for FNLC, except for:

- RCO06 – RTDI: Researchers working in supported research facilities (SO 1.1) which was deemed suitable to a limited extent (i.e., “Low”) due to its low score on potential for payments not linked to costs.
- RCO15 – Firms: Capacity of incubation created (SO 1.3): this was excluded due to its low score under consistency.
- RCO25 - Climate: flood protection newly built or consolidated (SO 2.4): RCO25 was rated as "medium" under various criteria, including frequency, relevance, consistency, and homogeneity.
- RCO37 - Environment: Surface of Natura 2000 sites (SO 2.7): This indicator received a low score under consistency.
- RCO47 - Rail: Length of new or upgraded rail - TEN-T (SO 3.1): RCO47 received a low score under frequency. It describes the output of interventions involving the construction of large, cost-intensive infrastructure, which is difficult to fund with Cohesion Policy. For this reason, the number of operations funded monitored using this indicator is very low.

The following section outlines the results of the suitability check. The table below provides an overview of the output indicators that were analysed and the respective scores for each of the criteria.

Table 6: Suitability check output indicators

Indicator short name	SO	Admissibility						SUITABILITY
		Availability		Reliability			Potentiality	
		Frequency (Quantitative analysis)	Relevance (Quantitative analysis)	Coherence (Qualitative analysis)	Consistency (Quantitative analysis)	Homogeneity (Qualitative analysis)	Potential for payments not linked to costs (Potentiality analysis)	
RCO02 – Firms: Grant aided	1.1	2	2	2	2	1	2	High
RCO06 – RTDI: Researchers with improved infrastructure	1.1	2	2	2	1	1	0	Low
RCO02 – Firms: Grant aided	1.2	2	2	2	2	2	2	High
RCO14 – Digital: Public institutions supported for Digital	1.2	2	2	2	1	1	2	Medium
RCO02 – Firms: Grant aided	1.3	2	2	2	2	1	2	High
RCO05 – Firms: New Enterprises	1.3	2	2	2	1	2	2	High
RCO15 – Firms: Capacity of incubation created	1.3	1	2	2	0	1	2	Low
RCO41 – Digital: Add. dwellings with broadband of v high capacity	1.5	1	1	2	2	2	2	Medium
RCO18 – Energy: Dwellings with improved energy peformance	2.1	2	2	2	2	2	2	High
RCO19 – Energy: Public buildings with improved energy performance	2.1	2	2	2	2	2	2	High
RCO22 – Energy: Renewable energy capacity	2.2	2	2	2	1	1	2	Medium
RCO25 – Climate: Flood protection newly built or consolidated	2.4	1	1	2	1	1	2	Low
RCO30 – Water: Length of pipes for public water supply	2.5	2	1	2	1	2	2	Medium
RCO34 – Circular: Additional capacity for waste recycling	2.6	2	1	2	2	2	2	High
RCO36 – Env: Green infrastructure (not related to climate change)	2.7	2	1	2	0	2	2	Medium
RCO37 – Env: Surface of Natura 2000 sites	2.7	1	1	2	0	1	2	Low
RCO57 – Urban Trans: rolling stock for public transport	2.8	2	2	2	1	1	2	Medium
RCO58 – Urban Trans: Dedicated cycling infrastructure supported	2.8	2	2	2	1	1	2	Medium
RCO47 – Rail: Length of new or upgraded rail - TEN-T	3.1	0	1	2	1	1	2	Low
RCO49 – Rail: Length of rail reconstructed or modernised - TEN-T	3.1	1	2	2	2	1	2	Medium
RCO66 – Education: Classroom capacity of childcare facilities	4.2	1	1	2	2	2	2	Medium
RCO67 – Education: Classroom capacity of education facilities	4.2	2	2	2	2	2	2	High
RCO69 – Health: Capacity of health care facilities	4.5	2	2	2	1	1	2	Medium
RCO74 – The population covered by projects in the framework of strategies for integrated territorial development	5.1	2	2	2	1	2	0	Medium
RCO74 – Population covered in integrated territorial development	5.2	2	2	2	1	2	0	Medium

Source: Consortium own elaboration

With regard to the **result indicators**, the suitability check revealed that the following are the least suitable (i.e., scored as "Low") among the selected result indicators to be used in an FNLC system:

- RCR17 - Firms: New enterprises surviving in the market (SO 1.3)
- RCR18 - Firms: SMEs using incubator services (SO 1.3)
- RCR41 – Water: Population with improved water supply (SO 2.5)
- RCR47 - Circular: Waste recycled (SO 2.6)
- RCR63 - Urban Trans: Annual users of tram and metro lines (SO 2.8)
- RCR58 - Road: Annual users railways (SO 3.1)
- RCR70 - Education: Annual users of childcare facilities (SO 4.2)
- RCR73- Health: Annual users of health care facilities (SO 4.5)
- RCR77 – Visitors of cultural and tourism sites (SO 5.1)

Table 7: Suitability check for result indicators

Indicator	SO	Admissibility						SUITABILITY
		Availability		Reliability			Potentiality	
		Frequency (Qunatitative analysis)	*Relevance (Qunatitative analysis)*	*Coherence (Qualitative analysis)*	*Consistency (Qunatitative analysis)*	*Homogeneity (Qualitative analysis)*	*Potential for payments not linked to costs (Potentiality analysis)*	
RCR03 – RTDI: SMEs introducing product or process innovation	1.1	2	2	2	1	2	1	Medium
RCR102 – RTDI: New researchers	1.1	2	2	2	1	1	1	Medium
RCR11 – Digital: Users of new and upgraded public digital services	1.2	2	2	2	1	1	1	Medium
RCR01 – Jobs created in supported entities	1.3	2	2	2	1	1	1	Medium
RCR17 – Firms: New enterprises surviving in the market	1.3	1	1	2	0	2	0	Low
RCR18 – Firms: SMEs using incubator services	1.3	1	1	2	0	2	2	Low
RCR53 – Digital: Dwellings with broadband to vhc network	1.5	1	0	2	2	2	2	Medium
RCR29 – Climate: Estimated GHG emissions	2.1	2	2	2	1	2	2	High
RCR26 – Energy: Annual primary energy consumption	2.1	2	2	2	1	2	2	High
RCR29 – Climate: Estimated GHG emissions	2.2	2	2	2	1	2	2	High
RCR31 – Energy: Total renewable energy produced	2.2	2	1	2	1	2	2	Medium
RCR32 – Energy: Renewable energy capacity	2.2	2	1	2	2	2	2	High
RCR35 – Climate: Population benefiting from flood protection	2.4	2	2	2	0	2	1	Medium
RCR41 – Water: Population with improved water supply	2.5	1	1	2	1	2	1	Low
RCR47 – Circular: Waste recycled	2.6	1	1	2	2	1	1	Low
RCR95 – Env: Pop. with access to green infrastructure	2.7	2	2	2	1	2	1	Medium
RCR29 – Climate: Estimated GHG emissions	2.8	2	2	2	1	1	2	Medium
RCR63 – Urban Trans: Annual users of tram and metro lines	2.8	1	1	2	2	1	1	Low
RCR64 – Urban Trans: Annual users of cycling infrastructure	2.8	2	1	2	2	2	1	Medium
RCR58 – Road: Annual users railways	3.1	1	2	2	0	1	1	Low
RCR70 – Education: Annual users of childcare facilities	4.2	1	0	2	1	2	1	Low
RCR71 – Education: Annual users of education facilities	4.2	2	1	2	2	2	1	Medium
RCR73 – Health: Annual users of health care facilities	4.5	2	2	2	0	1	0	Low
RCR77 – Visitors of cultural and tourism sites	5.1	2	2	2	0	1	1	Low
RCR77 – Visitors of cultural and tourism sites	5.2	2	2	2	0	2	1	Medium

Source: Consortium own elaboration

3.2. Application of common indicators in FNLC schemes

To explore the potential use of ERDF/CF common indicators in the context of FNLC, the shortlisted indicators were tested to be used as possible conditions (see box below) to trigger payments for the main types of investment actions implemented under Cohesion Policy**.**

Box 3: Understanding "conditions" in the context of FNLC

Based on Article 125 of the Financial Regulation (Regulation (EU, Euratom) 2018/1046)

FNLC is a simplified form of Union financing whereby payments are made upon the **fulfilment of predefined conditions**, without the need to demonstrate or report the actual costs incurred.

As per **Article 125(1)** of the Financial Regulation:

"The contribution from the Union budget shall be paid when the conditions set out in the financing decision or the agreement are met. Those conditions shall relate to the **achievement of results** through the **delivery of outputs or the fulfilment of conditions**."

FNLC is characterised by the following key elements:

No obligation to report eligible costs or expenses;

Payments are triggered by verifiable achievements, such as outputs, results, or the fulfilment of policy-relevant conditions;

The legal act or agreement defines in advance the conditions and verification methods;

Control and audit focus on whether the conditions have been fulfilled, not on cost eligibility or underlying expenditure.

This financing modality aligns with the broader objectives of performance-based management, **simplification**, and **result orientation** in EU spending programmes, and is used in instruments such as the **Recovery and Resilience Facility (RRF)**, as well as in pilot or mainstream applications in **Cohesion Policy** and other shared management frameworks.

The outcome of this testing exercise is the development of **IAMs.**

3.2.1. Rationale for the design of Investment Action Matrices

The setting up of the IAMs builds on the results of the **suitability check** and aims to provide a starting model to be further developed into potential FNLC schemes for each SO and each relevant investment action. IAMs are presented in section 3.2.2 and illustrate the possible combinations of indicators (i.e., process indicators, common output indicators, and common result indicators) that capture the intervention logic of each type of operation. The integration of indicators within each IAM is informed by the findings of the homogeneity assessment carried out as part of the qualitative analysis, in which the investment actions contributing to each indicator were identified. This approach ensured alignment of the matrices with the identified intervention logic and strategic objectives.

The overall logic of the IAM is based on the following criteria:

(a) **Balanced risk allocation**: there must be a balance between the risks borne by the principal (Commission) and the agent (Member States). To achieve this, conditions and results should be distributed throughout the entire intervention cycle, from inception to the display of results. This proportional allocation of risk ensures fairness and accountability across all levels of implementation.

(b) **Comprehensive lifecycle coverage:** conditions and results spanning the entire operation lifecycle support a regular financial flow and act as an effective monitoring system, providing early warnings in case of difficulties. Concentrating conditions and results predominantly at the end of the cycle would hinder timely financial disbursements and fail to prevent potential major failures in the intervention.

(c) **Distinct conditions and results:** conditions and results should represent different stages of the operation to avoid overlap. This separation ensures proportional risk allocation and supports both financial stability and timely monitoring, as described in points (a) and (b).

