

REGIO Evaluation Network Meeting
Policy Objective 2 Greener Europe – ERDF and CF common indicators
 7-8 March 2019, Brussels

Agenda

*** Thursday March 7, 2019 ***

Venue: ALBERT BORSCHETTE Conference Centre, rue Froissart 36, Brussels – CCAB – Room 2D

09.00 - 09.30: Registration* and coffee

1. MORNING SESSION

9:30-11:00 *Indicators Specific Objective 2.i “Promoting energy efficiency measures”*

11:00-11:15 COFFEE BREAK

11:15-12:30 *Indicators Specific Objective 2.ii “Promoting renewable energy”*

Indicators Specific Objective 2.iii “Developing smart energy systems, grids and storage at local level”

12:30-14:00 LUNCH BREAK

2. AFTERNOON SESSION

14:00-15:30 *Indicators Specific Objective 2.iv “Promoting climate change adaptation, risk prevention and disaster resilience”*

15:30-15:45 COFFEE BREAK

15:45-17:30 *Indicators Specific Objective 2.iv (continued)*

17:30-19:00 DRINKS

*** Friday March 8, 2019 ***

Venue: ALBERT BORSCHETTE Conference Centre, rue Froissart 36, Brussels – CCAB – Room 2D

09.00 - 09.30: Registration* and coffee

3. MORNING SESSION

9:30-11:00 *Indicators Specific Objective 2.v “Promoting sustainable water management”*

Indicators Specific Objective 2.vi “Promoting the transition to a circular economy”

11:00-11:15 COFFEE BREAK

11:15 - 12:30 ***Indicators Specific Objective 2.vii “Enhancing biodiversity, green infrastructure in the urban environment, and reducing pollution”***

+ AOB

* Registration of the persons who confirmed participation as indicated on the invitation letter.

Objectives of the meeting:

- Agree on the names of the indicators included in Annex I
- Discuss the definitions, measurement, and other metadata included in the indicator fiches – to be included in the guidance for the indicators. On these issues, there will be further opportunities for refinement when we discuss the guidance (after the adoption of the legislative texts).

Process:

- Each meeting is dedicated to one or two policy objectives.
- By specific objective, we will take each indicator at a time and discuss the comments received from you, and possible solutions (if needed).
- For PO2 – comments received for 48 indicators, from 18 Member States.
- All comments received from MS are shared with our working group on CIRCABC.
- For the meeting we grouped and synthesized the key issues from the comments received.
- Unit B2 will take on board the issues discussed during the meeting, and discuss them further with colleagues in the Commission. The objective is to send a revised list of common indicators latest in May, including all changes implied by the comments received through the consultations.

Content

- Based on ratings for the RACER criteria received from MS, for each of the indicator we calculated the share of respondents (MS) who assigned high and very high scores to each of the criteria.
- There are mainly three types of comments/ questions received from the MS: a) clarification questions; b) proposal for changes in indicator name or definition with the purpose of clarifying better the meaning of the indicator; and c) proposal for more fundamental changes – either to remove an indicator, or to add a new indicator. All these comments will be discussed during the meeting. The presentation used in the meeting summarizes these issues raised.

Agenda:

- At the request of some participants the discussion started with Specific Objective 2.ii for renewable energy, and continued with 2.i energy efficiency subsequently.

The Commission thanked and expressed appreciation for the comments received from the Member States during the consultations.

Legend:

Changes in indicator name (Annex I ERDF)

Changes in the fiche (definition, other fields)

SPECIFIC OBJECTIVE 2.ii Promoting renewable energy

OUTPUT INDICATORS SO2.ii

RCO22 Additional production capacity for renewable energy (of which: electricity, thermal)

RACER criteria: Relevant for 67%, Accepted by 78%, Credible for 61%, Easy for 67%, Robust for 72%

Issues raised:

- Remove "additional" from the indicator name
- Add "financed by the project" in the indicator name
- Breakdown on electricity and thermal – considered important. Therefore, should we not have separate indicators for the two types? Some MS, however, suggested the removal of this breakdown.
- Measurement unit: could we use kW in order to reduce scope of errors in calculation at project level? In addition, we should measure the production capacity in an equivalent measurement unit that would be applicable to all technologies.
- What is production capacity? Maximum installed power or peak power?
- Definition for renewable energy – does it include biomass?
- On the subcategories, it is difficult to distinguish the use of renewable energy for thermal and energy
- Does time of measurement refer to physical completion?
- What is the rule for double counting?

Additional issues raised:

- Please explain why is it useful to collect data on the breakdown of electricity and thermal?
- Does this indicator refer to the capacity connected to the grid, or to the capacity in general? For projects more related to R&D, the project may generate capacity connected to the grid at a later stage.
- Is it the case that, while large enterprises are not covered by indicator RCO97, they can be included in RCO22?
- Large enterprises should also be included

B2 replies:

- For this indicator we proposed the breakdown by electricity and thermal to be reported in implementation.
- As for the indicator criteria, we learnt that the indicator is relevant for 67% of the MS which provided scores for this indicator.
- As regards the name of the indicator, the word "additional" is necessary in order to signal that the indicator measures the additional capacity created and not total production capacity for renewable energy in supported projects. The baseline of the indicator is 0 since it is an output indicator.

- On "financed by the project" – in fact, all indicators proposed refer to project supported. As this is a principle rather than an issue specific to one indicator, we will explain this in the guidance. Therefore, it is not necessary to specify it in the name of all the indicators proposed.
- The breakdown in electricity and thermal was inspired by comments received from MS during the workshops on the current common indicators organised in June and September 2018. As the breakdown is considered important, the inclusion of two separate indicators would be useful, but it will also have the disadvantage of complicating the programming exercise. With two indicators, the MAs would need to provide targets for both early in the process, at the adoption of the programme. Therefore, our preference would be to maintain one indicator, and require reporting by the two types of energy only in implementation when projects selected are identified.
- As for the measurement unit, we understand that for smaller projects kW would be more appropriate. On the other hand, using kW at EU level would generate very large values, again with a high probability of error. Therefore, a solution could be for the MA to use kW at the project level, if considered necessary, and then report to the Commission in MW by simply converting the totals aggregated across projects. In addition, as regards the equivalent measurement unit, we think that MW could be used for all technologies, but if there is an alternative view on this issue we invite the Member States to address it when we open the floor.
- Production capacity is measured as maximum installed power.
- Following the comments received, we will include the definition of energy from renewable sources as specified in the revised directive for renewable energy from 2018/2001. This definition clarifies that renewable energy "means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas."
- On the use of renewable energy for thermal and electricity, we consulted with our colleagues in DG ENER and learnt that there are two possibilities: either we measure the production of energy by sources (grouped as electricity and thermal), or we consider the use of energy for electricity of thermal. In their view, measuring both would be useful. But, as we acknowledge that measuring the use of renewable energy by type is more difficult, we propose to change the definition such that the indicator measures the source of energy (electricity and thermal), as a more pragmatic solution.
- For the time of measurement, as explained last time we will propose to measure upon the physical completion of the output, whenever applicable.
- The double counting rule refers to multiple forms of support, in cases where the same project for additional capacity receives both grants and support from financial instruments. If an enterprise, however, received several grants over time for several projects adding to the production capacity, then this is not considered double counting since the grants do not address the same additional capacity.
- The breakdown by electricity and thermal is useful since the thermal energy is an EU priority, and therefore we need to measure it. Also from the perspective of evaluation, it would be useful to collect data by type of source, as it would help analyse the impact on the energy system.
- On capacity connected to the grid – the output is meant to measure only the capacity created (whether connected to the grid or not). It is in the corresponding result indicator RCR32 where we propose to measure the capacity created and connected to the grid.
- Large enterprises are not counted in RCO97 because this is the definition for the renewable energy communities in the legislative basis. They can, however, be included in RCO22. In

addition, there is also the possibility to use RCO01 for support to enterprises (and the associated indicators for forms of support).

RCO97 Number of energy communities and renewable energy communities supported

RACER criteria: Relevant for 4%, Accepted by 56%, Credible for 67%, Easy for 67%, Robust for 67%

Issues raised:

- Why do we include both energy communities (in general) and the communities for renewable energy?
- What is the definition of the renewable energy communities? Are large enterprises in these communities?
- How do we interpret the terms of the directive?
- Remove "number of" from the indicator name
- Include a more general indicator on "organisations supported"
- Double counting and time of measurement

B2 replies:

- This is a new indicator dedicated to the EU priority for support to energy communities. The focus of the indicator is, indeed, on renewable energy communities for which we have an established legal basis. Therefore, we agree with the comments received, and propose to clarify the scope of the indicator and include only the communities for renewable energy. This implies a change in the indicator name. The new name would be: "Number of renewable energy communities supported."
- We will include the definition of renewable energy communities, as specified in the revised directive for renewable energy, Art 2, paragraph 16. This definition clarifies that the renewable energy community is a legal person with shareholders or members as natural persons, SMEs or local authorities, including municipalities. Therefore, based on this definition, large enterprises are not included in these communities.
- On the interpretation of the directive, we recommend that Member States raise their specific questions with our geographical desks. Then, our colleagues will contact the legal service and the experts in the field and provide the required clarifications.
- We agree with the suggestion to remove "number of" from the indicator name. Therefore the new title would be "Renewable energy communities supported."
- On "organisations supported" in general, it is useful to recall that the indicators on SMEs support discussed for PO1 can be used in any other specific objective, and therefore also for renewable energy.
- On double counting and time of measurement – no additional, specific issues applicable to this indicator.

RESULT INDICATORS SO2.ii

RCR31 Total renewable energy production (of which: electricity, thermal)

RACER criteria: Relevant for 67%, Accepted by 78%, Credible for 61%, Easy for 67%, Robust for 72%

Issues raised:

- Some MS argued that the production of renewable energy production is difficult to measure; in addition, the production is likely to be influenced by external factors.
- What is the period of measurement? Would one year be sufficient?
- Additional or total production? It is easier to measure additional production rather than total production.
- Measurement unit – a wide diversity of preferences.
- Gross or net production?
- Rule for removing double counting.
- It will be difficult to calculate the baseline. For which period should the baseline be calculated?

Additional issues raised:

- For some types of renewable energy like wind one year may fluctuate significantly over the years. Therefore, in a year without much wind, the capacity installed will not show significant results. In this case, there will be a need to clarify why the results are not achieved. More generally, one year before and after the intervention could prove too short to collect reliable data on the level of production from renewable energy.
- In terms of projects reporting one year after completion – MS used the final payment as a mechanism to ensure that projects report after the project completion.
- One MS observed that if the indicator is based on estimated production, the information provided with this measure would be the same as the one elicited through the output indicator on capacity RCO22.
- Targets and baselines could be set based on averages over the year.
- As regards the period after project completion, a period longer than one year may be feasible since this type of projects tend to need shorter implementation periods.

B2 replies:

- As discussed also for the previous policy objective, we do acknowledge that, when compared with outputs, results are more difficult to measure. In our view, this indicator would enhance significantly the credibility of the policy because it will show that capacities are not just built but also used. If we are to take an extreme example, such an indicator would reassure us that wind turbines, for instance, are not built in places where there is hardly any wind.
- As with the output indicator, we propose to consider the breakdown (electricity and thermal) in terms of the source of energy rather than its destination.
- For the period of measurement, we propose one year. **Therefore, the measurement unit should be MWh/year.** We acknowledge, however, that a measurement in terms of a moving average across several years will be much better but, as discussed, we also need timely reporting of results of the policy. With a longer measurement period, especially for projects implemented toward the end of the programming period, there would be no time left to measure their results. Therefore, we maintain our proposal to measure one year after the physical completion of the corresponding production capacity, and explore further the evolution of the results over time through evaluation.
- As regards additional or total production, we proposed the indicator with a possibly non-zero baseline (in case of existing capacity which is extended and produces renewable energy), or a baseline zero for new capacity. When the capacity is expanded, the production is measured before (i.e. a non-zero baseline) and after. In fact, this is a more general issue (applicable also to other indicators). In our view, in order to be able to measure additional production (i.e. the change in production), one needs to know the level of production before and after the

intervention. Therefore, this data needs to be collected anyway. At the EU level, it is much more useful to have both the baseline and the final value since it would enable communication and analysis in percentage terms. It is much more relevant and informative to report the change relative to initial levels (ex: 20%) rather than the change in absolute terms (ex: 30MWh/year). Furthermore, at EU level it is not feasible to as for reporting in terms of % since we cannot aggregate this data. Therefore, the solution is to use an indicator with a baseline and final value, and calculate changes at the EU level on this basis. This logic applies to all indicators for which we propose non-zero baselines.