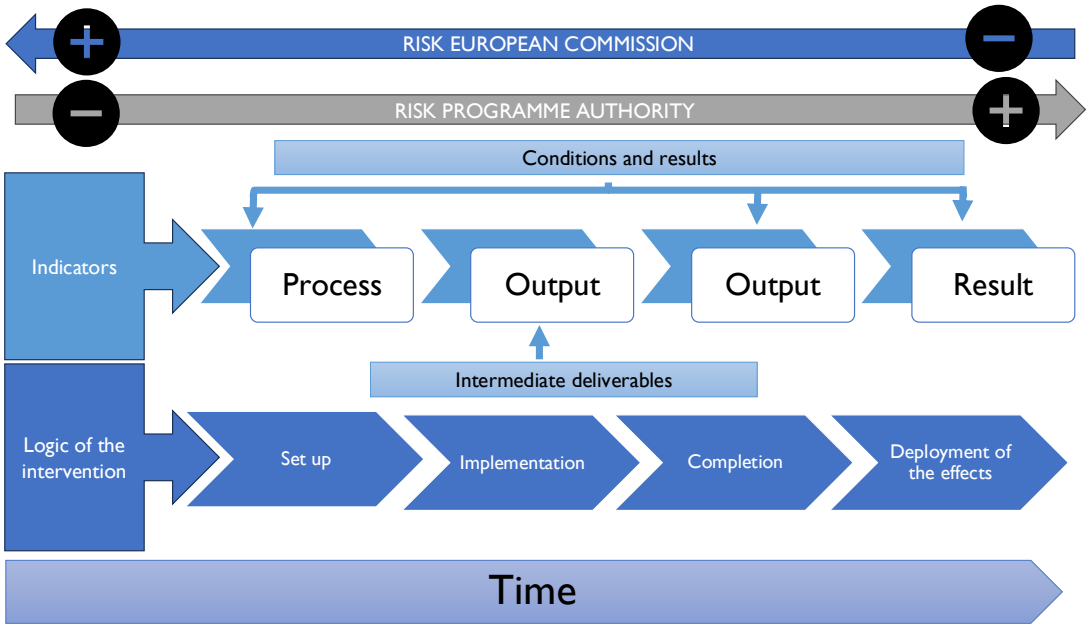
(d) **Focus on results:** To better reflect the intended added value of the FNLC approach — particularly its emphasis on performance over expenditure absorption — it is advisable that the indicators used within FNLC schemes encompass not only processes and outputs, but also results. Incorporating a results dimension contributes to addressing concerns raised by the European Court of Auditors and may strengthen the overall effectiveness of the approach". Where results cannot be meaningfully defined or measured, alternative reimbursement mechanism (e.g., real costs or SCOs) may offer a more suitable approach.

(e) **Avoiding excessive information burden:** to reduce administrative complexity, the design incorporates three indicators for four stages of the intervention: the intermediate deliverable and the third result/condition share

the same output indicator. At any stage requiring payment, only one condition/result and its corresponding indicator are used, minimizing information requests and reducing ambiguity or uncertainty.

The IAMs were cross-checked with the outcomes of Work Package 2 from the ex-post evaluation. The analysis revealed significant overlap between the IAMs and the clusters of operations commonly used in the previous programming period. This alignment confirms the relevance and applicability of the IAMs, ensuring they are grounded in historical implementation patterns and effectively address continuity and consistency in programme design and delivery.

Figure 14: Overall logic underpinning the investment action matrices



Source: Consortium own elaboration

There are three types of IAMs:

- **High/medium suitability indicators**: these matrices use exclusively common output and result indicators that scored "High" or "Medium" at the suitability test. These indicators are considered *available, reliable*, and having potential for *potential* for payments not linked to costs. This makes them a solid foundation for developing FNLC schemes.
- **Including also low suitability indicators**: these matrices include also indicators that scored "Low" in the suitability check. Although the selected indicator shows some weaknesses, the matrix still offers valuable insights for FNLC schemes.
- **Exploratory Indicators**: These matrices use also indicators outside the scope of those analysed in the study. Although unvalidated, they provide

useful information and potential inspiration for innovative FNLC approaches.

Each IAM includes:

- **a process indicator**, as its achievement is linked to an administrative, procedural, or institutional accomplishment. Since the 2021–2027 period does not explicitly define process indicators, we draw on the experience of the RRF and the 2014–2020 programming period. Process indicators describe programme implementation processes with information on the support provided (e.g. number of selected projects, funds allocated). They focus on the actions taken to deliver the investment action, rather than the final outputs or results. Process indicators are instrumental in tracking progress during the implementation phase, offering insights into the effectiveness and efficiency of the project or programme's execution. For the purpose of the first result/ condition, the indicators should signal that the administrative process of delivery has commenced, which might be related to the selection process or the completion of a specific procedural stage (e.g., approval of preliminary planning, publication of public procurement calls). They are not part of the common indicator set, but to provide a robust framework for FNLC, they are important and practical. Furthermore, although they are no longer explicitly used in the current programming period, they were widely known in Cohesion Policy during 2014–2020, where they were referred to as **Key Implementation Steps (KIS) ([21])**. They are systematically used in the RRP as initial milestones.
- **an output indicator** (as a proxy of intermediate delivery), as they are tied to the delivery of the operation and its outputs.
- A **result indicator**, acting as a proxy for the operation's goal. This ensures alignment with the intervention's intended outcomes.

Furthermore, in some cases, **multiple IAMs** are provided for the same investment action because different combinations of indicators can be considered. The best solutions for each investment action, including indicators

([21]) See for further details on the 2014-2020 performance framework the Guidance for Member States on Performance framework, review and reserve Version 2.0 – 19/06/2018 Available online:https://ec.europa.eu/regional_policy/sources/evaluation/2014/gn_performance_framework_review_and_reserve.pdf. Moreover, another interesting reference is the European Court of Auditors Special Report on the performance framework. It states that: "KIS refers to specific intermediate stages in the implementation of operations which are necessary to achieve the targets set for an investment priority for 2023. They can solely be used for the purposes the performance framework and may refer to different stages of implementation, e.g. selection of projects or approval of major projects to deliver outputs" *Special Report No 15/2017 — Ex-ante conditionalities and performance reserve in Cohesion*. Partnership Agreements, 2014–2020. Luxembourg: Publications Office of the European Union, 2017. Available online: *https://op.europa.eu/webpub/eca/special-reports/partnership-agreements-15-2017/en/#A19*

that achieved the highest scores in the suitability check and/or which are the most frequently used for that type of investment actions, are presented as the **first-choice option**. However, a series of **second-choice options** are also included, featuring alternative indicators. These **alternative indicators** were found to be less suitable for use in an FNLC system. However, they remain relevant due to:

- Certain dynamics of the scoring system developed by the study team, which may prevent some considerations from being fully accounted for when assessing an indicator. These will be explained in the following sections.
- The necessity of covering specific types of alternative outputs or indicators, depending on the policy objectives of different programmes.

It should also be noted that all the IAMs presented in Section 3.2.2 refer to the reimbursement of the Union contribution from the European Commission to the Member States' programmes (i.e. the **upper level**). Further information on the different levels of reimbursement is provided in the box below.

Box 4: Use of FNLC lower/ upper Level in the CPR

FNLC (Art. 95 CPR) can be applied at two levels:

- **Upper level**: Reimbursement of the Union contribution by the Commission to the Member States' programmes (Article 51(a) CPR).
- **Lower level**: Reimbursement of grants provided by the Member States to beneficiaries (Article 53(f) CPR).

FNLC can only be used to reimburse beneficiaries (lower level) if it is also applied for the same type of operation at the upper level. On the other hand, when FNLC is used only at the upper level, Member States have the flexibility to reimburse beneficiaries for the same type of operations using different forms of reimbursement, i.e., Simplified Cost Options (SCOs) or reimbursement of eligible costs actually incurred by beneficiaries.

Finally, Annex III of the second interim report includes additional and more developed IAM options not fully detailed in this short report:

- During the IAM design phase, 4 different implementation modalities were identified based on the nature of the operation, influencing the selection of process indicators (see box below). Alternative indicator options are presented in Annex III.
- The IAMs were also further elaborated as preliminary FNLC schemes, with these extended options likewise detailed in Annex III. The typology of additional information provided in the annex are described in the box below.

Box 5: Additional options provided in the Second Interim Report

DEVELOPMENT OF PRELIMINARY FNLC SCHEMES

Each IAM to be further developed in a FNLC scheme is enriched with:

1. A typology and description of the operation (incl. intervention codes),
2. Link to the relevant Specific Objective,
3. Conditions or results triggering payments,
4. Intermediate deliverables (if applicable) relevant for reimbursement.

3.2.2. Investment Action Matrices (IAM) as basis for the development of performance-based delivery model with FNLC

This section introduces the all the IAM developed. They will be presented per PO, and for each PO, three different matrices (when available) will be displayed in the following order: (i) The high/medium suitability indicators IAM (ii) the IAM including also low suitability indicators and (iii) the exploratory indicators IAM.

PO1 – A more competitive and smarter Europe by promoting innovative and smart economic transformation and regional ICT connectivity

For what concerns **PO1,** for most of the investment actions it was possible to develop first choice and second-choice options using high/medium suitability indicators IAMs.

In particular, second options using high/medium suitability indicators were proposed for 3 of these investment actions:

- **R&I cooperation and technological transfer**: the indicator RCR03 used in the first-choice option was selected taking into account the granularity assessment ([22]) carried out under the qualitative analysis, where it resulted to be the most used result indicator under this typology of investment action. However, a valid alternative indicator could be: "RCR102 - Research jobs created in supported entities," applicable to all operations aiming to improve research capacity in companies through the introduction of new personnel and where the target group is broader than SMEs (e.g., large enterprises, micro-enterprises).
- **R&I in enterprises:** the indicator RCR102 used in the first-choice option was selected taking into account the granularity assessment carried out under the qualitative analysis, where it resulted to be the most used result indicator under this typology of action. However, a valid alternative indicator could be: "RCR03 - RTDI: SMEs introducing product or process innovation," applicable to all operations aiming to introduce new processes or products in SMEs (therefore targeting a narrower scope).
- **Business development and support:** The indicator RCO02 used in the first-choice option was selected based on the granularity assessment carried out under the qualitative analysis, where it was identified as the most commonly used output indicator for this type of action and received a high practicability score. However, a valid alternative could be RCO05 - Firms: New Enterprises, which - even if it resulted to be less used - is more suitable if the programme aims to focus support on newly created enterprises established within the previous three years.

([22]) More detailed information on the results of the granularity analysis can be find in sections 1.3 – 1.7 of the second interim repot

Table 8: The high/medium suitability indicators IAM PO1

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Skills, advanced support and incubation	1.1	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR03** - RTDI: SMEs introducing product or process innovation	**First-choice option**
R&I cooperation and technological transfer	1.1	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR03** - RTDI: SMEs introducing product or process innovation	**First-choice option**
R&I cooperation and technological transfer	1.1	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR102** - RTDI: New researchers	**Second-choice option**
R&I in enterprises	1.1	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR102** - RTDI: New researchers	**First-choice option**
R&I in enterprises	1.1	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR03** - RTDI: SMEs introducing product or process innovation	**Second-choice option**
E-government	1.2	Signature of contracts/agreements	**RCO14** - Digital: Public institutions supported for Digital	**RCR11** - Digital: users of new and upgraded public digital services	**First-choice option**
E-inclusion	1.2	Signature of contracts/agreements	**RCO14** - Digital: Public institutions supported for Digital	**RCR11** - Digital: users of new and upgraded public digital services	**First-choice option**
E-health	1.2	Signature of contracts/agreements	**RCO14** - Digital: Public institutions supported for Digital	**RCR11** - Digital: users of new and upgraded public digital services	**First-choice option**
Digital connectivity	1.2	Signature of contracts/agreements	**RCO14** - Digital: Public institutions supported for Digital	**RCR11** - Digital: users of new and upgraded public digital services	**First-choice option**
Business development and support	1.3	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR01** - Jobs created in supported entities	**First-choice option**

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Business development and support	1.3	Signature of contracts/agreements	**RCO05** - Firms: New Enterprises	**RCR01** - Jobs created in supported entities	**Second-choice option**
Circular economy	1.3	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR01** - Jobs created in supported entities	**First-choice option**
Innovation and cooperation	1.3	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR01** - Jobs created in supported entities	**First-choice option**
Entrepreneurship and SME survival	1.3	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR01** - Jobs created in supported entities	**First-choice option**
Digital connectivity	1.5	Signature of contracts/agreements	**RCO 41** - Digital: Add. dwellings with broadband of v high capacity	**RCR 53** - Digital: Dwellings with broadband to vhc network	**First-choice option**

For two investment actions, it was not possible to develop IAM using high/medium suitability indicators because the only available options scored "low" at the suitability test. Specifically:

- For what concern **R&I research centres** and **Enterprise incubation** the indicator **RCO06 - RTDI: Researchers with improved infrastructure** received an overall low suitability score, mainly due to its low rating for potential for use in an FNLC framework. Similar to RCO02, it does not precisely measure a specific deliverable of the intervention, as an output indicator should (CPR Article 2). Furthermore, this indicator can be measured at the start of the project—unlike RCO02—making it less suitable for directly supporting payments based on an achieved output. However, given the complexity of defining common deliverables for research and innovation interventions, it may be a potential option to be used in an FNLC scheme.
- For **Entrepreneurship and SME survival**, it was decided to present the second option with an increased focus on new enterprises compared to the option presented in the table above (i.e., RCO02 and RCR01). This option includes **RCR17 - Firms: new enterprises surviving in the market**, which received an overall low suitability score, due to its low rating in consistency (e.g., similar targets are established for indicators with

comparable financial allocations). This is probably due to the fact that the indicator is linked to multiple intervention areas, as it can be used under all SOs and is therefore applied to monitor different types of enterprise investments. The budget allocated to an operation covered by this indicator can be influenced by various factors, depending on the nature of the beneficiary—whether it is an individual entrepreneur, a completely new enterprise to be stabilised, or an already operating business—the sector in which the targeted enterprises/entrepreneurs operate, and the type of initial investment needed, as well as the type of support provided (e.g., consultancy services or financial support for the acquisition of equipment).

The indicator received also a low potentiality score (i.e., scoring low under the attribution and time lag dimensions[23]). External events likely contribute to the indicator's progress, making it difficult to attribute the deliverable solely to the underlying investment.

However, in cases where operations focus on newly established enterprises (RCO05), it is possible to draw a causal link between the investment (support to a new enterprise) and the indicator's deliverable (new enterprises still active in the market one year after project completion). In this case, the indicator is still deemed to be a potential solution.

Table 9: The IAM including also low suitability indicators PO1

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
R&I research centres	1.1	Signature of contracts/agreements	**RCO06** - RTDI: Researchers with improved infrastructure	**RCR102** - RTDI: New researchers	**First-choice option**
Enterprise incubation	1.3	Signature of contracts/agreements	**RCO05** - Firms: New Enterprises	**RCR17** - Firms: new enterprises surviving in the market	**First-choice option**
Entrepreneurship and SME survival	1.3	Signature of contracts/agreements	**RCO05** - Firms: New Enterprises	**RCR17** - Firms: new enterprises surviving in the market	**Second-choice option**

Regarding the investment action **Digitising Firms** under SO 1.2, none of the 22 common output indicators (identified under the quantitative analysis) were used

[23] Detailed potentiality score information are provided in second interim report in section 2.2

to measure the final condition of the potential FNLC scheme. However, the comparative analysis identifies **RCR13 - Digital: enterprises reaching high digital Intensity** as a relevant indicator for the "Digitising Firms" investment action. Furthermore, the analysis also highlights that similar indicators are also present in the RRF for covering comparable interventions. Both Cohesion Policy and RRF indicators rely on measuring the number of entities with improved digital maturity or intensity, demonstrating their relevance in capturing advancements in digital capabilities. This makes RCR13 a suitable option to be considered in the development of a potential FNLC scheme.

Table 10: The exploratory indicators IAM PO1

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Digitising firms	1.2	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR13** - Digital: Enterprises reaching high digital intensity.	**First-choice option**

PO2 – A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate change mitigation and adaptation, risk prevention and management, and sustainable urban mobility

It should be noted that, regarding PO2, an IAM was not developed for all investment actions used for the qualitative and comparative analysis. In particular, the following investment actions were excluded:

- **Air quality:** granularity assessment under the quality analysis connected this investment actions only to a result indicator, **RCR95 - Environment: population with access to green infrastructure**. When analysing possible output indicators to cover the second condition to be achieved, the classification of all common indicators made under the comparative analysis suggested RCO39 - Environment: area covered by systems for monitoring air pollution. However, this indicator does not align with the proposed result. Given the different typologies of outputs that could have been produced under this type of investment action and the difficulty in identifying suitable output indicators for air quality in relation to green infrastructure, it was decided to exclude it.

- **Natura 2000,** for this case, only a specific output indicator was provided by the qualitative analysis (RCO37 – Env: Surface of Natura 2000 sites), which was deemed suitable to a limited extent (i.e., “Low”). Furthermore, it was not possible to identify a consistent result indicator to support the intervention logic.
- Under **SO 2.4**, the qualitative analysis identified indicators for three types of actions: **climate change prevention and management**, **flood and landslide**, and **non-climate, human-induced risk prevention and management**. It should be noted that the same combination of indicators (RCO25 and RCR35) was found to be used under all three investment actions except non-climate, human-induced risk prevention and management, for which only RCR35 was proposed. However, the proposed indicators were specific to flood-related risks. Even though these indicators could have been applicable to the other two investment actions, it was deemed more accurate to provide the IAM exclusively for flood and landslide prevention and management, as it specifically corresponds to the intervention logic described by the indicator.

As for PO1, also for PO2, for most investment actions, it was possible to develop both first-choice and second-choice options using high/medium suitability indicator IAMs. In particular, second-choice options using high/medium suitability indicators s were proposed for:

- Energy efficiency in enterprises,
- Energy efficiency in housing, and
- Energy efficiency in public infrastructure.

Regarding SO 2.2, the qualitative analysis allowed to identify different types of investment actions (i.e., **RE biomass, RE solar, RE wind, several renewable energy sources, and other renewable energy sources, including geothermal energy**). For all these types of investments, the common output indicator used by the sample of analysed programme were **RCO22 - Energy: renewable energy capacity**, while different options were considered for result indicators:

- **RCR29 - Climate: Estimated GHG Emissions**, used under all the investment actions identified under SO 2.2
- **RCR31 - Total Renewable Energy Produced**, used under RE solar and several renewable energy sources.
- **RCR32 - Energy: Renewable Energy Capacity,** used for other renewable energy sources (including geothermal energy) and several renewable energy sources.

However, a single solution covering all renewable energy sources was proposed using **RCR29**, as it was common to all interventions under SO2.2. Additionally, RCR29 is the indicator adopted in the Austrian FNLC scheme under the ERDF for energy efficiency and greenhouse gas emission reduction in large enterprises, SMEs, and local authorities, which was the first ERDF FNLC scheme adopted providing further evidence of its suitability for use in an FNLC scheme.

Table 11: The high/medium suitability indicators IAM PO2

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Energy efficiency in enterprises	2.1	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR26** - Energy: Annual primary energy consumption	**First-choice option**
Energy efficiency in enterprises	2.1	Signature of contracts/agreements	**RCO02** - Firms: Grant aided	**RCR29** - Climate: Estimated GHG emissions	**Second-choice option**
Energy efficiency in housing	2.1	Signature of contracts/agreements	**RCO18** - Energy: Dwellings with improved energy performance	**RCR26** - Energy: Annual primary energy consumption	**First-choice option**
Energy efficiency in housing	2.1	Signature of contracts/agreements	**RCO18** - Energy: Dwellings with improved energy performance	**RCR29** - Climate: Estimated GHG emissions	**Second-choice option**
Energy efficiency in public infrastructure	2.1	Signature of contracts/agreements	**RCO19** - Energy: Public buildings with improved energy performance	**RCR26** - Energy: Annual primary energy consumption	**First-choice option**
Energy efficiency in public infrastructure	2.1	Signature of contracts/agreements	**RCO19** - Energy: Public buildings with improved energy performance	**RCR29** - Climate: Estimated GHG emissions	**Second-choice option**
Renewable energy (solar, wind biomass, other)	2.2	Signature of contracts/agreements	**RCO22** - Renewable Energy Capacity	**RCR29** - Estimated GHG Emission	**First-choice option**

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Nature and biodiversity protection	2.7	Signature of contracts/agreements	**RCO36** - Env: Green infrastructure (not related to climate change)	**RCR95** - Env: Pop. with access to green infrastructure	**First-choice option**
Clean urban Transport	2.8	Signature of contracts/agreements	**RCO57** - Urban Trans: rolling stock for public transport	**RCR29** - Climate: Estimated GHG emissions	**First-choice option**

For **Floods and landslides**, **Water for human consumption** and **Waste management**, all the identified IAMs include one indicator which scored "low" in the overall suitability. In particular, RCO25, RCR41, and RCR47 refer to investments that are not frequently implemented but are long-lasting and, in many cases, they involve large-budget infrastructural works that are rarely undertaken under Cohesion Policy. These could have affected the scoring of the indicators.

Regarding **Clean Urban Transport**, the high/medium suitability IAM proposed using RCR29 (Climate: Estimated GHG emissions) as result indicator. However, an alternative IAM using RCR63 (Urban Transport: Annual users of tram and metro lines) was also considered, despite RCR63 scoring "low" in the suitability test. This second IAM remained relevant as it focused on improving metro services and increasing usage, whereas the first option (RCR29) targeted environmental benefits. This illustrates how different objectives can be pursued within the programme through the same type of intervention.

Table 12: The IAM including also low suitability indicators PO2

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Flood and landslide	2.4	Signature of contracts/agreements	**RCO25** - Climate: Flood protection newly built or consolidated	**RCR35** - Climate: Population benefiting from flood protection	**First-choice option**
Water for human consumption	2.5	Signature of contracts/agreements	**RCO30** - Water: Length of pipes for public water supply	**RCR41** - Water: Population with improved water supply	**First-choice option**

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Waste management	2.6	Signature of contracts/agreements	**RCO34** - Circular: Additional capacity for waste recycling	**RCR47** - Circular: Waste recycled	**First-choice option**
Natura 2000	2.7	Signature of contracts/agreements	**RCO37** - Env: Surface of Natura 2000 sites	**RCR95** - Env: Pop. with access to green infrastructure	**First-choice option**
Clean urban Transport	2.8	Signature of contracts/agreements	**RCO57** - Urban Trans: rolling stock for public transport	**RCR63** - Urban Trans: Annual users of tram and metro lines	**Second-choice option**

Although none of the 22 selected common output indicators were directly linked to high-efficiency or replacement heating systems in the qualitative analysis, the broader classification by investment action (made under the comparative analysis) indicated that RCO18 could be a suitable option. Unlike more specific indicators (such as RCO20 - Energy: District heating and cooling network lines; RCO19 - Energy: Public buildings with improved energy performance; RCO104 - Energy: Number of high-efficiency co-generation units), RCO18 is more generic, aligning with both the investment action and proposed result indicators. Its broader scope allows coverage of a wider range of operations, including those with varied outputs and beneficiary types.

Furthermore, while RCO18 was not found to be used under High-efficiency/replacement heating systems in the programmes analysed by the qualitative analysis, it was selected as part of the common indicators shortlist and passed the suitability test, making it suitable for use in a potential FNLC scheme.