- For the measurement unit, we need one unit which is comparable (easily) across indicators. Therefore, we prefer to maintain MWh/year. At project level, the MA can consider any alternative measurement unit considered useful, and then convert the aggregate data when reporting at EU level.
- We propose gross production since it is easier to measure.
- The rule for double counting proposed is similar to the one discussed for the previous indicator, as it refers primarily to the forms of support. **Nevertheless, we need to reflect more on it.**
- As regards the calculation of the baseline, we propose to calculate it for one year prior to the start of the intervention. We assume also that the calls for proposals for projects will be based on analysis of the market gaps and opportunity of investments in additional capacity, and therefore the assumptions for the calculation of the baseline can be identified on this basis. Furthermore, there is also the possibility to update the baselines for result indicators based on project selections. Therefore, if the baselines identified at the adoption of the programme would be based mostly on assumptions, we expect that the updated baselines in implementation will be more precise as they will be based on concrete projects selected. This system is proposed in order to prevent frequent programme modifications for baselines.
- As for the additional comments of the variability of production from renewable energy across years, we should consider also the fact that the aggregate levels reported by the MA for the programme would cover a variety of investments in renewable energy, most probably from different sources. Therefore, it may prove highly unlikely that in a given year nothing works (wind, sun etc). This would certainly have the effect of compensating difference in production for a given year although, we agree, will not help solve the problem at the level of the project.
- **Following your comments, maybe it would be opportune to consider exceptionally the possibility of measuring the results over a period of two years both before and after the intervention.**
- We partly agree with the comment that an indicator based on estimated production would be an output rather than a result. This is why we propose the measurement of actual production.
- We agree with the comment that baselines and targets should be established based on average values over the year.

RCR32 Renewable energy: capacity connected to the grid (operational)

RACER criteria: Relevant for 61%, Accepted by 67%, Credible for 61%, Easy for 56%, Robust for 61%

Issues raised:

- Include self-consumption?
- How is capacity defined?
- Time of measurement: why one year after completion?

Additional issues raised:

- It is necessary to explain what is meant by self-consumption since enterprises need energy to produce energy.

B2 replies:

- We agree with the comment that the scope of the indicator is rather limited, as it does not include capacity created for self-consumption (and which does not need to be connected to the grid). We propose to include self-consumption in the definition. This implies a change in the name of the indicator. **The new name would be: "Additional operational capacity installed for energy from renewable sources."** The key word here is "operational" – **in the definition we will clarify that this capacity should be functional and producing or ready to produce energy.**
- For capacity, we will maintain the same definition for all similar indicators (maximum capacity installed).
- We agree with the comment on one year after completion since it is, indeed, possible that the additional capacity installed becomes functional and starts producing energy even earlier than one year. **We will replace it with "as soon as operational."**

New indicator proposed by Member States:

Enterprises which create new business activity based on renewable energy solutions and supporting low carbon economy

- Proposed as an output indicator.
- This indicator would be necessary in a scenario where the policy objective 2 is not included in the programme. In Policy Objective 1, for instance, RCO01 will not tell us whether the investments refer to RES solutions. A possible solution would be to use a subset indicator identifying these investments.
- It would be useful to have such an indicator under PO1 since we need to track investments in climate change.

B2 replies:

- In our view, this indicator is already present in the sense that when the common indicators for enterprises (ex: RCO01) are used in this specific objective, they would be interpreted as referring to activities based on renewable energy solutions. In terms of results, if the objective is not to generate production of renewable energy, then other common indicators can be used such as, for example, the indicators for innovations in SMEs.
- We would recommend the use of a programme specific indicator in such a situation, and indicator that would complement the use of RCO01 and other relevant common indicators. We are hesitant to introduce new subset indicators since this would generate a multiplication of the number of indicators in the list for common indicators.
- As in the current period, we make a distinction between climate tracking (based on the categorisation data) and the indicators for outputs and results used for the specific objective which addresses the issue of climate change.

SPECIFIC OBJECTIVE 2.i Energy efficiency

OUTPUT INDICATORS SO2.i

RCO18 Households supported to improve energy performance of their dwellings

RACER criteria: Relevant for 72%, Accepted by 67%, Credible for 67%, Easy for 61%, Robust for 61%

Issues raised:

- Shall we count households or dwellings? There could be dwellings where there is no household.
- For a multi-flat building, with the building itself be counted or the apartments?
- Is social housing included?
- Measurement unit could be square metres.
- Type of support: is non-financial support such as consulting included?
- There is a strong overlap with the result indicator RCR27 (households with improved energy performance of their dwelling)
- What is improved energy performance
- An indicator measured in households does not count common spaces in residential buildings

Additional issues raised:

- The advantage of using square metres is that the indicator could support also the calculations for greenhouse gas emissions.
- This indicator does not cover energy efficiency measures in enterprises

B2 replies:

- We agree with the comment that measuring dwellings is a better option for the output indicator. This implies a change in the indicator name (as "Dwellings supported to improve their energy performance") and in the measurement unit (from households to dwellings).
- It will also be necessary to define a dwelling in the definition of the indicator. We propose to include the ESTAT definition, according to which a dwelling is "permanent building or a structurally separated part of a building which (...) is designed for habitation of one private household all year round. "
- For a multi-flat building we count the apartments.
- If we change the indicator to measure dwellings, then social housing can be included. We will adapt the definition. Furthermore, we need to make sure there is no overlap with RCO19 for public buildings.
- On square metres, we are not convinced this is a better option in the case of housing. At least for communication, an indicator expressed in dwellings is much more easily understood by policy makers and the general public.
- For non-financial support, we assume that the comment refers to consulting for changes in behaviour as regards energy consumption. This aspect is not covered by the indicator. RCO18 refers to financial support provided for improving energy efficiency. Consulting activities could be measured with programme specific indicators.

- The difference between RCO18 and RCR27 is as follows: the output counts the households/ dwellings supported to improve energy performance (with the improvement itself not covered by the indicator), while the result measures how many of the households/ dwellings supported actually improved their energy performance. Based on the comments received from Member States, however, we understand that all projects supported must lead to improved energy performance (otherwise they would not be supported). We welcome this comment, and therefore agree with the possibility of merging RCR27 and RCO18 into one output indicator (still coded RCO18) for which the definition will clarify that dwellings are to be counted if they achieved an improvement in their energy performance. This implies that improved energy performance needs to be documented for the output indicator at some stage after project completion based on energy performance certificates (EPC).
- For "improved energy performance" we propose to define it in terms of improved energy performance by at least one energy class (as documented by EPC).
- For time of reporting – the change implies that the output needs to be measured as soon as the EPC becomes available. One MS, for instance, that on average it takes about 6 months to issue an EPC. The costs for EPC will be eligible, and therefore the additional expenditure will be covered by the support.
- On common spaces, indeed the indicator does not account explicitly for surfaces.
- As for the GHG emissions, the EPC will include all the information necessary for the calculation of GHG emissions. On the harmonisation of the GHG calculation, we will discuss it when we reach the indicator.
- For enterprises, the MAs should use RCO01 and the associated indicators for the form of support.

RCO19 Public buildings supported to improve energy performance

RACER criteria: Relevant for 72%, Accepted by 61%, Credible for 67%, Easy for 61%, Robust for 67%

Issues raised:

- Should the measurement unit be number of buildings or square metres?
- Overlap with the result indicator RCR28
- Is social housing included?
- Definition of improved energy performance
- Rule for double counting
- Definition of public buildings
- Do we include energy efficiency measures for installations used for public services such as waste water treatment plants?
- Time of measurement

Additional issues raised:

- If a building is owned by a private owner and is rented to a public organisation, would this be covered by the indicator?

B2 replies:

- We see the merit of the comment on the measurement unit since, indeed, public buildings can differ significantly in size, and therefore their number will not be very informative. We agree to **change the measurement unit to square metres.**
- On the overlap with RCR28, the same argument applies (only buildings which achieve improved energy performance are supported). **We agree with the argument, and propose to merge RCO19 and RCR28 into one output indicator,** with a similar definition in terms of improved energy performance achieved (documented based on energy performance certificates).
- We propose to include social housing in RCO18 and not in this indicator. **We will clarify it in the definition.**
- We will propose **the same definition for improved energy performance as for RCO18,** i.e. a change of at least one energy class.
- The rule of double counting refers to forms of support.
- For public buildings, we learnt in the meantime that DG REGIO has already provided a legal interpretation for public buildings (defined as buildings owned by public authorities, and also buildings owned by non-profit organisations, provided that such bodies have public bodies like objective meaning pursuing general interest objectives, such as education, health, environment and transport). **We will propose to include this definition also for this indicator (with examples such as hospitals, schools, prisons etc),** As regards private buildings, the definition refers to non profit NGOs, and does not refer to private owners in general.
- As regards the waste water treatment plants, we propose to include these measures to the extent they apply to the administrative buildings of the plant (not the treatment plant itself which is an industrial process).
- Time of measurement will be the time where the EPC becomes available.

RCO20 District heating network lines newly constructed or improved

RACER criteria: Relevant for 56%, Accepted by 61%, Credible for 50%, Easy for 56%, Robust for 61%

Issues raised:

- Add "length of district heating network" to the indicator name
- Name should include "heating and cooling"
- Public or private networks?
- Instead of measuring the network lines, we could measure the amount of energy transported.
- Measurement unit: buildings? Metres?
- How is "improved energy performance" to be interpreted?
- Does the indicator cover also situations where improved energy performance is achieved at the consumer/ producer level, but not by the district heating lines.
- The details of the definition of efficient district heating network may limit the scope of the indicator.

Additional issues raised:

- The measurement unit in terms of number of buildings rather than km is proposed because the number of buildings served can differ for the same network length across various districts. This would help us understand how many final beneficiaries are served by the intervention.

B2 replies:

- We prefer to keep the name of the indicator as short as possible. The fact that the indicator measures length is already indicated by "lines", and it is also clear from the measurement unit.

- We agree with the comment that the name should include heating and cooling in order to be consistent with the definition.
- On public or private networks – this is rather an issue of eligibility of operations, which is a matter of regulation. The indicator will cover all networks for district heating and cooling which are eligible.
- The amount of energy transported is an interesting indicator, but it is rather a result than an output.
- For the measurement unit we prefer to keep km since it is a more accurate measure of what we are financing. As regards metres, we propose the same solution as before: if necessary, the MA can use metres at project level, and then convert the aggregate data and report in km to us. At EU level, metres would generate very, very large numbers and increase the probability of errors.
- Improved energy performance refers to efficiency of district heating networks and it can be documented based on the technical specifications of the network lines which are being modernised or built. We will explained in the definition.
- The indicator is meant to measure improved energy performance of the network lines, and not the changes at consumer / producer level.
- We agree with the comment that there is no need to overspecify the definition of efficient district heating networks. The details provided were meant to be illustrative. We will clarify in the definition, while keeping the reference to the directive.
- On the comment for the number of buildings, we agree that it would be useful to learn how many end beneficiaries are served by the heating networks supported but, in our view, this would be more of a result or even impact indicator. The output refers to what we financing directly, which is the construction/ modernisation of network lines.

RESULT INDICATORS SO2.i

RCR26 Annual final energy consumption (of which: residential, private residential, private non-residential, public non-residential)

RACER criteria: Relevant for 44%, Accepted by 39%, Credible for 39%, Easy for 33%, Robust for 44%

Issues raised:

- Change from final to primary energy consumption
- What does the indicator cover? Dwellings, public buildings, enterprises?
- Why absolute level of consumption? Could we consider percentage change?
- Estimated or real consumption?
- Overlap with RCR24 for public buildings
- Subcategories need to be clarified
- Time of measurement
- Energy performance certificates may not be applicable for energy efficiency measures in enterprises
- Difficulties to collect data for social housing
- Include an * for this indicator in order to make it available for other policy objectives

Additional issues raised:

- As regards the scope of the indicator, what does it cover: administrative buildings, industrial processes or both? Currently, it seems to be referring only to buildings.
- As regards the change proposed for RCO01 for this specific objective, would an energy audit carried out before the start of implementation be enough to confirm the improved energy performance, or an energy audit would be needed also after implementation?

B2 replies:

- Our initial proposal for final energy consumption was inspired by the MS preferences expressed during the workshops on indicators in June and Sept 2018. Nevertheless, we can agree to change it to primary energy consumption, if this makes the indicator easier to measure. In addition, a compelling argument to use primary energy consumption is the link to the directive for energy efficiency. **This implies a change in the name of the indicator to include primary instead of final energy consumption.**
- Following the comments received, and the adjustment proposed, we see this result to be used whenever relevant for all projects for energy efficiency, therefore covering dwellings, public buildings, enterprises etc. It would be the main result indicator for energy efficiency, together with the indicator for GHG.
- On absolute vs relative measure, we already explained the logic of result indicators with baselines and targets and the difficulty to aggregate reporting in percentages at EU level. We need MS to report both the baseline and the target for this indicator such that we can calculate robustly the percentage changes directly at the EU level.
- We agree with the comment that real consumption can vary significantly over time, as it is also influenced by behavioural factors. **We agree with the proposal to base this indicator on estimated levels of consumption calculated based on the energy performance certificates (EPC).** Therefore, the EPCs will be used both for the output and for the result indicators.
- The overlap with RCR24 for public buildings no longer applies if we agree to merge RCR24 with its corresponding output indicator (as discussed above).
- On the breakdown proposed, given the changes implied for the output indicators, it will be necessary to include a corresponding breakdown. **We propose to include three categories corresponding to the output indicators: dwellings, businesses, and public buildings.** This assumes that MS will use the common output indicator RCO01 and the associated indicators of forms of support for enterprises to measure outputs for support to enterprises for energy efficiency.
- As for time of measurement, this would be as soon as the EPC becomes available.
- For enterprises, if EPCs are not applicable, **the energy performance can be measured based on energy audits or the technical specifications of the works.**
- We assume that the comment on difficulties to measure this indicator in the case of social housing is applicable more in the case of real consumption. As we propose to measure the estimated consumption, this is no longer an issue.
- As regards the use of the indicator in other policy objective, we would like to recall that the Policy Objective 5 can use any of the common indicators proposed. We would like to learn more for which other policy objectives would this indicator be considered relevant by the MS.
- In order to document the improvement in energy performance after implementation there will be a need to have some basis to do so. In some cases, depending on the investments, energy audits may be not be necessary and the estimation could be based on the technical specifications of the works completed.

RCR27 – Households with improved energy performance of their dwellings

- Proposed to be removed from the list of result indicators as it is merged with the output indicator RCO18.

RCR28 – Buildings with improved energy classification (of which: residential, private non-residential, public non-residential)

- Proposed to be removed from the list of result indicators as it is merged with the output indicator RCO19.

RCR29 Estimated greenhouse gas emissions

RACER criteria: Relevant for 83%, Accepted by 61%, Credible for 56%, Easy for 39%, Robust for 44%

Issues raised:

- Absolute levels of GHG emissions before and after, or percentage or absolute change?
- Measured or estimated GHG emissions?
- Measurement unit: tons or kg?
- Need for harmonised methodologies
- Time of measurement
- Aggregate databases could be used at programme level
- Member States offered to share the experience cumulated with methodologies for GHG emissions used in the current period.

Additional issues raised:

- MS strongly recommend common methodologies for this indicator. In the current period, beneficiaries have a lot of problems with the estimations for this indicator. Furthermore, even the methodologies cannot be presented in the fiche, the fiche should mention that there are common methodologies recommended for the calculation of the indicator.
- Clarify in fiches whether measurement or estimates are being considered

B2 replies:

- The ultimate objective is to be able to communicate and analyse the percentage change in GHG emissions from supported projects at EU level. As explained, from the methodological perspective, we cannot use directly such an indicator due to issues of aggregation. Therefore, we propose reporting of baseline and target in absolute level such that we have the possibility to aggregate the data and calculate percentage changes at EU level.
- As indicated in the indicator name, we propose to measure estimated GHG emissions primarily based on the energy performance certificates, energy audits.
- At the EU level, we need a measurement unit in tonnes, but the MA do have the option to use kg at project level.
- The issue of harmonised methodologies for the calculation of this indicator, especially because it can be used for investments in different sectors (energy efficiency, transport etc). As agreed during the workshops organised in 2018, we will dedicate a meeting/ workshop to discussing together options for robust methodologies that we can recommend for this indicator. This

recommendation will not be in the form of a guidance but we'll make it available for the MAs. We will try to organise such a workshop in the second part of this year, if possible.

- For time of measurement, the issue is similar as with previous indicators – the time when the technical documentation used for the calculation becomes available.
- On the data sources, we are not convinced that aggregate databases at national level could be used to measure the GHG emissions for the interventions supported. They would be more suitable to estimate GHG emissions at regional or country level.
- We will try to establish in the fiche the principles of what we are trying to measure, but we are aware that there are different methodologies used at regional, national levels. Therefore, we are not planning to propose one methodology, but rather identify and promote good practices that can be shared with the MAs.
- We appreciate the offer to share the methodologies for GHG emissions, and will certainly remember it when we organise the dedicated workshop.
- We will align the terminology in the fiches such that it is clear whenever estimates are being considered instead of direct measurements.

RCR30 Enterprises with improved energy performance

RACER criteria: Relevant for 78%, Accepted by 72%, Credible for 78%, Easy for 44%, Robust for 67%

B2 replies:

- We assume that the same logic will apply to energy efficiency measures for enterprises as for public buildings and dwellings, meaning that the enterprises would not be supported unless they can demonstrate the improvement in energy performance. Therefore, assuming that RCO01 will be used as a corresponding output indicator, we will specify in its definition that the achieved values should be recorded conditional upon proof of improved energy performance in the enterprise as documented by technical specifications, energy audits etc. Therefore, we propose to merge the indicator RCR30 with the corresponding output RCO01 with a tailored definition for this specific objective.

New indicators proposed by Member States

Indicators proposed:

- Enterprises which develop and introduce new solutions or new technologies which support low carbon economy or energy or material efficiency
- Enterprises which develop a new product to market promoting low carbon economy
- Experiments and pilots which enhance low carbon actions in enterprises
- Number of organisations receiving support for capacity building
- Number of organisations/ enterprises introducing new or improved products, services, processes and applications
- Number of individuals covered by actions to change consumption behaviour
- Number of high efficiency co-generation units

B2 replies:

- The first three indicators proposed refer to innovation. In our opinion, the indicators proposed already for Policy Objective 1 could be used to measure innovative actions for energy efficiency in this specific objective,.

- The indicator for capacity building is an indicator for technical assistance. We propose to discuss it in the meeting on horizontal issues scheduled for May.
- Similarly, for enterprises introducing new or improved products, services etc, we already have the common indicators RCR03 and RCR04 proposed. **Therefore, a clear option is to provide the possibility to use these result indicators from Policy Objective 1 also in other policy objectives.** For other organisations (i.e. not enterprises), we recommend the use of programme specific indicators.
- As for the indicator on actions targeting consumers' behaviour, it is a very interesting indicator. We considered including indicators for awareness actions for behavioural changes but eventually decided not to do so for two main reasons. First, for an awareness campaign on national television, for instance, the number of individuals could be the country population regardless of the campaign intensity. Second, for measuring the result, it would be necessary to carry out a survey of the target population in order to understand the behavioural effects of the campaign. We believe that this is beyond the capacity of the MA. Therefore, also in this case we recommend the use of a programme specific indicator if necessary.
- **The output indicator on co-generation units is interesting (included in the directive). It is an output indicator related to the category of intervention 34 in the CPR. We will reflect on it and consult our colleagues on this proposal.**

SPECIFIC OBJECTIVE 2.iii Smart energy systems

OUTPUT INDICATORS SO2.iii

RCO23 Digital management systems for smart grids

RACER criteria: Relevant for 61%, Accepted by 61%, Credible for 50%, Easy for 56%, Robust for 50%

Issues raised:

- What is a smart grid? And what is a digital management system for smart grids.
- Projects may support also upgrades of existing systems not just new systems.
- What is the minimum level of digitalisation?
- Define "low losses" and "high quality"
- Rule for removal of double counting
- Which indicators do we use for a project that combines renovation of buildings for energy efficiency with investments in smart energy systems at local level, ICT applications, storage solutions etc.

Additional issues raised:

- Proposal to change "smart grids" to "smart electricity systems" or networks.

B2 replies:

- We have already provided a definition for smart grids in the fiche, and included also a JRC study on the topic. We recommend reading this study since it would help clarify the concepts used for this indicator.

- The main feature of a smart grid refers to digital and other advanced ICT technologies to sense, monitor, communicate and manage energy flows. This is the reason why we proposed this indicator. We assume you will invest either in building such systems, or in improving existing ones.
- On upgrades of existing systems, we propose to count the upgrades if they imply a new functionality (as applied for previous indicators).
- In our view, the minimum level of digitalisation does not apply in a context where we expect advanced ICT technologies, but what is relevant is to understand when an energy grid can be considered a smart grid. By definition, smart grids are fully digitalised in order to achieve their objective.
- We would not include specific thresholds for "low losses" and "high quality" because these issues are better tackled by the experts in the field who are more informed about the international standards in the sector.
- For removal of double counting we propose the same solution as for previous indicators, i.e. remove double counting in cases of multiple forms of support.
- In case of complex projects combining several types of investments we recommend the use of the indicators which are most representative for the primary objective of the project, where primary could be defined according to specific criteria such as the amount of financing dedicated to that objective.

RCO98 Households supported to use smart energy grids

RACER criteria: Relevant for 50%, Accepted by 56%, Credible for 44%, Easy for 44%, Robust for 44%

Issues raised:

- There will be no direct financial support provided to households. Therefore the indicator is not relevant for ERDF.

Additional issues raised:

- A MS welcomes the proposal for the introduction of an indicator for storage, and suggests the use of MW as measurement unit.

B2 replies:

- We agree with the comment and propose to remove this indicator. Instead we propose to replace it with a new indicator for "Solutions for electricity storage" measured in terms of storage capacity, with the measurement unit MWh. This indicator would reflect the corresponding EU priority and cover, for example, solutions such as batteries.

RESULT INDICATORS SO2.iii

RCR33 Users connected to smart grids

RACER criteria: Relevant for 44%, Accepted by 50%, Credible for 50%, Easy for 33%, Robust for 50%

Issues raised:

- Use smart distribution systems instead of smart grids.
- Define the users. Include end users?

- What is the meaning of a non-zero baseline for this indicator?
- Overlap with the output indicator for households
- It may take time to deploy solutions for smart grids

Additional issues raised:

- It is challenging to collect data on end users connected to the electricity grids

B2 replies:

- We agree with the comment on terminology, and we will use "smart electricity distribution grids".
- As for users, we mentioned already households, enterprises. In general, it refers to all users which have a contractual agreement with the energy provider. We agree to include "end users" in the measurement unit and definition.
- A non-zero baseline would apply in situations where an existing smart grid is extended to additional users.¹ A zero baseline would apply to a situation where all users are new (either a new grid is built, or an existing grid is transformed into a smart grid).
- The overlap mentioned is no longer an issue since we propose to remove the indicator on households (and replace it by the indicator on storage capacity).
- Time of measurement – we propose within one year after project completion.

RCR34 Roll-out of projects for smart grids

RACER criteria: Relevant for 33%, Accepted by 33%, Credible for 33%, Easy for 44%, Robust for 33%

Issues raised:

- This can be an output indicator because it refer to the number of projects
- The indicator would be more relevant in situations where the objective is not to increase the number of users.

B2 replies:

- We propose to keep it as a result based on the assumption that it may take time to deploy the solutions supported. We will clarify this in the definition.
- We agree with the comment that the indicator could be used in situations where the number of users does not increase.

New indicators proposed by Member States

Indicators proposed:

- Number of organisations supported to develop, upgrade or improve systems
- Number of systems developed or upgraded
- Smart gas transmission or distribution pipelines newly constructed or upgraded
- New active capacity in the underground storage of natural gas (smart infrastructure)
- Smart electricity transmission or distribution pipelines newly constructed or upgraded
- Power stations with smart functionalities newly constructed or upgraded

¹ The indicator could be used also when there is no change in the number of users in the sense of users benefiting from the service of an upgraded smart grid.