Table 13: The exploratory indicators IAM PO2

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
High efficiency / replacement heating systems	2.1	Signature of contracts/agreements	**RCO18** - Energy: Dwellings with improved energy performance	**RCR26** - Annual primary energy consumption	**First-choice option**

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
High efficiency / replacement heating systems	2.1	Signature of contracts/agreements	**RCO18** - Energy: Dwellings with improved energy performance	**RCR29** - Estimated GHG Emission	**Second-choice option**

PO3 – A more connected Europe by enhancing mobility

For PO3, only one investment action was identified: **railway**. for this IAM, it was possible to identify two options with different output indicators, each describing a different type of railway investment:

- First-choice option: using RCO49, which refers to the reconstruction or modernisation of railway sections to improve performance.
- Second-choice option: using RCO47, which refers to the construction of new railway sections or the upgrade of existing ones.

RCO49 was suggested as the first choice because it received a higher suitability score, while RCO47 received an overall suitability score, due to its “low” frequency rating.

It should be noted that both options are part of the IAM including also low suitability indicators because RCR58. This indicator was penalised by the consistency score, as investment in rail infrastructure is only partially dependent on the number of users. As a result, there may be no clear link between the allocated budget and the established target. Key factors influencing the budget include the type of infrastructure, the nature of the work (i.e., new construction or renovation), and the location where the infrastructure is situated or needs to be built. Additionally, as with indicators RCO25, RCR41, and RCR47, this indicator monitors operation which involve large-budget infrastructural works that are rarely undertaken under Cohesion Policy, which affected the frequency score of the indicator.

Table 14: The IAM including also low suitability indicators PO3

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Railway	3.1	Signature of contracts/agreements	**RCO49** - Rail: Length of rail reconstructed or modernised - TEN-T	**RCR58** - Road: Annual users railways	**First-choice option**
Railway	3.1	Signature of contracts/agreements	**RCO47** - Rail: Length of new or upgraded rail - TEN-T	**RCR58** - Road: Annual users railways	**Second-choice option**

PO4 – A more social and inclusive Europe implementing the European Pillar of Social Rights

Regarding PO4, for the majority of investment actions, it was possible to develop a first-choice option using a high/medium suitability indicators IAM. For this PO, no second-choice options are proposed for any of the investment actions.

Table 15: The high/medium suitability indicators IAM PO4

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Infrastructure for primary and secondary education	4.2	Signature of contracts/agreements	**RCO67** - Education: Classroom capacity of education facilities	**RCR71** - Education: Annual users of education facilities	**First-choice option**
Infrastructure for tertiary education	4.2	Signature of contracts/agreements	**RCO67** - Education: Classroom capacity of education facilities	**RCR71** - Education: Annual users of education facilities	**First-choice option**
Infrastructure for vocational education	4.2	Signature of contracts/agreements	**RCO67** - Education: Classroom capacity of education facilities	**RCR71** - Education: Annual users of education facilities	**First-choice option**

However, for **Infrastructure for early childhood education** and **Health infrastructure and assets**, result indicators receiving a low suitability score were

used (RCR70 and RCR73). Regarding **RCR73**, its suitability was also penalised by the consistency score, likely due to the bias associated with 'users' or 'population' indicators. This issue was previously explained in relation to RCR58 - Road: Annual users of railways, which is used to monitor railway investments. In such cases, the budget allocated to the operation is often not correlated with service capacity in terms of users but rather with other factors (e.g., type of infrastructure built, reconstruction or modernisation work), which can lead to significant cost variations.

RCR70, on the other hand, was penalised due to its low frequency of use. Although not commonly adopted by programmes for monitoring interventions, it is the only one that specifically describes this type of investment action.

Table 16: The IAM including also low suitability indicators PO4

Investment Action	Related SO	Indicator 1 (Process indicator)	Indicator 2 (Common output indicator)	Indicator 3 (Common result indicator)	Option
Infrastructure for early childhood education	4.2	Signature of contracts/agreements	**RCO66** - Education: Classroom capacity of childcare facilities	**RCR70** - Education: Annual users of childcare facilities	**First-choice option**
Health Infrastructure and assets	4.5	Signature of contracts/agreements	**RCO69** - Health: Capacity of health care facilities	**RCR73** - Health: Annual users of health care facilities	**First-choice option**

PO5 – A Europe closer to citizens by fostering the sustainable and integrated development of all types of territories

No specific action types were identified for this PO. The study team did not propose any predefined specific type of operations based on intervention fields as the qualitative analysis suggests this is not feasible. Actions under PO5 often pursue multiple objectives going beyond tourism attractiveness. Moreover, the results sought under PO5 are typically tailored to local needs and strategies, making it difficult to categorise them into a single type of intervention action with a similar intervention logic. In addition, the nature of the results to be achieved is often intangible and cannot be easily captured by existing indicators. In other words, with the current intervention action framework and set of common indicators, it is not possible to develop a corresponding Investment Action Matrix (IAM) for this Policy Objective.

3.3. Implications for different stakeholders

The **stakeholder analysis** takes into account two macro categories of stakeholders based on their role in the programme lifecycle:

(a) Stakeholders Directly Involved in Implementation:

- Managing Authorities
- Beneficiaries
- Intermediate bodies
- National Coordination Authorities
- European Commission (EC)
- European Court of Auditors
- Auditing/Control Authorities

(b) Stakeholders Indirectly Affected by Results:

- Policymakers (National/Regional Governments)
- Social Stakeholders (Civil Society, Trade Unions, Advocacy Groups)
- Environmental Stakeholders (NGOs, Climate Advocacy Groups)
- Research & Innovation Sector (Universities, Think Tanks, R&D Institutions)
- Economic Stakeholders (Business Associations, Trade Organizations, Private Sector) – Rely on project outputs for economic benefits but do not manage implementation
- European Parliament (EP)

The analysis was carried out in two stages:

1. A desk-based review was conducted to identify the relevant stakeholders and to perform an initial assessment of the associated risks and workload. This preliminary assessment drew on relevant literature, including studies by the OECD. The analysis considered the following key factors:

- **Risk** was defined as the probability of failing to achieve the primary objectives of each actor. It was assumed that the interests of the various stakeholders are not fully aligned. For example, in a typical principal-agent relationship, the Managing Authority may face a higher degree of risk without receiving direct compensation from the European Commission, while beneficiaries may be reimbursed independently of final results. Conversely, the European Commission assumes the risk of funding a Managing Authority that may fail to deliver the intended outcomes of Cohesion Policy.
- **Workload** is defined as the administrative cost and/or burden associated with the set-up, design, data collection, analysis, and control activities related to the common indicator used to trigger payments. It is further assumed that the nature and intensity of this workload vary depending on the stakeholder involved.

The analysis was developed in two stages. First, a desk analysis was conducted to identify the stakeholders to be involved and to initially assess the associated risks and workload. This assessment was based on a review of specific literature (e.g., OECD). The analysis shows that risk and workload are distributed unevenly across different types of indicators and stakeholders. Process indicators carry the lowest risk and workload for Managing Authorities and Beneficiaries but pose the highest risk to the European Commission and European Parliament due to their limited impact on policy outcomes. In contrast, long-term result indicators impose the highest risk and workload on Managing Authorities and Beneficiaries, while minimizing risk for EU-level actors. This risk distribution highlights the strategic importance of using a combination of process, output, and result indicators to balance administrative efficiency with policy effectiveness. An interesting insight from the analysis is that, despite the variability in risk distribution, the overall risk is almost equally balanced across stakeholders. However, process indicators, while minimizing risk for operational actors, create the highest risk for strategic policymakers, emphasizing the need for result-oriented incentives to achieve public policy goals effectively. This underlines the importance of designing FNLC schemes that integrate a mix of indicators, ensuring alignment between operational efficiency and strategic impact.

The second part of the analysis focused on active **stakeholder engagement**. The results of the desk analysis were shared with the DG REGIO Transnational Network on Simplification (TN). A twofold exercise was carried out with the

2 participation of selected TN members. First, an online focus group was organised to present the preliminary findings of the study. Second, each member was invited to provide a more in-depth assessment of stakeholder roles and perspectives through a dedicated survey.

The inputs of the TN demonstrate that it is challenging to undertake a precise evaluation of workload and risks. This is due to the fact that it is contingent on the various perspectives and personal experience of the individual. However, the majority of the initial hypotheses were corroborated by the findings of the analysis. In the matrix below, where a discrepancy was identified between the desk analysis and the majority of stakeholders, the cell was designated with coloured circles, signalling also different assessment.

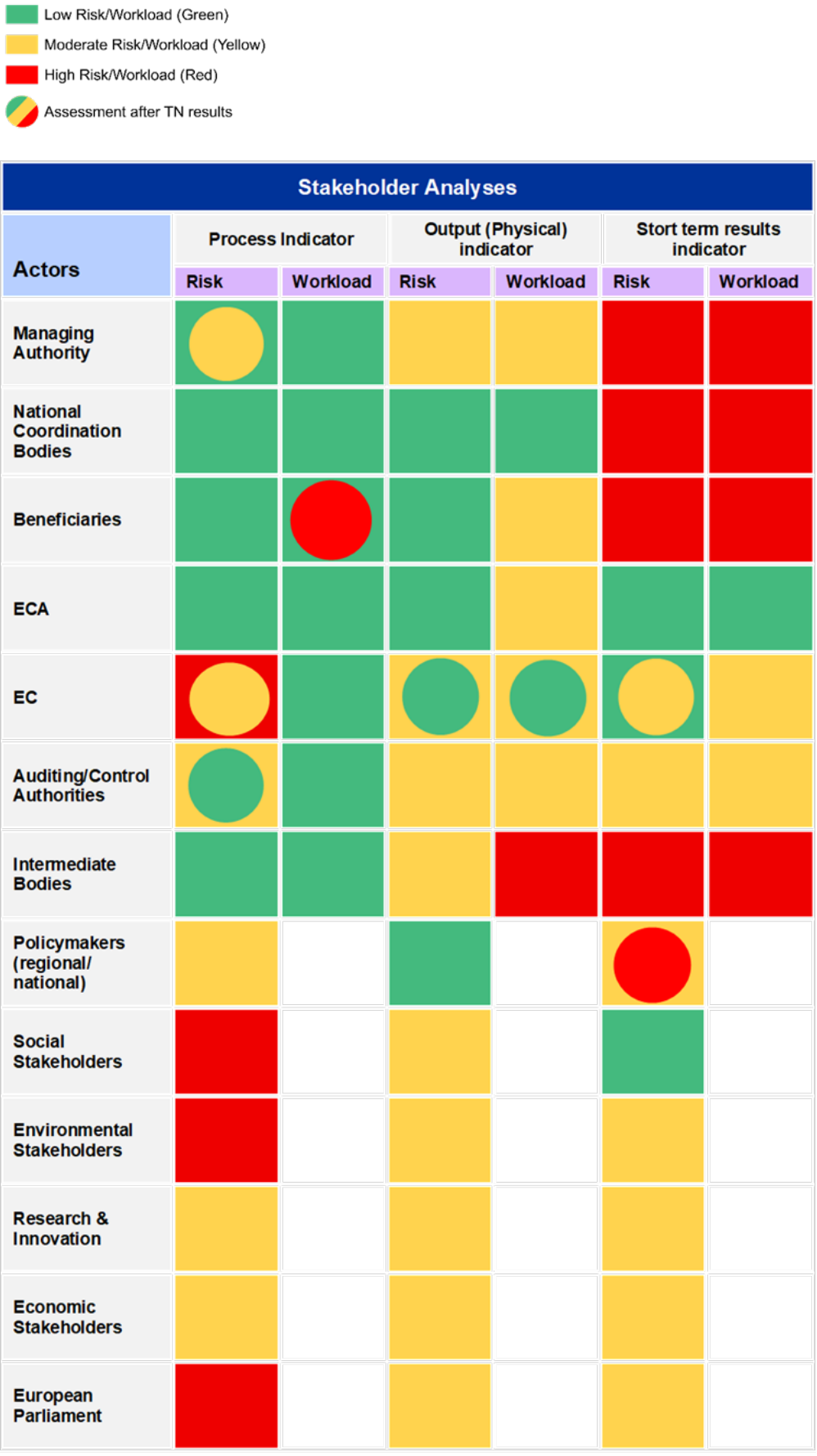
The most significant discrepancy between the study desk analysis and the stakeholder opinions pertains to the perceptions of workload and risk ascribed to the **Commission**. The stakeholders have not identified any significant variation in terms of risk or workload for the EC. However, the desk analysis has revealed an increase in both risk and workload as the process transitions from the output to the result indicators.