B2 replies:

- On the first indicator, we can use the number of enterprises supported. For other organisations, programme specific indicators can be considered.
- For the second indicator, we do not see a significant difference between this indicator and RCO23 proposed since both refer to systems developed or upgraded. For smart grids, all systems are expected to be digital.
- On the indicators which refer to gas, the priority of the Commission is not to support fossil fuels. We are aware that the Council proposed the inclusion of this type of investments if it helps replace coal. In addition, the proposal entails a 1% cap for investments in this field. On this basis, we propose not include such indicators because the share in total financing will not be high. Our objective is not to cover 100% of the policy, and there are other fields of investments which could represent even more than 1% of the total financing and we are not measuring. We recommend the use of programme specific indicators for these investments.
- For smart electricity transmission and distribution pipelines and power stations – this is rather an issue of eligibility of specific investments, which is best tackled with programme specific indicators for eligible investments. We would prefer to keep the focus on digital systems and advanced ICT technologies for electricity distribution systems and the storage capacity.

SPECIFIC OBJECTIVE 2.iv Climate change adaptation, risk prevention and disaster resilience

OUTPUT INDICATORS SO2.iv

RCO24 New or upgraded disaster monitoring, preparedness, warning and response systems

RACER criteria: Relevant for 50%, Accepted by 67%, Credible for 67%, Easy for 67%, Robust for 67%

Issues raised:

- Can the indicator cover also pollution?
- Discrepancy between the name of the indicator (number of systems) and the measurement unit (euro)
- Why a monetary indicator? Can we not use “surface covered” or “area protected” or “number of systems”
- Overlap with other indicators for this specific objective (ex: measures for forest fire protection RCO28).
- Why do we need a monetary indicator if we have the categories of intervention?
- Do we need an * for this indicator?

Additional issues raised:

- The definition refers to both public and private investments. Why are private investments included?
- It is not clear why some indicators focus on specific disaster risks, while others aggregate several types of risks.

- Does protection include also prevention?
- It is not clear why this RCO24 and RCO25 are proposed in monetary units, while RCO25 is expressed in a physical monetary unit.
- The data for indicators expressed in monetary units can be extracted from the monitoring systems. Therefore, the link between the indicator and the policy is not clear.

B2 replies:

- The indicator is dedicated to disaster monitoring, preparedness, warning and response systems, and therefore does not cover pollution.
- On the discrepancy between name and measurement unit, we agree with the comment and propose to change the name into “Investments in etc.”
- As for the alternatives proposed, we discussed with colleagues on various options and understood that this type of projects could cover a diversity of interventions (ex: acquisition of helicopters, drones, telecommunication systems, management plans, monitoring tools, awareness campaigns etc). Therefore, it is difficult to find a physical indicator which is representative for these interventions. This is why we proposed an indicator in an equivalent measurement unit for all, which is euro.
- On the overlap, we propose the following: use RCO24 for interventions at national level in national systems (and possibly regional) for measures which are not disaster specific. The disaster specific measures would use the corresponding indicators.
- The categories of intervention are designed by type of disaster. They do not offer the possibility to distinguish total investments in national civil protection. Therefore, the indicator RCO24 will complement the information provided by categories of intervention.
- No, we do not really need an * for this indicator since it is not necessary in other policy objectives. We will remove it.
- We agree with the comment that it is not necessary to include private investments in the scope of this indicator. We will remove it from the definition.
- Yes, protection is meant to cover also prevention.

RCO25 Coastal strips, river banks and lakeshores, landslide protection newly built or consolidated to protect people, assets and the natural environment

RACER criteria: Relevant for 50%, Accepted by 61%, Credible for 72%, Easy for 61%, Robust for 56%

Issues raised:

- Why is the measurement unit monetary?
- The name is too long
- Overlap with RCO24
- Include investments in planning and studies
- Promoting bank protection can have adverse effects on habitats

Additional issues raised:

- One MS state notes that it would be useful to maintain a measurement for landslides since this is an important issue.
- For this indicator, the measurement unit of hectares would be a better option because it represents the volume of the projects.

B2 replies:

- We included a monetary measurement unit since the indicator covers both coastal strips, river banks and lakeshores which can be measured in km, and landslide protection which is usually measured in hectares. Therefore, in physical terms we cannot add them up and need an equivalent measurement unit. Nevertheless we agree with the comment, **and could consider limiting the scope of the indicator only to coastal strips, river banks and lakeshores such that we have a physical output measured in km.**
- We agree with the comment that the name is too long. **We propose to remove “to protect people, assets and the natural environment”** since it will be explained in the definition.
- As for the overlap, we proposed to keep RCO24 for general national and regional measures, and use RCO25 for flood specific measures.
- Investments in planning and studies are not covered by this indicator because it refers to protection measures.
- As for habitats, this may be true, but the purpose of the indicator is not to promote bank protection but rather measure sizeable investments in such projects in cohesion policy.

RCO26 Green infrastructure built for adaptation to climate change

RACER criteria: Relevant for 72%, Accepted by 67%, Credible for 61%, Easy for 56%, Robust for 67%

Issues raised:

- Extend to “area of green infrastructure etc”
- Include significantly upgraded in the name
- Can infrastructure be added to the name (i.e. infrastructure and green infrastructure)?
- Is afforestation included in this indicator?
- What is green infrastructure?
- Overlap with RCO36 (surface area of green infrastructure supported in urban areas)
- Alternative measurement units proposed: number projects, square metres
- Define significantly improved
- Double counting should not be an issue
- Focus on smaller green infrastructure in urban areas where they have more value rather than in rural areas.
- Which are the non-eligible areas?

Additional issues raised:

- Is blue infrastructure included in this indicator?
- Why do we limit the indicator RCO36 only to urban areas? How are urban areas defined ? Could outer and inner areas be considered?
- Can we consider interventions in Natura 2000 sites in the scope of this indicator? If yes, then there should be a clear demarcation between RCO26, RCO36 and RCO37.

B2 replies:

- In principle, our preference would be to keep the name as short as possible. It can be inferred from the measurement unit that the indicator measures an area.
- **We agree to include “upgraded” in the name**
- This indicator is dedicated to green infrastructure since it is a top EU priority.

- We propose to include afforestation in RCO26 and not in the indicator for measures for forest fires. We will clarify in the definition.
- For the definition of green infrastructure, in addition to the definition included in the fiche, we also mentioned a reference to a relevant study. We recommend reading the study since it gives examples of green infrastructure. We are hesitant to aim at providing a list of green infrastructure in the fiche.
- Indeed, there is indeed an overlap with RCO36. We propose to establish a rule that helps assign different types of investments across these indicators. This will imply that we need to add a * to RCO26 such that it can be used in specific objective 2.vii. The rule is the following: include all green infrastructure for adaptation to climate change in RCO26 (whether in urban areas or not), and include all other green infrastructure in urban areas in RCO36. This will ensure that all green infrastructure built with the primary objective of adaptation to climate change will be recorded in RCO26.
- On measurement unit, number of projects would be a weaker indicator. For square metres, we propose a similar solution as for previous indicators: if needed, use square metres at project level, and convert the aggregate numbers in hectares when reporting at EU level.
- In this case, providing an exact definition of “significantly improved” would be detrimental since it may risk limiting the scope of measurement. In our view, the MA is in a better position to provide the interpretation for significantly improved or establish criteria for project selection which are most appropriate for the local context.
- We agree that a rule for double counting in this case is not necessary.
- The indicator is not meant to orient the prioritisation of investments, but rather to measure the output of the supported interventions, wherever they are.
- The eligibility issues are established by regulation and cannot be addressed by an indicator.
- Yes, blue infrastructure is included in the scope of this indicator. We will mention it in the definition.
- The indicator proposed focuses on urban areas since the corresponding specific objective refers to urban areas. On the precise definition of an urban area, we will ask our colleagues working on the topic to provide one, and will decide whether to include it in the fiche.
- On Natura 2000, we will come back to this issue when we discuss the specific objective addressing biodiversity.

RCO27 National/ regional/ local strategies addressing climate change adaptation

RACER criteria: Relevant for 61%, Accepted by 67%, Credible for 61%, Easy for 67%, Robust for 67%

Issues raised:

- National/ regional strategies are required by enabling conditions
- Can the indicator cover water management?
- Can the indicator measure projects for action plans?
- What is “substantially revised” in the definition?
- Include “adopted” in the definition

Additional issues raised:

- Explain what is meant by regional and local strategies. In addition, projects may address only part of a strategy as they are implemented in some areas.
- Can strategies for water protection be included in this indicator?
- For the enabling condition mentioned, the strategies addressing climate change adaptation can be national or regional. One MS explained that they are planning to start with a national strategy, and then continued with a regional one. Therefore, the indicator should cover also the regional strategies. Furthermore, an explanation for the level considered for local strategies would be welcome. Consider also including “sub-national” instead of local.
- What happens if significant revisions are made for parts of a strategy.

B2 replies:

- We learnt that the main issue for this indicator is the following: the enabling condition proposed for investments in adaptation to climate change requires the existence of a national/ regional strategy. Therefore, the costs for establishing this strategy cannot be financed, and therefore the indicator cannot cover such strategies. **Therefore, the scope of the indicator needs to be limited to local strategies for which costs could be financed by ERDF. This implies a change in the name of the indicator.**
- There are common indicators proposed for water management.
- For action plans, we can consider having two indicators: one for local strategies addressing climate change adaptation, and another indicator for action plans for disaster risk management. Alternatively, action plans can be measured by programme specific indicators.
- We do not aim at providing an exact definition of “substantial revision”, leaving it to the MA to decide on the issue. What is clear is that the indicator should not count minor revisions of strategies.
- **We agree with the comment to include “adopted” in the definition.**
- In principle, we intended to measure any strategy for which costs are covered by the Funds. We would **agree with the earlier suggestion to replace local by “sub-national”** in order to provide more flexibility in the scope of the indicator. We will also clarify that only strategies supported by the Fund are to be included in the indicator.
- On water management, there is already a specific objective for water management. **We can consider including these strategies in RCO27, with the possibility to use the indicator also in the specific objective of water management.**
- On parts of a strategy revised, if the MA considers the revision as significant, we would agree with its inclusion in the indicator.

RCO28 Areas covered by protection measures against forest fires

RACER criteria: Relevant for 61%, Accepted by 67%, Credible for 61%, Easy for 67%, Robust for 56%

Issues raised:

- Is this an output or a result?
- Alternative measurement units: km, % hectares protected
- No output indicators are included for other types of risks (storms, droughts etc).
- Can the indicator cover also bush fires (wild fires)?

Additional issues raised:

- One MS noted that bush fires are a significant issue and therefore would find it useful to have an indicator covering these types of measures.
- Where are national measures for forest fires to be included? In RCO24 or RCO28?

B2 replies:

- For measures against forest fires there could be a variety of interventions (ex: information campaigns, equipment, early warning systems etc). Therefore, we decided to propose a proxy measure in terms of the area covered by the protection measures. The corresponding result is RCR36 in terms of population protected.
- For the measurement unit we maintain hectares, based on the assumption that the protection measures would cover a given forest area. As explained, percentages are not feasible since they cannot be aggregated at EU level.
- Indeed, we did not include output indicators for other types of risks because we could not find a representative indicator that would help measure the outputs in such cases. We are, however, open to suggestions from Member States. Our recommendation, however, would be the use of programme specific indicators tailored to the risks specific to the region/ country.
- It is not clear to us to what extent protection measures against bush fires are representative for our projects. **We will explore the possibility to include them in the scope of the indicators.**
- **On the overlap between RCO24 and RCO28, we could include a demarcation rule according to which national measures are included in RCO24, while regional or more localised measures are included in RCO28.**

RESULTS INDICATORS SO2.iv

RCR35 Population benefiting from flood protection measures

RACER criteria: Relevant for 72%, Accepted by 72%, Credible for 67%, Easy for 50%, Robust for 50%

Issues raised:

- Why use population and not the area protected? Land has a value in itself and its needs protection.
- Include prevention, protection, recovery and evaluations.
- Is double counting relevant for this indicator?
- This represents two indicators: 1) one indicator of population living in the area, and 2) the indicator on reduced vulnerability to floods in the area.