A further distinction worth considering relates to the **assessment of process indicators**. Stakeholders appear to attribute a higher risk to Managing Authorities in the context of desk-based analysis. This view may seem somewhat debatable, as it could stem from the perception that a payment system based on results (i.e., FNLC) inherently carries greater risks than one based on cost reimbursement independently by the concerned indicator. Additionally, the observed divergence in the assessment of beneficiaries—specifically regarding workload—warrants attention. It can be hypothesised that stakeholders interpret the burden not in terms of data production per se, but rather in the need to justify the achievement of process indicators. In other words, while producing the relevant data may not be overly demanding for beneficiaries, the duplication of effort required to validate these indicators may represent a significant burden.

Finally, it is important to consider the potential risks to **policymakers**. National policymakers have been found to be more exposed to risk than the results of desk analysis suggest. It is important to note that, in addition to technical considerations, political elements will also be taken into account by the European legislature when adopting a new scheme, which is likely to extend beyond the utilisation of common indicators.

The results of the analysis are displayed in the matrix below.

Figure 15: Stakeholder assessment scale

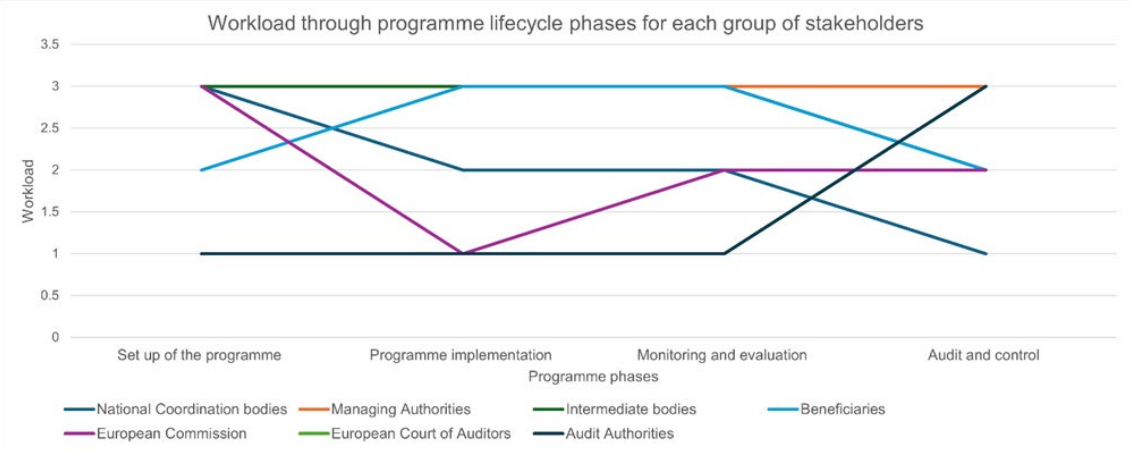


Insights into the **distribution of workload across the programme lifecycle** were obtained too. Participants were invited to assess the workload associated with each phase of the programme cycle, drawing on their practical experience and taking into account tasks related to the design and definition of data collection mechanisms and audit trails, as well as the collection, reporting, and verification of indicator-related information. The assessment focused on four key phases of the programme lifecycle, namely:

- Set up of the programme phase (i.e., negotiation and programme design);
- Programme implementation phase (project selection, programme modification, payments and reporting);
- Monitoring and evaluation phase;
- Audit and control phase.

The **perceived workload for each phase** was evaluated using a qualitative scale ranging from "low" to "high" too assessing the most burdensome phases of the programme lifecycle for each of the stakeholder groups.

Figure 16: Workload through programme lifecycle phases for each group of stakeholders



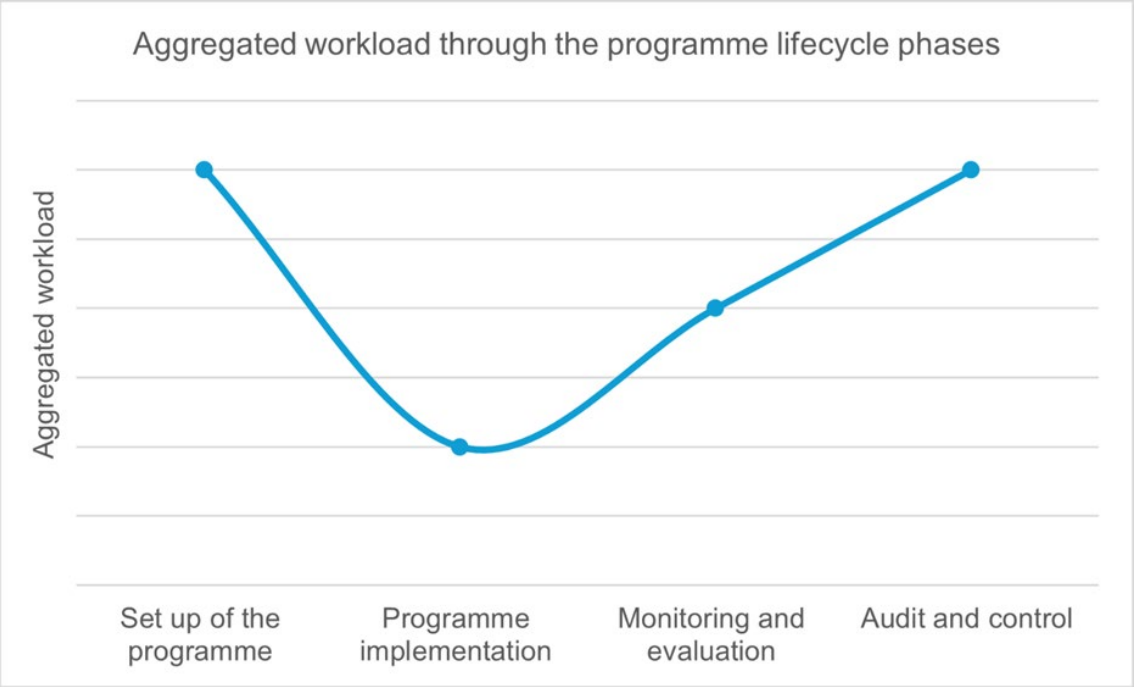
Source: own elaboration

The results indicate that Managing Authorities, Intermediate Bodies, and Beneficiaries experience a consistently high workload across all phases of the programme lifecycle, from the initial set-up to the final audit and control phase. In contrast, the European Court of Auditors and the Audit Authorities face limited workload during the initial phases, namely set-up, implementation, and monitoring and evaluation, while their workload increases in the audit and control phase. As regards the National Coordination Bodies and the European Commission, the set-up phase is associated with a notably high workload. However, a divergent pattern emerges in the subsequent phases: while the European Commission experiences an increase in workload during the monitoring and evaluation and audit and control phases, the workload for National

Coordination Bodies diminishes progressively, reaching lower levels by the audit and control stage.

An aggregated analysis of the results was undertaken to identify which phases of the programme lifecycle were perceived as more or less burdensome overall.

Figure 17: Aggregated workload through the programme lifecycle phases



Source: own elaboration

The results reveal that the set-up phase and the audit and control phase are perceived as the most burdensome. The monitoring and evaluation phase also entails a substantial workload, albeit to a slightly lesser extent. In contrast, the programme implementation phase was considered the least burdensome.

Finally, a valuable insight emerging from stakeholder involvement—particularly during the workshop discussion—is the general consensus that **FNLC schemes based on common indicators are perceived as less burdensome than the "real cost"** reimbursement system. However, the study team does not fully share this perception, for the reasons outlined in the conclusions (see section 4.2.1). The system has the potential to exhibit enhanced agility once it is fully operational, provided that certain conditions are met (see section 4.2.2).

4. Assessment on the use of common indicators

In this final section, building on the quantitative, qualitative, and comparative analyses (Section 2) and on the outcomes of testing the application of ERDF/CF common indicators to FNLC schemes (Section 3), the study presents the key findings on the use of these indicators for different purposes: both their traditional role in monitoring and evaluation, for which they were originally designed, and their more experimental application in FNLC schemes.

4.1. … in providing plausible data for monitoring and evaluation

This section first examines the strengths and weaknesses of the common indicators in providing plausible data for monitoring and then their possible use in evaluations of effectiveness, efficiency, relevance, coherence and EU added value.

4.1.1. Strengths and weaknesses of the common indicators in providing plausible data for monitoring (and evaluation)

The RACER (Relevant, Accepted, Credible, Easy, Robust) framework was developed specifically for assessing indicators in an EU policy context. More precisely, according to the European Commission Better regulation toolbox, indicators should be RACER (.[24]). Applying RACER to common indicators helps assess the core qualities required for effective performance measurement. All RACER dimensions are crucial for generating plausible data for monitoring. However, indicators can be RACER-compliant and still fail to capture meaningful changes in outcomes, for example, measuring the number of square meters of renovated buildings without assessing the resulting energy savings. RACER is a solid starting point and is particularly well-suited for assessing indicator quality in the monitoring phase of the policy cycle.

The in-depth analysis of methodological documents, along with consultations with programme authorities and national experts from the DG REGIO Evaluation Network, highlights that the ERDF and CF common output and result indicators - particularly those examined in detail through the qualitative analysis conducted in this study - are overall compliant with the RACER criteria, though with certain strengths and weaknesses.

- **Relevant** – Common indicators are closely linked to the outputs and results of interventions, cover key policy and specific objectives, and are

([24]) See Tool #43 ‘Monitoring arrangements and indicators’.

used much more extensively than in the previous programming period. However, their uptake varies across policy areas, being higher in PO1, 2, and 4, lower in PO3 and PO5. Moreover, within the context of an FNLC framework, the 2021-2027 monitoring system formally lacks process-type indicators, which could be very important to assess programme progress towards achieving objectives.

- **Accepted** - The high frequency and widespread use of many indicators suggest broad acceptance by Managing Authorities and other programme actors. Although the SWD allows programmes flexibility in defining the specific timing for measuring many result indicators, variations in these approaches may reflect limited acceptance or a perceived difficulty in tracking outcomes.
- **Credible** - The monitoring system provides credible information and enables aggregation and comparability across programmes and countries, thereby supporting evaluation activities. As confirmed by the analysis of methodological documents and consultation clarity of the indicator definitions has improved. However, programme flexibility in defining the timing for measuring result indicators can lead to interpretation challenges. For instance, in the case of RCR01 (jobs created in supported entities), it makes a significant difference whether jobs are measured at project completion or six to twelve months later. A lack of clarification on such timing can create difficulties in organising monitoring processes and in ensuring comparability of indicator values.
- **Easy to monitor** – The analysis of the methodological documents indicates that the SWD provided clear guidance and indicators are clear and easy to interpret. This, according to the consulted Evaluation Network national experts, contributed to reducing workload associated with indicator monitoring. Nonetheless, consultations conducted for this study indicate that the requirement of monitoring result indicators is the second reason for an increased workload after a more frequent transmission of data to the European Commission.
- **Robust** - Common indicators are quantitative and traceable. The SWD references are widely used and offer clear guidance to Member States, as confirmed by the consultations conducted for this study with programme authorities and national experts of the Evaluation Network. Although the SWD (2021)198 provides detailed metadata, robustness is not always guaranteed in practice -particularly when only explanatory notes are provided and no specific statistical or methodological references are indicated.

Yet, when it comes to evaluating policy impacts and ensuring that indicators provide plausible data for evaluation, RACER should be complemented by

additional criteria ([25]). In fact, plausible data for evaluation means that the data collected can be used to assess whether the policy interventions are making a difference — not only in terms of outputs, but also in terms of actual results, such as changes in behaviour, improvements in efficiency, organisations' (e.g., firms) performance or impacts on the target population. Therefore, the analysis of compliance with the RACER taxonomy has been **expanded to include** these additional criteria.

- The ERDF and CF common output and result indicators are **attributable**, as they provide quantitative information that can be clearly and explicitly linked to the interventions. However, in some cases - particularly for result indicators - it may be more challenging to establish direct and exclusive attribution to specific interventions due to the impact of external factors (e.g., contributions from other interventions, market and context conditions). In these cases, only an appropriate evaluation (e.g. using counterfactual methods) can isolate net effects.
- These common indicators provide data that are **easily available**, regularly reported, include a **baseline** (not required for output indicators) and a **target**, and follow detailed **metadata** specifications provided in the SWD, in accordance with the regulatory framework (notably Article 42 of Regulation (EU) 2021/1060 on the transmission of data).
- The ERDF and CF common indicators also comply with the **timeliness** criterion, as they capture outputs upon the finalisation of interventions and measure immediate effects through result indicators within a reasonable time frame - typically within one year after the completion of outputs or interventions.

Annex 1: Strengths and weaknesses of the common indicators in providing plausible data for monitoring (and evaluation) contains further details on this analysis.

4.1.2. Common indicators & evaluation criteria

For what concerns common indicators and evaluation, the Better Regulation Toolbox and the current regulatory framework of Cohesion Policy, as well as the SWD (2021)198 refer primarily to the criteria of effectiveness, efficiency, relevance, coherence and EU added value.

Relevance – The evaluation of relevance typically pertains the relationship between the needs and development challenges in society and the supported interventions. Common indicators in combination with the intervention fields allows mapping the logical chains from inputs, to outputs and results. However, common indicators do not measure the context evaluation and do not include any

([25]) This is also acknowledged in the 'Better regulation' toolbox 2023 (see Tool #43).

proxy variables about long-term outcomes expected (e.g. impact / policy outcome indicators). Moreover, it is also important to acknowledge that in the design phase programme authorities usually adopt specific context indicators and long-term indicators (e.g. SDG indicators) to define long-term impact of their regional / national / sector policy in which programmes operate. These are not formally agreed and commonly established at EU level but are necessary to define a complete intervention logic and undertake evaluations, in particular with regards relevance evaluation criterion, which pertains the relationship between the needs and problems in society and the objectives of the intervention. Relevance evaluation is not only important in the definition phase of programmes but also during their implementation and mid-term reviews in order to understand whether interventions align with current needs or development challenges. Therefore, while common indicators successfully cover the fundamental elements of an intervention / programme, other information is needed to undertake a complete relevance evaluation.

Coherence - The evaluation of coherence focuses on demarcation, complementarity, synergy, overlap or possible conflicts between interventions. Using similar and harmonised intervention fields between programmes and instruments (as RRF and Cohesion Policy do) can help show the different financial contribution. The system of common indicators can also support coherence evaluation. Adopting similar output and result indicators can help understand the combination of policy tools in terms of deliverables and effects on the society and thus support the coherence analysis. In this regard, since common indicators are defined according to international standards and follow harmonised rules across EU Member States, they can help compare and benchmark Cohesion Policy and other policy instruments in a given sector / territory.

Effectiveness & efficiency – The evaluation of effectiveness focuses on how successful (e.g. in terms of target achievement) programme / interventions are, while efficiency considers the relationship between the resources used and the deliverables and changes generated. Common indicators, in particular thanks to their integration within the performance framework defined according to Art. 17 CPR, provide critical information to programme authorities in terms of target achievement, unit costs and time of delivery of outputs and results. Therefore, they represent a plausible basis of effectiveness and efficiency evaluation. In this regard, common indicators thanks to Cohesion Data platform and existing rules of frequent reporting and transmission of data (art. 42 CPR) can support programme decisions and amendments, allows for international benchmarking and ensures both a EU-wide and a programme-specific coverage overtime. **EU added value** - The evaluation of the EU added value looks for changes that can reasonably be attributed to the EU intervention, over and above what could reasonably have been expected from national actions by the Member States. Indicators and common monitoring system help define evaluability strategy of interventions which are finalised to capture the EU added value. The full integration of the common indicators in a complete intervention logic (at least from

inputs to direct results) can support the application of evaluation methods, such as theory-based and counterfactual ones. If a theory-based approach is envisaged, it can build on the common indicators as a proxy of inputs, outputs and results, while requires additional information on the context situation before the intervention (e.g. context indicators from existing statistics), intervention delivery mechanisms (e.g. selection criteria rules from programme documents) and possible pre-conditions, enablers and risks from existing thematic literature, other evaluations and sources, including stakeholders' consultation. Likewise, in the case of a counterfactual evaluation, common indicators can help design an evaluation strategy or understand / assess its feasibility. For instance, if an intervention aims to generate employment effects, the use of the common result indicator RCR01 helps capture information on the increase of jobs in supported beneficiaries. This can represent a relevant reference of pre-post comparison of the supported group, which has to be compared with a similar control group in its job performance in the same period. Therefore, result indicators help elicit the key outcome variable on which a programme is expected to have an effect and a counterfactual model has to use to make a pre-post assessment of the net effectiveness of the intervention. Of course as in many other cases, information on the same variable captured by the result indicator from a comparable source is necessary for non-beneficiaries and cannot be retrieved in programme monitoring system but must come from other sources.

In conclusion, the ERDF/CF common indicators play an important role in providing plausible data for evaluation by supporting the assessment of effectiveness, efficiency, coherence, and EU added value, **though they need to be complemented by other data sources** for a comprehensive evaluation of these criteria, as well as relevance. While common indicators help map inputs, outputs, and results and allow for EU-wide benchmarking and target tracking, they do not capture context conditions or cover long-term outcomes, which are essential for evaluating the relevance of interventions to societal needs and the effectiveness of their impacts. They focus mainly on what is delivered, often missing how and why changes occur, and they require integration with external data sources to assess net effects or added value. Additionally, their generic nature can sometimes limit their ability to reflect sector-specific or territorially nuanced results, reducing their explanatory power in more detailed or qualitative evaluations. Still, when combined with additional data on context, delivery mechanisms, and non-beneficiaries, common indicators can provide a foundation for applying evaluation methods such as theory-based and counterfactual approaches. The harmonised design of common indicators across Programmes and Member States also facilitates coherence analysis, and their integration within performance frameworks offer critical data for assessing target achievement and delivery timelines.

4.2. … in an FNLC system

Based on the findings presented in Section 3, this section of the study aims to answer two key questions: What are the strengths and weaknesses of ERDF/CF common indicators when applied to FNLC schemes? And under what conditions can their use be optimised?

4.2.1. Strengths and weaknesses of using common indicators in an FNLC system

This section presents the approach used to draw conclusions on the feasibility of using common indicators and IAMs within an FNLC framework. These conclusions are based on a comprehensive analysis of strengths and weaknesses identified throughout the study analyses and assessments.

Table 17: Strengths and weaknesses of using common indicators and IAMs within an FNLC system

Strengths	Weaknesses
1. Reliability of the common indicator system 2. Methodological homogeneity and comparability among common indicators 3. Coverage and flexibility of the common indicator system	1. Heterogeneity in indicator use 2. Complexity of result indicators 3. FNLC reimbursement flow

Weaknesses identified. There are three main weaknesses concerning the use of common indicators in the FNLC framework: 1) Heterogeneity in use, 2) Complexity of result indicators and 3) Challenges in application at Upper and Lower Levels.

- **Heterogeneity in use** - Despite programme methodological documents adopting a coherent approach based on SWD definitions and methodological references, they show high heterogeneity in indicator use, usually providing limited / no information **on how programmes will collect information on result indicators** and not specifying when or how the indicators will be measured. This may represent a main weakness for adopting the common indicators for an FNLC approach but also shows the wealth and variety of programme intervention logic under a common and robust general framework.
- A second challenge is particularly related to **result indicators**. Compared to output indicators, result indicators are generally more complex to measure and verify. They require ex-post tracking and robust monitoring systems, which can be resource-intensive and administratively burdensome. This necessitates the consideration of specific requirements

and resource allocations at multiple levels (Commission, Programme). The use of "result" also presents enhanced risks of double-funding across the various programmes, as it is challenging to establish direct and exclusive attribution to specific interventions due to the impact of external factors, including contributions from other EU interventions. If a result can be attributed to multiple EU interventions, the Commission might be at risk of double-funding and of insufficiently protecting the financial interests of the Union.) ([26]).

- One of the challenges is related to using common indicators for **the entire FNLC Reimbursement Flow** (see Use of FNLC lower/ upper Level in the CPR) ([27]). More details:
    - Process-based Common Output Indicators**.** Some indicators do not specifically measure a final output but rather a step in the process for achieving it (e.g., within the set of indicators analysed in this study RCO02 'Firms: Grant aided', RCO05 'Firms: New Enterprises', RCO14 'Digital: Public institutions supported for Digital'). These are not directly suitable for reimbursement at the lower level ([28]). In particular, two main issued need to be considered:
        - Difficulty in identifying the output triggering payment: these indicators are not directly linked to a tangible output, making it unclear when they should be measured. At the upper level,

([26]) This was also confirmed by consultations with experts from the DG REGIO Evaluation Network, who highlighted that monitoring direct result indicators is a key driver of increased workload under the current performance framework compared to the previous programming period.

([27]) The ESF Transnational Network Recommendation Paper on Financing Not Linked to Costs (European Commission – DG EMPL G.1, 2022) highlights that, to fully benefit from the advantages of FNLC (e.g., enhanced focus on policy objectives and results, simplification of certain administrative procedures), it is recommended that FNLC be applied at both levels. However, the analysis revealed that certain types of indicators are not suitable for use at the lower level: process-based common output indicators; indicators that do not allow for intermediate deliverables at the lower level; coverage indicators measuring the population benefiting from the operation (e.g., RCR35 Population benefiting from flood protection RCO74 Population covered in integrated territorial development)

([28]) During the workshop with members of the DG REGIO Transnational Network on Simplification, it emerged that a potential solution to this issue is to link payments to the percentage of expenditure incurred, rather than solely to the number of outputs achieved. Furthermore, when using indicators that count the number of beneficiaries supported, and where support amounts vary and are not distributed linearly, there is a risk of creating perverse incentives. For example, favouring smaller grants could artificially inflate the reported percentage of supported SMEs (e.g. claiming 70% coverage), even if only 20% of the operation's budget has actually been used. To address this, one suggested solution is to reconsider the relevant output condition and instead base it on the percentage of the total amount spent

reimbursement can be based on grant disbursement to beneficiaries, but this does not work at the lower level.