Additional issues raised:

- The calculation of population protected by protection against floods could be very difficult, especially in situations of connected rivers where an intervention in one area could have an impact also on a different area. We should make an effort and define more clearly how to calculate the values for this indicator.
- When talking about hazard maps, can we use also the preliminary assessments of flood risks specified in the flood directive?

B2 replies:

- There are several reasons for choosing population instead of area protected for this indicator. First, from the policy perspective, we want to show that we prioritise population. We agree with the comment that land has a value in itself and needs protection, but if we need to choose between measuring land and measuring people as a result, we prioritise people. Second, from the methodological perspective, an indicator measuring area protected from floods carries a high risk of overestimation since it would be challenging to define the exact area which can be considered as protected.
- As regards evaluations, we do not think they can be considered protection measures and be covered by this indicator since the indicator is meant to measure physical protection against floods.
- On double counting, we think it is relevant since it is possible that several projects contribute to protection measures covering overlapping areas. When this is significant, simply adding up the population across projects may result in a number which is higher than the population of the region/ country concerned. We proposed a rule for removal of double counting, but we can reflect further on it based on the experience accumulated in Member States already in the current period.
- The indicator combines both aspects when measuring the population living in areas with reduced vulnerability to floods, implying that population is to be counted only in areas where protection measures are implemented.
- On the population considered for the calculation, the main intention is to measure the people living in areas where vulnerability is reduced due to the interventions. We recommend the use of hazard maps where estimates of population exposed are likely to be provided.
- **On preliminary assessments of flood risks – we will need to explore this issue with our colleagues working on the topic.** We would agree with their use if they guarantee robust information on population exposed.

RCR36 Population benefiting forest fires protection measures

RACER criteria: Relevant for 56%, Accepted by 61%, Credible for 61%, Easy for 44%, Robust for 44%

Issues raised:

- There may be little population in forest area, and the forest has a value in itself.
- Measurement should not be limited to resident population – please see the reply in horizontal issues below.
- Are protection measures at national level included in this indicator? There is no result indicator proposed for national measures.
- What is the population counted? The population living in the forest?

B2 replies:

- We agree that some interventions may be implemented in forests where no people live. Nevertheless, this indicator is meant to be used where the objective is to protect population from forest fires. For measures which do not aim at protecting population, we recommend the use of a programme specific indicator.

- This result indicator is meant to cover all measures for protection against forest fires. For national measures, the difficulty is that we would need to count the entire population of the country, which would render the indicator less relevant. We are open to suggestions from Member States on how to handle this issue.
- On counting population, we recommend using the population estimates specified in hazard maps for areas with high risks of forest fires. In principle, all population exposed to a high risk of forest fires in areas where the measures are implemented should be considered.

RCR37 Population benefiting from protection measures against climate related natural disasters (other than floods and forest fires)

RACER criteria: Relevant for 72%, Accepted by 67%, Credible for 61%, Easy for 39%, Robust for 50%

RCR96 Population benefiting from protection measures against non-climate related natural disasters and risks related to human activities

RACER criteria: Relevant for 61%, Accepted by 50%, Credible for 39%, Easy for 56%, Robust for 39%

(indicators discussed together)

Issues raised:

- Most issues are similar as for previous ones.
- For RCR96, it is not clear why it has an *
- Which projects are covered by RCR96? What are the risks related to human activities?
- Which output indicators could be relevant for RCR96?

Additional issues raised:

- It will be difficult to set a target for RCR96, especially as regards human activities since these types of disasters cannot be predicted in advance.
- Protection measures are implemented to protect not only population, but also the assets in the area. This is why the area protection could be a better option.

B2 replies:

- We agree with the comment that RCR96 does not need an * since it can only be used in PO2 and PO5. **We will remove it.**
- RCR96 could cover, for instance, protection against seismic risk. On risks related to human activities, this is rather an issue of eligibility. If security protection is eligible, for instance, then this indicator would be relevant.
- The general indicator RCO24 (on monitoring, preparedness and response) could be relevant for such interventions but the problem is that national measures would invite counting the total country population. Therefore, we recommend using programme specific indicators tailored to the interventions.
- We agree with the comment that protection measures also cover the assets in the area. We considered the possibility to include an indicator of the value of the assets protected (as included in the Sendai framework). This would be ideal, but we realise that the MAs may not have the capacity to manage such measurement since it would require collecting information on the market value of the assets in the area of intervention. On the other hand a simple indicator

of area, as explained, is not sufficiently informative for the result of an intervention (since it may be an area where there is no population and no many assets either). In our view, an indicator of area is useful as a proxy for the extent of the intervention (output) but not that useful for a result.

- On the target for RCR96, we agree it may be challenging to set a target for risks related to human activities, but the target for the indicator would cover several types of risks.

RCR38 Estimated average response time to disaster situations

RACER criteria: Relevant for 44%, Accepted by 44%, Credible for 44%, Easy for 33%, Robust for 39%

Issues raised:

- The indicator is very useful at project level, but it loses meaning when it is aggregated at EU level across different interventions, disaster risks and areas.

Additional issues raised:

- While agreeing with the removal this indicator, one MS proposes its replacement with a new indicator in terms of population covered by upgraded devices for disaster risk management.

B2 replies:

- We agree with the comment on the difficulty to aggregate the indicator for different types of interventions, thus rendering the indicator non-informative. **Therefore, we would agree on removing this indicator from the list of common indicators.** However, we recommend to use such an indicator at project level, if relevant.
- For the new indicator proposed, we ask the MS to send us a fiche for the indicator with the critical elements such as definition and measurement unit. We will analyse it.

New indicators proposed by Member States

Indicators proposed:

- Number organisations supported for climate change adjustments (agricultural, forestry, construction, technical supply system or other)
- Number organisations introducing new or improved products, services, processes and applications (agricultural, forestry, construction, technical supply system or other)

B2 replies:

- The first indicator is an output indicator.
- The second indicator is very similar to the common indicator proposed for SMEs introducing innovation (an indicator which can be used in any specific objective). In our view, this new indicator proposed is very general, and it does not identify what other organisations are meant to be included. In cases where a MS needs to monitor specific types of organisations in this context, we recommend introducing a programme specific indicator for this purpose.

REGIO B.2 clarified that in the compromised text in the Council, there has been a shift of the Policy Objective 3.iii *Developing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility* to the Policy Objective 2. It is a relevant recent change. We will adapt the annex according to the final agreed text.

SPECIFIC OBJECTIVE 2.v Promoting sustainable water management

OUTPUT INDICATORS SO2.v

RCO30 Length of new or consolidated pipes for household water connections

RACER criteria: Relevant: 72%, Accepted: 78%, Credible: 78%, Easy: 72%, Robust: 61%

Issues raised:

- Name: a) suggestion to specify the indicator refer to public water supply. B) Does the indicator refer to all consumers or only to households? C) Is drinking water included? D) Can we count the full length of distribution system or only the connections? E) Do we mean consolidated or modernized? Replaced? Upgraded?
- Measurement unit: metres or km?
- Suggestion to specify that pipes should be operational.
- Can we include also private water lines?
- What is a substantial improvements? Proposal to skip “substantial.”

Unit B2 replies:

- It is agreed to insert public water supply in the definition, and to clarify that the indicator refers to all consumers and only to drinking water. The unit will specify that the indicator will be not limited to connections, but to the full length of distribution system. Finally, the unit will replace “consolidated” with modernised or upgraded. **New name: Length of new or upgraded pipes for the distribution system of public water supply.**
- As to the measurement unit, it can be metres at project level, and at the EU level, we prefer aggregate values in km.
- This is a general principle of all output indicators (i.e. physical deliverables need to be operational - reflected also in the result indicators). **The unit will clarify the pipes should be operational.**
- The public distribution of water supply is the priority of ERDF. This is why the unit agrees to include “public water supply” in the name. Moreover, the unit is not aware of prevalence of private water lines across the EU.
- The unit prefers to use substantial upgrading, and to make clear that maintenance and repairs are not covered.
- **The unit will clarify the fact that the indicator does not cover maintenance.** On the other hand, it is difficult to provide a clear definition (we are open to suggestions) without running the risk of overspecification. In any case, upgrading refers to reduction of leakages, efficiency measures etc. The indicator excludes maintenance and repairs - which should be covered by user charges. CPR and ERDF Regulations mention that operational costs are not eligible.

RCO31 Length of sewage collection networks newly connected or consolidated

RACER criteria: Relevant: 67%, Accepted: 72%, Credible: 72%, Easy: 67%, Robust: 56%

Issues raised:

- Name: a) suggestion to use waste water instead of sewage; b) does the indicator cover only connections, or the full length of pipes? Does the indicator cover consolidated or modernized networks? Can we replace it with upgraded? Does it cover only households? is a public network for collection of waste water?; does the indicator include the new or upgraded ones?
- Proposal to add reference to the Regulation for waste water.
- Scope: storm water management?
- Modernization – does it include replacement?
- Proposal to use metres rather than km as measurement unit;
- time of completion
- what do we mean with substantial upgrading?

Additional comments from Member States during the meeting:

- As to RCO30 and RCO31, a MS agrees to measure the length of the pipes for water connection or waste water connection.
- Do the indicators RCO30 and RCR31 include collective households, private households or institutional households?
- Is modernisation included?

Unit B2 replies:

- **The unit will use waste water instead of sewage;** the indicator covers the full length of pipes, the unit clarifies the indicator intends to cover public networks for collection of waste water, and they can be new or upgraded. **The new name: Length of new or upgraded pipes for the public network for collection of waste water. We will adapt the definition accordingly.**
- **Since the indicator will be extended to all consumers, private, collective and institutional households are included. We will adapt the definition according to the name.**
- The unit prefers to use substantial upgrading, and to make clear that maintenance and repairs are not covered.
- **The unit will add the reference to the Regulation for waste water.**
- **Storm water management is likely to be included here.**
- Yes, modernisation may include replacement if this means modernized pipes. Operational costs for maintenance are not covered.
- As to the measurement unit, at project level, metres can be used, but at EU level the unit prefers aggregate values in km.
- The indicator will cover pipes in operation.
- As to the proposal to count the length of pipes and not the connections, the unit will make sure that it is clear in the definition. The aim is to include the full network and not just connections.

RCO32 – New or upgraded capacity for waste water treatment

RACER criteria: Relevant: 78%, Accepted: 78%, Credible: 78%, Easy: 72%, Robust: 67%

Issues raised:

- Name: suggestion to add additional in the title
- Measurement unit: suggestion to use population equivalent served

- Proposal to specify in the definition that upgraded/ new treatment is in line with the Directive 91/271/EC.
- Clarification whether the baseline should be higher than zero.
- Scope of improvements: should it include better energy efficiency, recovery of phosphate and removal or trace substances from wastewater?
- Related question: should they imply only changes in treatment method? Can it be improvements to existing methods ?
- Can the unit provide a systematic identification of possible scenarios the indicator can cover? I.e. modernization leading to the fulfilment of the Directive; modernization to keep performance on infrastructures or methods which already fulfils the terms of the Directive, in the quality of waste water clean, this is modernisation in ensuring a better quality of waste water – is this not maintenance?
- Time measurement

Additional comments from Member States during the meeting:

- Does the indicator include investments relates to buildings of capacity of waste water treatment plants that are created to serve additional population?
- Proposal to clarify in the definition that indicator can cover only pipelines supported by the projects. Is energy efficiency included and optimisation, since they cover the management of water loss?

Unit B2 replies:

- The unit clarifies that the name implies the concept of additional. The indicator covers also capacity which is upgraded substantially in terms of treatment method.
- Population equivalent is the standard measurement unit for the capacity of waste water treatment. It does not necessarily mean that all the implied population is actually served. The unit will keep it.
- **The unit will make the reference to the Directive more explicit in the definition.**
- The unit clarifies the baseline should be zero, because it is an output indicator.
- As to the scope of improvements, the technical specifications of treatment methods should be better assessed by specialists in the field, in accordance to the above-mentioned Directive. Nevertheless, the unit cannot provide a comprehensive list.
- The indicator refers to upgraded – energy efficiency would be represented better by related indicators. The indicator when it reflects the primary goal of the project.
- The modernization leading to the fulfilment of the Directive can be covered by the indicator; while the modernization to keep performance on infrastructures or methods which already fulfils the terms of the Directive may not be covered by the indicator. It is up to the managing authorities and project selection criteria to decide to what level this improvement is considered significant and not just an operational issue.
- As to the time measurement, it is similar to previous indicators.
- The indicator includes investments relates to create and improve capacity of waste water treatment plants that are created to serve additional population. It should be in accordance with the mentioned Directive.
- As to the proposal to clarify in the definition that indicator can cover only pipelines supported by the projects, the unit would like to limit the pipes which have been supported by the project, not the entire network. Energy efficiency and optimisation should be included, but the unit will reflect on this to see how to frame better the definition. If the primary goal of the project is energy efficiency, other indicators could be also considered.