- Misalignment of financial flows across the 2 different reimbursement levels: for FNLC schemes to work smoothly, the conditions and payment amounts linked to each condition must be the same at both the upper (European Commission -Programme) and lower (Programme - beneficiary) levels. If the same payment percentages are tied to different conditions at each level, inconsistencies happen ([29]).

- Indicators that do not allow for intermediate deliverables at the lower level. Certain indicators, particularly those measuring additional capacity created by a project, such as incubation, energy production, waste management, broadband access, and energy storage (e.g., RCO15, RCO22, RCO34, RCO66, RCO67, RCO69)—as well as process-based common output indicators (RCO02, RCO05, RCO14), are not suitable for defining intermediate deliverables as conditions for reimbursement under the FNLC scheme.

- Coverage indicators often relying on statistical data. It was observed that the monitoring of some indicators measuring the population covered by the funded operation sometimes relies on statistical data rather than project reporting. This implies that programmes may assess the achievement of these indicators only at an aggregate level rather than tracking them at the level of individual operations.

Many indicators are suitable for FNLC at the upper level but present challenges when applied at the lower level, leading to potential inconsistencies in financial flows and limiting the scope for administrative simplification.

Strengths Identified. The strengths identified in using common indicators within an FNLC framework are:

1. **Reliability.** The common indicators are widely used in programming and are well-known among Managing Authorities, ensuring ease of implementation and administrative familiarity. Specifically, the indicators

([29]) For example, when developing a scheme to cover the entire reimbursement flow, a managing authority decides to use RCO02 – Enterprises supported by grants as an indicator describing a condition triggering reimbursement, with 60% of the payment of the total amount allocated to the operation made once 50% of the target enterprises have been supported. At the upper level, this can work; however, at the lower level, for beneficiaries to count towards that 50%, they must have received 100% of their grants. This mismatch means the same indicator cannot be used effectively at both levels, causing confusion in payment timing and amounts.

used in IAMs are among the most frequently utilized, making them familiar to Managing Authorities both in their application and definition (see also below points).

2. **Methodological homogeneity and comparability.** These indicators exhibit a certain degree of methodological homogeneity in the way they are designed and understood, enhancing comparability and facilitating aggregation across Member States. In other words, their consistent use and well-defined methodologies enable reliable data collection and reporting. This also emerged from consultations with the DG REGIO Evaluation Network, where it was noted that the 2021-2027 extended list of common indicators provides uniformity, facilitating evaluation at different levels (i.e., sectoral, national, regional). It also supports Managing Authorities and beneficiaries in implementing and managing actions through a common methodological approach.

3. **Coverage and flexibility.** Admitted common indicators are relevant and cover a wide range of investment actions, ensuring comprehensive programme monitoring. Cross-checking conducted through ex-post evaluations confirms that these indicators effectively cover most of the identified clusters of operations and policy areas, demonstrating their adaptability and broad applicability. In the consultation with the DG REGIO Evaluation Network, most experts expressed a positive view of the extended list of common indicators for 2021–2027. Many noted that, although it does not guarantee full thematic scope, it provides a sufficiently broad framework and reduces the need to resort to programme-specific indicators. It should also be noted that common indicators can be applied at various programme levels, as they are suitable for different degrees of granularity—for instance, to support the reimbursement of an entire specific objective or a more narrowly defined intervention (i.e. operation). This flexibility is particularly relevant in light of ongoing discussions, addressed also during the workshop, regarding the most appropriate level at which to apply FNLC schemes, to ensure both flexibility and the coverage of a significant portion of programmes' budget.

Based on the above strengths, ERDF/CF common indicators can contribute to addressing the**concerns expressed by the European Court of Auditors (ECA) in relation to the RRF**. "milestones and targets" performance model. In particular, unlike the RRF model—where the ECA observed that milestones and targets were often based on inputs or outputs— the variety of ERDF/CF common output and result indicators allow for a more effective assessment of interventions' actual contribution to overarching policy goals.

4.2.2. Conditions for the effective use of common indicators in a future system of “Financing Not Linked to Costs”

Taking into account the weaknesses and strengths mentioned above, certain conditions can maximize the opportunities offered by using common indicators in a FNLC context while also addressing specific deficiencies. These conditions relate to:

1. Using common **indicators in combination.** Common indicators, when used in isolation, are often insufficient to provide comprehensive information or to effectively express the intervention logic. The proposed IAMs offer a structured approach to combining multiple indicators, thereby enhancing the coherence and reliability of the intervention logic. This ensures a more comprehensive performance measurement framework. IAMs are specifically designed to represent the entire lifecycle of an intervention, from inception to completion, thereby balancing the different risks associated with each stakeholder involved. This approach leverages the flexibility and broad coverage of common indicators while mitigating issues related to heterogeneity. A key feature of IAMs is their foundation on systematic integration of process, output, and result indicators. This integration provides a clear narrative from inputs to impacts, ensuring that the intervention logic is transparent and traceable. By using IAMs, it becomes possible to maximize the potential of common indicators while addressing the limitations that arise when they are used in isolation.

2. **Adjusting the common indicator design for FNLC compatibility.** The common indicator systems for the ERDF, CF, and JTF, as detailed in the Commission SWD (2021)198, were initially developed for programming and monitoring purposes, rather than for facilitating payments under FNLC schemes. While the SWD provides metadata on the characteristics and intended use of the indicators, it does not always fully align with the requirements of FNLC schemes. This misalignment presents several challenges, particularly concerning their application in financial flow. Specifically, the analysis identified the following limitations:

    (a) **Aggregation issues**. Indicators such as RCO02, RCO04, RCO05, RCR03, RCO14, and RCR17 present aggregation challenges due to existing methodological rules. According to the guidance ‘double counting is removed at the level of the specific objective,’ which means a beneficiary is counted only once, regardless of multiple supports received under the same specific objective. However, under FNLC, payments must reflect each instance of support. For example, under RCO02 (Enterprises supported with grants), each grant awarded to a beneficiary under the same specific objective should be counted separately to support payment. This discrepancy between aggregation rules and payment requirements necessitates adjustments in the

existing indicator framework for better alignment with FNLC mechanisms.

(b) **Timing of data collection**. The SWD does not always consistently specify when data should be collected for certain indicators, particularly result indicators. This requires Managing Authorities to determine the exact timing of indicator measurement within the timeframe indicated in the SWD. This needs to be considered in order to align payment timelines with performance achievements under FNLC schemes. For example, it is not always clear whether data should be collected within one year of completing an output, upon intervention completion, or at another stage. This issue is particularly relevant for indicators under SO 2.1, such as the output indicators RCO18 (Dwellings with improved energy performance), RCO19 (Public buildings with improved energy performance), and the result indicator RCR26 (Annual primary energy consumption), all of which measure achievements "upon completion of output and issuance of the energy performance certificate". However, it is worth noting that SWD metadata for RCR26 indicates that '*the baseline refers to the annual primary energy consumption before the intervention, and the achieved value refers to the annual primary energy consumption for the year after the intervention*'. This implies that if used together in an FNLC scheme, the output and result of a given operation can potentially be based on the same type documentation (i.e., the energy performance certificate). Therefore, when developing the conditions of the FNLC scheme, further clarification regarding the timing of achievement should be provided, without relying entirely on the indicator specifications. Overall, to enable a more streamlined use of common indicators in the post-2027 period, revisions to the indicator definitions and/or adjustments to the legal framework may be required to better align measurement timelines with payment processes ([30]).

(c) **Challenges with specific indicators combination**. In the IAMs, for skills development and R&I actions, combining RCO02 (Enterprises supported with grants) and RCR03 (SMEs introducing product or process innovation) was suggested.

([30]) During the workshop with members of the DG REGIO Transnational Network on Simplification, other critical points were raised concerning the timing of result indicator measurement specified in the (SWD 2021/198). A separate but related challenge discussed was the misalignment between the point in time when common result indicators become available and the payment calendar, which may hinder their use for disbursement. In particular, most common result indicators are defined as being measured one year after the operation's completion, often beyond the end of the eligibility period. As a result, the final payment may only be made once the operation has already been closed.

However, RCO02 covers all enterprises, while RCR03 is limited to SMEs, leading to potential inconsistencies in data aggregation and interpretation. To effectively use these indicators in FNLC schemes, it is necessary to ensure that the scope and definitions are harmonized, and adjustments are made to reflect the correct beneficiary categories. Therefore, for common indicators' FNLC application, it is recommended:

- The existing indicator framework should be adjusted to better align with FNLC payment mechanisms, particularly concerning aggregation rules and timing of measurement achieved.
- The timing of data collection and the issuance of supporting documentation should be explicitly defined, especially for energy efficiency and renewable energy indicators.
- When using multiple indicators in combination, clear guidelines should be established to prevent double funding/counting and to maintain consistency in financial flows.
- Consideration should be given to developing additional qualitative intermediate deliverables for indicators that do not allow for lower-level deliverables. These may include process or output indicators that capture partial progress towards meeting the condition in question, helping to bridge the gap between output completion and final result achievement, ensuring smoother financial flows in FNLC schemes.

3. **Considering monitoring of indicators as an additional (eligible) cost.** The monitoring of indicators under the ERDF/CF and JTF, especially result indicators, poses certain challenges. In the context of FNLC schemes, these challenges can impact payments and should therefore be carefully addressed. In particular, with the adoption of FNLC, monitoring activities will be intensified and extended to a broader range of staff within Managing Authorities and beneficiaries, who are not accustomed to carrying out these tasks, as they were traditionally confined to the realm of evaluation. One of the main difficulties for Managing Authorities in tracking the progress and achievement of indicators is obtaining responses from beneficiaries, as they may no longer be actively engaged with the programme or may not prioritise providing the requested information. In the case of FNLC, while the fact that payment is linked to the achievement of predefined conditions under FNLC schemes can encourage engagement, challenges may still arise. Beneficiaries may not have systems in place for effective monitoring, and the process requires dedicated resources and expertise, adding further

complexity. ([31]) Unlike output indicators, which can be measured immediately upon project completion, result indicators typically require tracking changes over time, making the process even more demanding. In some cases, specialised expertise may be necessary to ensure accurate data monitoring and reporting. These requirements place an additional burden on beneficiaries, who may not be accustomed to conducting post-implementation monitoring. In some cases, meeting these obligations may even necessitate further investments. For instance, tracking the achievement of 'RCR64 – Annual users of cycling infrastructure' would require installing user-counting devices once the infrastructure is completed or using existing ones. Given these constraints, considering the costs related to indicator monitoring as eligible expenditures within FNLC schemes could help ensure data quality, reduce the pressure on beneficiaries, and support effective data collection for programmes.

4. **Enhanced verification mechanisms**. Using common indicators for FNLC schemes requires refined monitoring, reporting and control processes. This necessitates robust verification methods on both sides—the Commission and Member States—and involves a significant shift not only in control techniques but also in the auditors' mindset. Verifying results is fundamentally different from auditing certified expenditures, particularly when the result indicators are formulated in a broad manner to capture multiple elements and are therefore open to interpretation. Such openness can lead to differing opinions between audit authorities.