New proposed indicator

- National or regional strategies addressing sustainable water management

B2 reply:

- The unit clarifies that all the strategies are included in the indicator RCO26, which will be renamed as “Subnational strategies addressing climate change adaptation”.

OTHER COMMENTS

- One MS stated that it supports the decision to use RCO26
- As to the enabling conditions, the national investment plans deal with the water sector, not the water management national plan. What does it mean?

The Unit replies:

- **The Unit will add * to the new indicator to enable the MS to use also in other policy objectives.** As to the effects of the enabling conditions, the unit thinks it is the logical implication of the enabling conditions: if MS need national strategies to start investments, the current programs cannot fund the national strategies, since they should be already prepared to start the investments.

RESULT INDICATORS SO2.v

RCR41 – Population connected to improved water supply

RACER criteria: Relevant: 67%, Accepted: 61%, Credible: 67%, Easy: 39%, Robust: 44%

Issues raised:

- General comment: current indicators CO18 (population served by water supply) and CO19 (population served by improved waste water treatment) are creating difficulties in 14-20. This is why it is better to have two types of indicators: capacity and users connected to supported pipelines.
- Measurement: Shall we measure users in terms of population or dwellings? Can we count new users in more general terms, without considering population or dwellings?
- What does improved water supply mean?
- Overlap with RCR43 (water losses)
- Is the indicator relevant for interventions in infrastructure not networks?
- Do we count only resident population or can we consider also tourists?
- Terms of Drinking Water Directive: clarification whether there are minimum requirement

Unit B2 replies:

- The unit clarifies the efforts are going in this direction: the output indicator is intended to measure the capacity, while the result indicator to measure the population connected to improved water supply.

- The unit proposes to maintain population since: a) the measurement unit of capacity is population equivalent, and b) it is compatible also with the statistics produced by ESTAT (advantage for evaluation), c) for communication population is preferred.
- The indicator covers improved water supply, therefore it includes new and existing users.
- Improved water supply refers to improvements related to access – extension to new users; volume- volume of water delivered to consumers; and reduction of water losses, and quality – quality of water. **The unit will add these clarifications in the definition.**
- As to the overlap with RCR43, the improved water supply (higher volume) can be achieved by reducing water losses. While the indicator RCR41 measures the population covered, the indicator RCR43 reflects water losses. For such projects, both indicators will be relevant, depending on the primary objective of the project. The unit will propose to keep both, since the reduction of water losses and an efficient use of natural resources is an EU priority.
- Is the indicator relevant for interventions in infrastructure not networks? Not fully understood, since it is not clear what type of infrastructure. The indicator should be used when the objective of the intervention is to provide improved public water supply (be it in terms access, volume, quality).
- The indicator does not capture tourists. In addition, the number of tourists fluctuates across years and therefore is not an accurate representation of the use on the public water supply. In addition, tourists are not connected to public water supply. In situations where this is a significant issue, however, a programme specific indicator dedicated to tourists could be introduced.
- As to resident population, the issue is similar as for previous indicators. It all depends on the source of data, although in this case it is primarily the resident population connected to (and using) the public water supply. Furthermore, in the process of the definition of calls for projects, the MA would most probably have done an ex ante analysis of the opportunity of investments in the public water supply with reference to the population served.
- The terms of the Directive provide minimum required standards, without preventing the Member States to go beyond. In any case, this is an issue of opportunity and priority of investments which is best tackled in the context of negotiations of programmes.
- **The unit will include “public water supply” in the title to make it coherent with the output indicator.**
- As to double counting, time reporting – they are similar as for the previous indicators.

RCR42 – Population connected to at least secondary waste water treatment

RACER criteria: Relevant: 72%, Accepted: 72%, Credible: 61%, Easy: 44%, Robust: 50%

Issues raised:

- Name: can we use the term dwellings, or households? it is not the people who are connected but the households.
- Measurement unit: dwellings or population equivalent?
- Scope: are new users connected to the system included? Can the indicator include all users using the supported infrastructure, commercial entities, public buildings?
- Double counting: difficult
- Separate indicators for new users and for capacity of supported plants

Additional comments from Member States during the meeting:

- As to the measurement unit of RCR41 and RCR42, one MS explained the problem to define the demarcation between commercial users and non-commercial users, at the end, there are only estimates. It is proposed to use “users” instead of population and to change the cap.
- As to double counting, a possibility could be to identify the infrastructures instead of users.
- Suggestion to keep the population equivalent.
- Setting the baseline at the project level will be technically challenging.

Unit B2 replies:

- Name: Indeed, households are connected, but this is a result indicator whose aim is to measure the use of capacity for waste water treatment. The measurement unit for capacity is population equivalent. The unit prefers keeping population for at least two other reasons: a) compatible with measurement of the corresponding SDG indicator on population connected to wastewater treatment (SDG 6 Clean water and sanitation), therefore providing a context for this indicator in analysis, and b) continuity with the current period. The unit is aware of the difficulties in measuring population, but it encourages to find a common approach which could help streamline the process.
- On dwellings, the unit prefers to keep population, since it is the measurement unit for the capacity (see output indicator). The same measurement unit would imply a capacity indicator, therefore an output. The aim of the result indicator is to understand who is served.
- Scope : as explained in the definition, the unit aims to calculate the users which are connected to at least secondary treatment as a result of the intervention (could be additional users or simply an introduction of secondary waste treatment). In case of the upgrade from secondary treatment to tertiary or other methods, the indicator will not show a change since there is no new access to secondary treatment as a result of the intervention. This answers also the question on which population to include in case of upgrading.
- On commercial entities, these are not directly captured by this measurement. If the objective is a specific focus on connections of commercial entities to waste water treatment, the unit suggests the use of programme-specific indicator. The same applies for public buildings. Finally, the unit will be back to the colleagues and experts to understand what can be the challenges and the risks to use “users”. We would have the “real users”.
- Double counting: the same issue as for previous indicators, for which it is necessary to find an approach. The unit received a proposal to use georeferenced projects in order to remove double counting. We will reflect on it.
- Proposal to use two separate indicators for: a) new users, and b) capacity of supported plants. This would simplify the issue of double counting as there will not be multiple investments in the same unit. We are not sure we understand how this proposal addresses the issue of the result indicator. Is it a proposal to measure only new users connected to secondary wastewater treatment? We have already a capacity indicator in outputs.
- Remaining issues: similar as for the other indicators (resident population, time of measurement)

RCR43 – Water losses

RACER criteria: Relevant: 61%, Accepted: 44%, Credible: 61%, Easy: 39%, Robust: 61%

Issues raised:

- Name: proposal: reduction in water losses? this is a negative indicator, can it be transformed into a positive one? If the indicator is meant to be used for projects aiming at reducing water

losses, this could be indicated in the name in order to avoid misinterpretations. We assume that the misinterpretation refers to measuring water losses instead of reduction in water losses.

- Difficulties identified: this indicator is not measurable, and therefore it should be changed to an indicator of the % of water that is supplied to the network and used. Aggregation impossible?
- Scope: waste water losses included?
- Include waste water leakages as there is no similar result for waste water
- Cumulative reporting

Additional comments from Member States during the meeting:

- One MS appreciates the indicator, because it has a strong impact on the environment protection. Nevertheless, there are difficulties in setting target values and baseline: we have the quantity of water losses (cubic metres) at the level of the operators, not at the level of the project.
- Setting baselines and targets at programming stage will be challenging.
- Proposal to rethink the name of the indicator: “water saving” or “reduction on water losses”.

Unit B2 replies:

- We intend to use the indicator to calculate the percentage change in water losses from supported projects. This is why we proposed to provide absolute values with a non-zero baseline and the achieved level in order to have the data before and after the intervention.
- Water losses are measured regularly for public water distribution networks. It is common practice in the respective industry.
- As to the impossibility to have aggregation, the unit proposes one year to measure the change before and after the intervention, but it does not propose to anchor it to a specific calendar year. Projects do not need to have same base years.
- In case of waste water losses, the main issue is the extent to which leakages from waste water contaminate the water supply, but this is difficult to measure. Therefore, the proposal is to use RCR43 only for the public water supply.
- On cumulative reporting for this indicator, the value in a given year will cumulate levels of water losses recorded for all supported projects. When compared with (cumulated) baselines, we will obtain cumulated water savings from supported projects.
- Remaining issues – Calculation of baseline difficult: yes, the unit is aware of that and a common method should be found. The unit will explore the practice of ESF with % targets and its implications.

RCR44 – Waste water properly treated

RACER criteria: Relevant: 61%, Accepted: 44%, Credible: 61%, Easy: 39%, Robust: 61%

Issues raised:

- Interpretation: how do we interpret this indicator since the amount of waste water treated is influenced not only by the capacity available, but also by other factors, especially in the context of awareness campaign aiming at generating less waste water treatment. The results for investments in waste water treatment are in any case captured by RCR42.
- Overlap with RCR42

Unit B2 replies:

- The intention is to show the capacity we are building and using. On the other hand, there is a policy priority to persuade people to generate less waste water, and therefore, if we succeed at the policy level, we are going to have less waste water to be treated. We have two conflicting issues, because we have data on waste water reduction, but we cannot provide evidences on the reason why we have this change, for instance, if they depend on behavioural factors. Therefore, we consider the possibility to remove the indicator from the list because it will be not clear on how to communicate the indicator data.
- The unit agrees the indicator overlaps with RCR42.

GENERAL COMMENT

- In the case data have never been collected before, is the cost of gathering them eligible, could it be included among the project costs?

The unit replies:

This is an issue of eligible costs for technical assistance.

New indicators proposed by Member States

- New or upgraded water tank capacity

B2 reply:

- This indicator (output measured in m3) is proposed for settlements which are not connected to public water supply. For such cases we recommend a programme specific indicator, since we would rather prioritize the public network rather than individual solutions.

Specific Objective 2.vi Promoting the transition to a circular economy

OUTPUT INDICATOR 2.vi

RCO34 – Additional capacity for waste recycling

RACER criteria: Relevant: 78%, Accepted: 78%, Credible: 78%, Easy: 72%, Robust: 67%

Issues raised:

- Name: proposal to remove additional
- Measurement unit: it is proposed to use tonnes/year
- Waste recycling: proposal to provide the definition
- Scope: alternatives to be considered: - waste facilities built or expanded; - equipment supported; - small waste management systems; - collection of waste.
- New output for “Separate collection of waste” proposed

Additional comments from Member States during the meeting:

- MS assesses that the costs to gather the data on the new indicators are high, and it asks whether it is possible to use the national specific indicator outputs and results.
- Difficulty to measure the improvements of certain capacities, some of the devices can take more materials together, therefore the recycled waste can be more.
- Suggestion to have more specific definition, especially for “recycling”.

Unit B2 replies:

- Name: since this is an output indicator, baseline is 0. Therefore, we need to measure the additional capacity created, thus the name proposed. Please note that the indicator covers new capacity created as well as expanded capacity (new capacity added to existing facilities).
- The unit will reflect on the use of tonnes/year as measurement unit.
- The unit will include the definition of recycling from the waste Framework Directive 2008/98/EC and its 2018 revision Directive 2018/851 which corresponds to the definition included in RCR47.
- Recycling means any recovery operation by which waste materials are represented into products, materials or substances whether for the original or for other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for back-filing operations.
- As to the scope, a number of additional outputs are proposed (facilities equipment etc). Indeed, during the year that passed since the proposal of the Commission, the reflection on policy priorities for this specific objective has been consolidated further, and separate collection of waste is a priority for which we do not have an indicator. We learnt investments could address a variety of things such as bins, collection points, vehicles etc. Therefore, a possibility would be to include them all in one proxy indicator of “investments in systems of separate collection of waste”.
- Austria comment on energy produced by waste: it is not a priority and not eligible, it implies burning and it is not environmentally friendly.
- If the indicator is not suitable for MS, it can use national specific indicators.
- The unit will ensure to clarify the meaning of words and concepts in the definition, in accordance with the Directives.