5. **Setting up of suitable adjustment mechanisms**. Currently, Article 95 CPR, which regulates the use of FNLC, provides for methods to adjust amounts. However, this only applies to cost-related elements of the FNLC scheme. To make the use of indicators more effective, it is also important to allow for the adjustment of targets without requiring a full programme amendment. A formalised and efficient method for target adjustment is therefore needed, along with streamlined programme amendment procedures.

6. **Enhanced programming capacities**. The effective implementation of common indicators in the context of FNLC schemes calls for reinforced programming capacities across both Managing Authorities and the European Commission. This implies also the ability to clearly define roles and responsibilities throughout the entire project lifecycle, ensuring

([31]) This emerged also from the consultation with experts from the DG REGIO Evaluation Network, where 66% of respondents identified difficulties in collecting data from beneficiaries as one of the main challenges in implementing the novelties of the 2021–2027 monitoring system. Responses pointed to increased complexity, the need for measurement tools capable of capturing the relevant indicators, and the need to manage data collection methods appropriately. Experts also noted that project owners often require training or must outsource services to meet monitoring obligations.

transparency, accountability, and consistent interpretation of indicator-based requirements. Two core technical dimensions are involved:

(a) Objective verification of indicator performance: the factors influencing the performance of common indicators must be clearly identified and verified using objective criteria, to avoid double funding/counting. This includes both internal and, more importantly, external factors that can significantly influence indicator outcomes (i.e., this will ensure the design of a solid adjustment method).

(b) Enhanced programming capacity: identifying and verifying these influencing factors require advanced programming capacity, which may not be fully developed within all Programme Authorities. Similarly, the capacity to assess these factors within the European Commission's services may require additional investment in capacity building and guidance.

7. **Designing FNLC through common indicators as a collaborative and adaptive programming approach.** The design of FNLC through common indicators should be approached as a comprehensive programming exercise, where the Programme Authority carefully crafts the intervention logic with a clear focus on specific intervention types and policy objectives. This approach necessitates explicit articulation of the intended outcomes and anticipated challenges. This design process serves as a structured dialogue between the principal (European Commission) and the agent (Member States), fostering a transparent exchange of reciprocal objectives, strategies for achieving them, and the recognition of potential challenges or external factors that may impact target achievement. Rather than being perceived as a rigid contractual obligation or merely a means of administrative simplification, FNLC should be viewed as a flexible, incremental, and learning-oriented process aimed at achieving results. It encourages a dynamic partnership where both the Commission and Member States are actively engaged in pursuing shared Cohesion Policy goals. This perspective was also supported during the workshop, where participants emphasised that, when negotiating at programme level, it is not necessary to define a precise combination of indicators for each investment type. Instead, the programme should be considered as a whole, adopting a balanced configuration in which some elements are adequately captured by result indicators while others remain underpinned by output indicators. In this sense, the focus should not be on identifying a 'perfect' set of indicators for each FNLC scheme, but rather on the coherence and adaptability of the programme architecture as a whole.

Annex 1: Strengths and weaknesses of the common indicators in providing plausible data for monitoring (and evaluation)

The table on the next page presents strengths and weaknesses of the common indicators in providing plausible data for monitoring and evaluation, using the RACER framework and additional criteria suggested in the ‘Better regulation’ toolbox 43.

Table 18: Strengths and weaknesses of the common indicators in providing plausible data for monitoring (and evaluation)

RACER Criterion	Strengths	Weaknesses
Relevant i.e. closely linked to the objectives to be reached	• The substantial increase in the use of common indicators compared to previous periods reflects not only a greater number of indicators but also improved coverage. • Common indicators are closely aligned with the key policy and specific objectives, especially those with high financial allocations (e.g. RSO1.1 on R&I, RSO1.3 on SMEs, RSO2.1 on energy efficiency). • High-frequency indicators are generally well suited to track the deliverables and effects of interventions that are core to the EU's Cohesion Policy agenda. • Their applicability across different SOs allows monitoring of similar outputs/results in various contexts, enhancing policy comparability. • Some indicators (e.g., RCO19, RCR29, RCR32) capture important EU policy priorities (e.g., green transition and climate change mitigation).	• Certain indicators provide generic information, which becomes more meaningful and insightful when combined with the specific objective, the intervention field and other indicators. For example, the indicator RCO02 measures the number of enterprises supported with grants. Under RSO 1.1 and in combination with RCR03 and appropriate intervention fields, the use of RCO02 can become more specific. It can measure the number of enterprises supported with grants in R&I investments to introduce product or process innovations. • In some areas (e.g., in PO3 and PO5), indicator coverage is lower than in other policy objectives. • The monitoring system formally lacks process-type indicators, which may be critical preconditions for achieving objectives and are required in an FNLC framework. Moreover, although 2021-2027 result indicators match the immediate effects of the interventions, the 2021-2027 monitoring system - unlike that of the previous programming period - does not systematically include indicators capturing the intended broader outcome / impact on the wider economy/society.
Accepted (e.g. by MA staff, stakeholders). The role and responsibilities for the indicator need to be well defined.	• The high frequency and widespread use of many indicators suggest broad acceptance by Managing Authorities and other programme actors. • Flexibility in using indicators under multiple SOs increases buy-in from programme designers due to ease of application. • The use of common indicators is a regulatory requirement, which standardises practice and increases institutional acceptance.	• Although the SWD allows programmes flexibility in determining the specific timing for measuring many result indicators, differing approaches may reflect limited acceptance or a perceived difficulty in tracking outcomes.

RACER Criterion	Strengths	Weaknesses
Credible i.e. unambiguous and easy to interpret	• The system allows for aggregation and comparability across programmes and countries, enhancing credibility for policy evaluation. • Consultation with the programme authorities confirm the coherence assessment conducted in the qualitative analysis highlighting that clarity of the indicator definitions has improved. • The correlation analysis between target values and financial allocations supports their validity as credible performance measures.	• Some indicators show unexpected or weak correlations with funding (including negative correlations). This is often due to either very high or very low specificity of programme actions and varying approaches to establishing unit costs. However, such patterns may also raise concerns about the clarity or consistent interpretation. • Programme flexibility in determining the specific timing for measuring many result indicators can lead to interpretation challenges. For instance, in the case of RCR01 (jobs created in supported entities), it makes a difference whether the indicator refers to jobs at project completion or six to twelve months later: an ambiguity that may affect how the data are interpreted. The result indicator RCR32 measures the additional operational capacity installed for renewable energy. Its measurement takes place as soon as the production capacity is operational. A lack of clarification on such timing can create difficulties in in organising monitoring processes and in ensuring comparability of indicator values. • Consultation with Evaluation Network national experts indicate that, while the SWD definitions are clearer than in the past, additional details could have been useful. • Consultation with the Programme authorities shows that some indicators are expected to be measured more than 12 months after output completion, while they should be measured at the issuance of an energy performance certificate (e.g. RCR26), upon completion of related outputs (RCR35 – population benefiting from flood protection measures and RCR95 – population having access to new or improved green infrastructure), and no more than one year after (e.g. RCR64 – annual users of dedicated cycling infrastructure, RCR70 – annual users of new or modernised childcare facilities, and RCR73 – annual users of new or modernised healthcare facilities).

RACER Criterion	Strengths	Weaknesses
Easy to monitor i.e. with acceptable administrative burden	• Several indicators can be used in more than one specific objective. This makes them easy to apply across a wide range of projects. • According to the consulted Evaluation Network national experts, common indicators contributed to decreasing workload for indicator monitoring. • The existing regulatory framework and Information Technology systems support structured data collection, limiting additional administrative burden.	• More specific or less frequently used indicators may be costlier to monitor and require tailored data collection systems. • Indicators capturing results are less frequent and sometimes more difficult to monitor, as they require more complex data collection or longer timeframes. For instance, some indicators are perceived more challenging according to the consultation conducted for this study: RCR03 on enterprise innovation performance, RCR12 about improved digital services, RCR01 and RCR102 on job creation, but also some requiring population estimates on risk protection (RCR35) and energy sector and emissions (RCR26 and RCR29). • Consultation conducted for this study indicate that requirement of monitoring result indicators is the second reason for an increased workload after a more frequent communication of data to the European Commission through the SFC platform. Moreover, most of the programme authorities faced the difficulties in collecting data from beneficiaries, which remains a specific challenge for result indicators.
Robust against manipulation	• Common indicators are quantitative and traceable, particularly output indicators, which strengthens reproducibility and robustness. • Correlation with financial allocations is mostly positive and logical, particularly for well-used indicators, suggesting that the data are not easily manipulated. • Common use across programmes and countries ensures a standardised monitoring approach. • SWD references are widely used and provide clear guidance for the Member States as confirmed by the consultation conducted for this study with programme authorities and national experts of the Evaluation Network.	• Although the SWD 2021/198 provides detailed metadata, there is no guarantee that programmes will adopt a robust approach, particularly when only explanatory notes are provided and no specific references are available. As an example, in the case of RCR77, this indicator is challenging to apply to cultural and tourism sites that do not use ticketing systems.

Annex 2: Shortlist of the most relevant indicators

PO	Common output indicators	Common result indicators
1	RCO02 Enterprises supported with grants RCO05 New enterprises supported RCO06 Researchers working in supported research facilities RCO14 Public enterprises supported to digitise their products and services RCO41 additional households with broadband access of very high capacity RCO15 Firms: Capacity of incubation created	RCR01 Jobs created in supported entities RCR03 RTDI: SMEs introducing product or process innovation RCR102 RTDI: New researchers RCR11 Digital: Users of new and upgraded public digital services RCR17 Firms: New enterprises surviving in the market RCR18 Firms: SMEs using incubator services RCR53 Digital: Dwellings with broadband to very high-capacity network
2	RCO18 Energy: Dwellings with improved energy performance RCO19 Energy: Public buildings with improved energy performance RCO22 Energy: Renewable energy capacity RCO25 Climate: Flood protection newly built or consolidated RCO30 Water: Length of pipes for public water supply RCO34 Circular: Additional capacity for waste recycling RCO37 Env: Surface of Natura 2000 sites RCO58 Urban Trans: Dedicated cycling infrastructure supported RCO36 Env: Green infrastructure supported for other purposes than adaptation to climate change RCO57 Urban Trans: rolling stock for public transport	RCR26 Energy: Annual primary energy consumption RCR29 Climate: Estimated GHG emissions RCR32 Energy: Renewable energy capacity RCR41 Water: Population with improved water supply RCR63 Urban Trans: Annual users of tram and metro lines RCR64 Urban Trans: Annual users of cycling infrastructure RCR47 Waste recycled RCR95 Env: Pop. with access to green infrastructure RCR35 Population benefiting from flood protection
3	RCO47 Rail: Length of new or upgraded rail - TEN-T RCO49 Rail: Length of rail reconstructed or modernised - TEN-T	RCR58 Rail Annual users railways
4	RCO67 Education: Classroom capacity of education facilities RCO69 Health: Capacity of health care facilities RCO66 Education: Classroom capacity of childcare facilities	RCR71 Education: Annual users of education facilities RCR73 Health: Annual users of health care facilities RCR70 Education: Annual users of childcare facilities
5	RCO74 Population covered in integrated territorial development	RCR77 Visitors of cultural and tourism sites

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