RESULT INDICATOR 2.vi

RCR46 – Population served by waste recycling facilities and small waste management systems

RACER criteria: Relevant: 50%, Accepted: 44%, Credible: 44%, Easy: 39%, Robust: 39%

Issues raised:

- The number of resident population is not necessarily relevant in relation to capacity for waste recycling due to trade of waste.
- New result for “Waste collected separately” proposed

Additional comments from Member States during the meeting:

- Suggestion to check if the aim of the waste framework directive is reducing the input quantity of the waste or reducing the quantity of the output recycled of the waste. As to the MS understanding, the objective is to reduce the percentage of the preliminary produced quantity of waste. Maybe it will be necessary revising the second sentence of the underlying concept and definition.

- Difficulty to measure the recycling material after the procedures, because they usually mix the former material with other materials in order to have the final products.
- As to RCR46, 47, 48, MS proposed to use calendar year as time of measurement.

Unit B2 replies:

- We agree with the comment on the relevance of the indicator. Therefore, we would agree to remove it from the list, and propose to replace it with output indicator which measures efforts for separate collection of waste. The new indicator proposed instead would be measured in tonnes/year, with the baseline ≥ 0 (such that we can calculate % increase in waste collected separately). We assume that the opportunity of the investment will be reflected in the selection criteria for the projects.
- As to the MS concern to measure the recycling material after the procedures, the unit will consult the colleagues.
- The unit will consider the use of the calendar year.

RCR47 – Waste recycled

RACER criteria: Relevant: 78%, Accepted: 72%, Credible: 61%, Easy: 56%, Robust: 61%

Issues raised:

- Distinction from RCR48
- Distinction from RCR49
- Measurement unit: kg/year?
- Definition of backfilling
- Is this additional waste recycled or total waste recycled in the facility supported?
- Proposal to measure the quantity of waste which is expected to be recycled, and not the net quantity of material obtained after treatment.
- Aggregation (quantity/year)

Additional comments from Member States during the meeting:

- Possibility to measure the waste recycled after the treatment

Unit B2 replies:

- RCR47 refers to recycling, while RCR48 needs to be refocused to recycled waste used by enterprises as raw materials.
- The unit explains that recycling refers bringing waste back to the state of raw material. Waste paper becomes pulp; plastics are melted and molded into new products etc. Recovery is when most of the material thrown as garbage is used and processed in ways other than being destroyed. When it is not possible to reuse or recycle objects (mobile phones, computers, tvs, other electronic gadgets), then recovery is last options. To the extent possible, gold, silver, copper and metal from castings are being recovered from these objects for reuse.
- As to the measurement unit, ESTAT measures similar indicators in million tonnes (per year). Therefore, the unit proposes to maintain tonnes/year.
- Backfilling refers to recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering in landscaping and where waste is a substitute for non-waste materials. (2011/753/EU Commission Decision establishing rules and calculations for compliance with targets established in the waste framework directive).
- In the definition, waste recycled is mentioned as a direct result of the intervention; it is therefore additional.

- The result is the net material obtained and which can be used further. The unit proposes to measure the materials recycled already ready to be used for other purposes. If the input is counted, we will know the quantity of waste recycled.
- The unit explains that the aggregation should not be a problem since the measurement is not anchored to a specific calendar year. It is common practice to add quantities treated in a given year. The same applies to a comment on how are cumulated values to be reported – they will express total additional waste recycled by supported projects.

RCR48 – Recycled waste used as raw materials

RACER criteria: Relevant: 61%, Accepted: 56%, Credible: 44%, Easy: 44%, Robust: 44%

Issues raised:

- Clarification on the objective of the indicator
- Is the concept of “Recycled” implied?

Unit B2 replies:

- The objective is to measure the extent to which enterprises use recycled waste as raw materials, thus replacing primary materials. The corresponding output would be RCO01 (and associated indicators for forms of support) for support to enterprises.
- The unit agrees the concept of recycled is implied by the use as raw materials. **We will rename as “Waste used as raw materials”**
- The remaining comments reflect rather than the initial definition provided was not clear (example: clarifications of distinction from other indicators, relation with indicator for capacity for waste recycling etc).

RCR49 – Waste recovered

RACER criteria: Relevant: 61%, Accepted: 67%, Credible: 44%, Easy: 44%, Robust: 61%

Unit B2 replies:

- **We propose to remove it since the corresponding interventions are not eligible in the EC proposal.**

GENERAL COMMENT

- The specific objective intends to promote the transition to a circular economy, but the indicators are focused on waste, they are not reflecting all the aspects of circular economy.

The unit replies:

- It is true and it can be explained by the fact that there is more knowledge on that, we do not want to ignore the other topics. RCR48 is an example of indicator for circular economy. The indicator “SMEs supported” can be used as an output indicator for support to enterprises for eco-innovation.

Specific Objective 2.vii Enhancing biodiversity, green infrastructure in the urban environment and reducing pollution

OUTPUT INDICATORS 2.vii

RCO36 – Surface area of green infrastructure supported in urban areas

RACER criteria: Relevant: 78%, Accepted: 67%, Credible: 61%, Easy: 56%, Robust: 67%

Issues raised:

- Name: surface?
- Measurement unit: hectares?
- Scope: MS ask whether they can include a variety of types of green infrastructure such as parks, public gardens, public squares, forests, sport facilities, etc
- Overlap with RCO26
- Do we measure surface or infrastructure or area covered?
- Blue infrastructure
- Significant improvement

Unit B2 replies:

- The unit proposes to streamline the title in order to make it consistent with the title of the similar indicator RCO26 discussed for climate change adaptation. RCO36 will be for all the other interventions in urban areas. It is proposed to take “surface” out to shorten the name and to make it similar to other indicators.
- Similarly, for the measurement unit, it is proposed hectares at EU level.
- Other examples are given in terms of green walls and roofs, with the observation that they do not support much biodiversity. That may be true, but then they are better included in adaptation to climate change. In the definition we indeed proposed to exclude schoolyards in order to avoid counting asphalt schoolyards with some trees planted on the margin. We will explain better in the definition.
- The unit explained the proposed solution in order to avoid the overlap with RCO26. It is proposed to include all green infrastructure with the primary objective of adaptation to climate change in RCO26, and the rest of urban green infrastructure in RCO36.
- Not clear on this question. The unit proposes the area / surface of the green infrastructure.
- Blue infrastructure are included.
- As to significant improvement, the unit proposes the same approach as for previous indicators, and to leave it to the decision of the Managing Authority.

RCO37 – Surface of Natura 2000 sites covered by protection and restoration measures in accordance with the prioritized action framework

RACER criteria: Relevant: 72%, Accepted: 67%, Credible: 71%, Easy: 44%, Robust: 63%

Issues raised:

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Additional comments from Member States during the meeting:

- Name: proposal to remove “in accordance with the prioritized action framework”?
- Distinction from RCO26 and RCO36
- Proposal to merge with RCO99 ?

- Measurement: which area to measure?
- Scope?

Unit B2 replies:

- **The unit proposes to shorten the name,** as it realizes that “in accordance with the prioritised action framework” is better placed in the definition.
- There is a need to establish a rule for the demarcation between the three indicators: RCO37 (Natura 2000) and RCO26 and RCO36, which refer to green infrastructure. The unit proposes to include all green infrastructure built/ upgraded for Natura 2000 in RCO37 and all the rest according to the rule mentioned previously. Therefore, there will be: RCO37 – all Natura 2000; RCO26 – green infrastructure for climate change adaptation (not in Natura 2000); RCO36 – urban green infrastructure (not in Natura 2000 and not for climate change adaptation). **It will be clarified in the definition.**
- **There is also a proposal to merge the two indicators RCO37 and RCO99 (non Natura 2000). The unit disagrees, since the measurement of interventions for Natura 2000 sites is a priority. The unit proposes to remove RCO99 since it is likely to overlap significantly with the other existing output indicators RCO26 and RCO36.**
- The unit proposes to measure the area concerned by the intervention not the entire area of the Natura 2000 site.
- In terms of scope, the unit proposes to focus the indicator on protection and restoration of the site, thus not including, for instance, information campaigns. These latter can be measured by national specific indicators.
- **Remaining issues: similar to the previous indicators, notably removal of double counting (which is expected to be difficult). Also here GiS is proposed as a solution.**

RCO99 – Surface area outside Natura 2000 sites covered by protection and restoration measures

RACER criteria: Relevant: 72%, Accepted: 61%, Credible: 61%, Easy: 39%, Robust: 56%

Issues raised:

- Overlap with RCO26 and RCO36

Unit B2 replies:

- **As mentioned, due to the significant potential for an overlap with other proposed indicators, it is proposed to remove this indicator.**

RCO38 – Surface area of rehabilitated land supported

RACER criteria: Relevant: 67%, Accepted: 67%, Credible: 67%, Easy: 61%, Robust: 61%

Issues raised:

- Name: does the name include the concept of “decontaminated”? And rehabilitated?
- Measurement: which surface to be measured?
- Proposal to include (after the reference to old and illegal landfill sites) “when the perpetrator or polluter cannot be identified or is not required to bear the cost in accordance to the Directive 2004/35 etc”.
- It is unlikely that there would be several projects covering the same area, and therefore little risk of overlapping. In addition, another Member State explains that no double counting would

be guaranteed by the avoidance of double financing. Therefore, additional verifications are not required.

- Ideas for potential output indicators: quantity of waste and soil removed and transported to sites that treat hazardous waste; quantity of soil removed but rehabilitated in situ.

Additional comments from Member States during the meeting:

- Proposal to widen the definition to intervene also to military areas, since if we limit the definition to business areas, it is not possible to intervene in the other zones.

Unit B2 replies:

- Rehabilitation includes decontamination but not the other way around. We will need to adapt the definition accordingly (i.e. rehabilitation of land in contaminated areas etc).
- As to the measurement, the total surface area of the rehabilitated land, or just the (more limited) area of the decontaminated land will be measured. We would suggest the area for which support is provided, but the unit will reflect more on that.
- We could add a shorter version of “interventions in accordance with the principle of environmental liability” as defined in the Directive.
- We agree since measurement would be confined to the area of intervention not the total area of land which is, ultimately, rehabilitated.
- We would like to maintain the indicators we have and not to add others, we propose to use them as specific indicators.
- We will include the military sites. The intention is not to provide a comprehensive list in order to not limit the scope of the indicator.

RCO39 – Systems for monitoring air pollution installed

RACER criteria: Relevant: 56%, Accepted: 67%, Credible: 56%, Easy: 61%, Robust: 50%

Issues raised:

- Name: proposal to add “investments in” since it is a monetary indicator
- Scope: Environment benefiting from measures for air quality? surface covered by monitoring systems? Natura 2000 sites and other valuable sites suffer from air pollution.
- Proposal to specify “system installed” in the definition.

Additional comments from Member States during the meeting:

- Proposal to enlarge the scope.

Unit B2 replies:

- Thanks to this indicator, we will capture the systems for monitoring air pollution. The unit would favour the surface covered by monitoring systems, because it is the most precise one.
- The unit agrees to specify “system installed” in the definition.
- The proposal is to change the indicator in order to measure the environment benefiting from measures for air pollution (hectares).
- The proposed indicator is more a result than an output. In addition, it is rather general (since it is essentially surface covered by measures for air pollution).
- It is a proxy for such interventions which are otherwise difficult to quantify in one physical indicator. On the other hand, most likely this indicator will include monitoring systems for air pollution since many other measures are included in green infrastructure, transport etc. Therefore, the unit tends to agree with the solution provided by a Member State to replace the

indicator with a physical output defined as “Surface covered by monitoring systems for air pollution” where monitoring systems would be new or significantly upgraded. An alternative (proposed by other MSs) would be to count the number of systems / stations installed in the city (although a choice between systems and stations would be needed). The second indicator would be more limited in scope.

General comment

- If surface is used in output indicators and population in result indicators, we could have problems, because the population interested could be also in other zones not covered by the surface interested.

The unit replies:

- The unit will reflect on the comment also in relation to other indicators. The main risk is overestimation if we open the indicator to wider areas than the ones supported.

RESULT INDICATORS 2.vii

RCR50 – Population benefiting from measures of air quality

RACER criteria: Relevant: 44%, Accepted: 33%, Credible: 22%, Easy: 39%, Robust: 39%

Issues raised:

- Measurement: the measurement is not clear since measures for air quality (such as monitoring) do not necessarily imply improved air quality.
- Difficulty to identify the population benefiting from measures for improved air quality.
- Double counting
- Time measurement

Additional comments from Member States during the meeting:

- Clarification on the population definition: the delegation explains that it is difficult to distinguish the population residing in the areas interested and the ones only working in that area. Is it possible to limit the indicator only to the resident population? Using this method, we can avoid the double counting.

Unit B2 replies:

- We agree with these observations, there can be two broad types of measures. The first refers to measures which aim at monitoring air quality. For this reason, the unit proposes the output measured by the proxy indicator of area covered by monitoring systems. The second type of measure refers to actions taken to improve air quality (for which the output could be green spaces, implementation of action plans for redirection of traffic etc). the unit does not propose a common output indicator for such measures beyond what we have introduced already (green spaces), but it proposes to introduce the result indicator on population benefiting from such measures, and we can open the indicator to other specific objectives if necessary.
- The projects would justify the opportunity of the investment based on its expected impact on a target population.
- As regards resident population, as with the other indicators, the unit proposed it since it expected it would be easier to identify the population concerned on this basis. On persons working in the area (in addition to residents), the unit proposes to add “where possible”. In

principle, maps of air pollution (elaborated based on the data from monitoring systems) could provide a solution for estimated population. We can add “estimated population” in the definition.

- As to double counting, as solution could be to consider the overlaps in areas concerned by the projects.
- For time of measurement, the unit proposed one year in order to enable the calculation of air quality over a period of time (number of days in a year with a given level of air quality).

RCR95 – Population having access to new or upgraded green infrastructure in urban areas

RACER criteria: Relevant: 78%, Accepted: 61%, Credible: 56%, Easy: 33%, Robust: 44%

RCR51 – Population benefiting from measures for noise reduction

RACER criteria: Relevant: 50%, Accepted: 31%, Credible: 33%, Easy: 44%, Robust: 22%

(These indicators are discussed together)

Issues raised:

- RCR95: Measurement: a given green area would be used not only by people living close by, but also by people living in other areas.
- RCR51: If green infrastructure is used for noise reduction, this would be already included in RCR95. Lack of established methods to determine the level of noise reduction. This indicator has no correspondent in the output indicators proposed.

Additional comments from Member States during the meeting:

- Proposal: the indicator is limited to urban areas, it could be replaced with “population having access to new ecosystem services”, such as water purification. It will cover other services coming from restored services coming from NATURA 2000.
- Some MS think 1 km is limiting, proposal to enlarge to 5km.

Unit B2 replies:

RCR95

- This is true, but the people living in the neighbourhood would be the primary beneficiaries for health reasons (quality of air, stress reduction, possibility of time efficient leisure etc).
- The unit proposed a 1km distance as a reasonable distance which may not require use of vehicle transportation. Biking, walking would be efficient means to reach a place within 1 km for an average person.
- Remaining issues on double counting, time of measurement: similar to previous indicators
- The unit welcomes suggestions to consider different radius lengths. Moreover, the unit claims that the farther you go from the green infrastructures, the higher the probability to have double counting problems.

RCR51

- The proposal is to remove the indicator from the list. We will need to explore this issue more with our colleagues.

RCR52 – Rehabilitated land used for green areas, social housing, economic or community services

RACER criteria: Relevant: 78%, Accepted: 61%, Credible: 72%, Easy: 44%, Robust: 56%

Issues raised:

- Name: suggestion to add surface of
- RCR52 is the same as RCO38.
- What do we mean by a “formalised” action plan?
- The types of used proposed appear limiting for the possible uses of the rehabilitated land. It may take years until the land is used for a different purpose.
- Proposal also to substitute “formalized” by “adopted or implemented.”

Additional comments from Member States during the meeting:

- Suggestion to add reference to EU legislation to clarify the meaning of formalised action plan.

Unit B2 replies:

- The measurement unit for land is a surface unit, so it should be implied. The unit would like to keep it as surface, avoiding to introduce “of”.
- For the result, however, we propose to include in the definition action plans to redevelop and use the land. The output indicator simply refers to rehabilitation of the land (i.e. ready for use but not necessarily with an action plan to use it).
- The unit clarifies that a “formalised” action plan is a clear commitment of the owner of the land to use the land for a specific purpose. We do not mean to imply that implementation of action plans would not be desirable, but we assumed it may not be feasible within one year after the completion of the works.
- The unit can add the additional uses proposed (cultural infrastructure, sports, transport etc).

General comments

- 1) Difficulty of measuring result indicators due to time periods needed and possible influence of external factors. All data sources proposed in the fiches come from projects. There can also be databases at national level which can be used.
- 2) For result indicators measured at project level – the MAs will have the possibility to update the baselines after selecting projects. What will be the relation between the baselines included in the programme (and therefore the EC decision on the content of the programme) and the updated baselines in implementation?
- 3) Similarly, for target values, these will be established also at project level and included in the financing agreement. One MS has this experience currently, where they learn that beneficiaries could not reach the targets due to well justified external factors. In this cases, it is difficult to close such contracts without penalties. A solution could be to consider the possibility of establishing a tolerance interval around the target in order to account for the influence of external factors on the results. This would be especially useful at project level.
- 4) Ensure coherence between names, definition etc in the fiche.
- 5) Target in % at OP level are more useful than in absolute level. Is it possible to consider targets in a different measurement unit (i.e. %) than the indicator itself (as it is the case for ESF)?
- 6) Will there be any guidance on how much the interventions/ allocation should be covered by common indicators?

- 7) For almost all output indicators, the time of measurement mentioned in the fiches is “project completion.” As agreed in the previous meeting, we could consider the physical completion for partially implemented operations, as introduced in the current period.
- 8) The issue of double counting for indicators measured in hectares can be significant. Among hundreds of projects, it is difficult to identify whether they cover the same area. Finding a solution for this would be very useful since it can happen that, upon aggregation, the total area calculated exceeds the area of the country. In addition, evaluator from Member States recommended the use of the GIS system. Could this solution be explored?
- 9) Indicators expressed in terms of population should not be limited to resident population.
- 10) Aggregation of values for indicators measured in population can be difficult since, if double counting is not removed, such an indicator can reach rapidly 100% of the regional population. This remains a challenge, especially for projects which already cover total regional or national population.
- 11) Often when we discuss indicators we run into issues of eligibility of operations, issues which are to be discussed in the Council. For indicators, however, would it be possible to include references in the fiches just to signal it is not an issue of definition for the indicator?
- 12) In order to clarify better the use of indicators, it would be useful to mention in the fiches the main categories of intervention which could be considered as representative for the indicator,
- 13) As to the time measurement- one year after project completion-, it is difficult to get the results from the beneficiaries after one year. It is challenging and expensive. Gathering initial data at the beginning of the project and then correcting them one year later, to be sure that all projects are counted.
- 14) On hazard maps used as data sources, it is possible that there is no time to change them after the end of the intervention such that they can reflect the effect of the intervention on the vulnerability of the area.
- 15) Concerns raised as to indicators where the baseline and achieved values have to be reported, since it is not in line with the IT capacity. It is proposed to set a national target in %, otherwise it is difficult to predict the target and the baseline.
- 16) In the new programming period, circular economy will have high relevance, but MS claims there is not space enough for topics related to it. We are talking about prevention or after procedures.
- 17) To what extent will the fiches for indicators be considered mandatory?

B2 replies:

- 1) We acknowledged that the result indicators will prove more difficult to measure than outputs. We also think that these indicators will be essential in proving the achievements of the policy since they measure the results at the level of interventions supported. Clearly, given the difficulties in measurement emphasized, we will have to be careful in terms of the narrative built around the value reported, such that people understand their limitations. In addition, we are aware of the fact that these indicators will require adjustments in the monitoring systems, and also in the reporting procedures established for the beneficiaries. They will be asked to account for the results achieved after the physical completion of the investments. These are the costs of the changes proposed. In terms of benefits for the policy, the significant advantage will be the possibility to show and analyse, evaluate the direct results of the investments made, even if qualified by the limitations mentioned above.
- 2) As for the updated baselines – we propose this updating in order to avoid frequent programme modifications. It is a solution to simplify the process. If, however, the MA needs to change the programme for other more substantive issues (selection criteria etc), this would be an opportunity to change also the baselines of indicators as new information becomes available.

- 3) On targets, we agree with the comment and the solution proposed. We also think that a tolerance interval for targets would be a good idea as a practice for the MA. It is, however, not in the regulation since targets in ranges are difficult to operate with. These horizontal issues could be addressed in the guidance. We will need to reflect on these issues further together.
- 4) We agree with the comment on ensuring coherence across fields in the indicator fiche. We will discuss together also the structure of the fiche in order to understand which fields are considered most useful.
- 5) As mentioned, targets in percentage would be ideal. In terms of data collection, however, if we know a target in percentage and the baseline, it will be straightforward to calculate the target.
- 6) The issue of the share of allocation covered by the indicators - we will address the issue in the meeting in May. As regards the common indicators, our aim is not to cover 100% of the policy with common indicators. Therefore, there will be scope for the use of programme specific indicators.
- 7) We agree with the reporting on outputs when they are achieved physically, even for partially implemented operations, except for cases when an additional condition may apply (such as energy performance certificates for energy efficiency).
- 8) We agree with the comment that removal of double counting for indicators measured in hectares is difficult and, for the time being we do not have a solution. Member States have more experience accumulated with this issue, and we hope we will discuss this in a separate meeting on methodologies for all similar indicators. The suggestion of GIS systems is a good idea, and we will need to explore its feasibility.
- 9) We included resident population in the definitions of these indicators since we learnt from the study on indicators that the MAs could use population registries to facilitate measurement. The comments received, however, suggest that this may not be the case since in some areas tourism is significant, and therefore should be taken into account. More generally, however, our recommendation would be to use the population estimates included in the hazard maps.
- 10) We agree with the comment. This comment, however, invites a reflection on whether these indicators could be used to cover national measures since counting the country population for one national project would render the indicator irrelevant for other, more localised interventions.
- 11) In terms of eligibility, in principle is that indicators are to cover only eligible operations as specified in the regulation. We cannot aim at defining indicators for very detailed eligibility issues.
- 12) Yes, we will reflect on the possibility to include categories of intervention. For the meeting schedule in May we are planning to discuss the structure of the fiche. However, we hesitate to provide recommendations on associations between indicators, or between indicators and the categories of intervention, since this may be interpreted as mandatory and would therefore be counterproductive since there are many combinations possible. We will explore the possibility to address this issue.
- 13) In some cases, we cannot evaluate immediately because the result are not available, and the interventions take time to measure the results. The unit welcomes the idea to gather the initial data at the end of the project and then come back with survey and correct the data.
- 14) On hazard maps, we do not expect that values for the result indicators would necessarily rely on updated hazard maps since we realize that this implies a process which goes beyond the interventions in the programmes. The hazard maps at the time when intervention is started could be used to inform estimates of population which is likely to be protected by the measures implemented. The impact on the effectiveness of the protection measures implemented can be assessed later, in evaluation.

- 15) The unit is aware that in some cases the IT capacity is not already fully developed and the unit invites the MS which already program them to share with the colleagues their achievements. The unit plans to run a study on monitoring system for cohesion policy, to understand how they are functioning now and how to improve them.
- 16) Prevention is a big priority, and it implies behavioural campaigns, whose results are difficult to measure, therefore the unit suggests using national specific program indicator. One MS assesses measuring the behavioural approach is possible and the unit asks to send more clarification on it.
- 17) The fiches for the indicators are meant to inform the MAs on the definition and measurement of the common indicators, in order to ensure a harmonised approach and comparability of data. Therefore, if a common indicator is used, we expect it will be measured according to the definition provided in the fiche. An indicator with a different definition would be a programme specific indicator, and therefore data should not be aggregated in the common respective indicator.
- 18) B2 thanked Portugal for making the effort to identify the Sustainable Development Goals that could be associated with the indicators in this policy objective.