European Evaluation Network for Rural Development

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WORKING DOCUMENT

DEFINING PROXY INDICATORS FOR RURAL DEVELOPMENT PROGRAMMES

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European Evaluation Network for Rural Development

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CONTENT

ACRONYMS

ALI	Agricultural Labor Input Statistics
AWU	Annual Work Units
CCI	common context indicator
DG AGRI	Directorate-General for Agriculture and Rural Development
DG ENV	Directorate-General for the Environment
DSL	Digital Subscriber Line
EC	European Commission
EEA	European Environmental Agency
EU	European Union
EUR	Euros
ExCo	Expert Committe
FAO	Food and Agriculture Organization of the United Nations
FOWL	Forest and Other Wood Land
FSS	Farm Structural Survey
GHG	Green House Gas
GVA	Gross Value Added
HNV	High Nature Value
MA	Managing Authority
MCPFE	Ministerial Conference on the Protection of Forests in Europe
MS	Member State
OECD	Organisation for Economic Co-operation and development
RDP	Rural Development Programme
SOC	Soil Organic Carbon
UAA	Utilized Agricultural Area
UNDP	United Nations Development Programme

1 INTRODUCTION

A latest draft list of 45 common context indicators (CCIs), developed by the European Commission in discussion with Member States and main stakeholders, has been presented at the 17th Evaluation Expert Committee meeting held on 18 September 2013 in Brussels. The complete set of the proposed common context indicators will be included in the implementing acts and will be used in the preparation and subsequent evaluation of Rural Development Programmes of 2014-2020. The use of these common indicators will allow aggregation and comparability across RDPs while helping to provide a comprehensive picture of the situation which can be linked to the overall rural development policy framework.

One of the principles for the selection of the proposed set of common context indicators is that data should be available from EU sources at least at national level. Member State/Managing Authority (MS/MAs) received from the Commission services data at national level on common context indicators with the exception of HNV farming, and all available data at regional level. For those indicators for which the Commission cannot provide regional data, MAs are encouraged to use data from their own national and regional sources calculated using the same definition and methodologies as for the proposed common context indicator. Where data for a common context indicator is not available, neither from EU nor Member State sources, an estimation of the common context indicator or a proxy indicator should be used.

As the use of proxy indicators will be an often used approach to fill data gaps for common context indicators for regional RDPs, it is important to define this concept within the context of Rural Development Programmes. A common understanding of the main features of a proxy should ensure a consistent approach across RDPs. In this paper, a definition of a proxy indicator is presented based on the related definitions used by the European Commission, the European Environmental Agency (EEA), Europeaid and other relevant organizations such as FAO, UNDP and OECD. Also, the outcomes from the Good Practice Workshop organized by the Evaluation Helpdesk in March 2013 regarding the use of proxies and their features have been taken into consideration when developing the definition.

2 TENTATIVE DEFINITION OF PROXY INDICATORS FOR COMMON CONTEXT INDICATORS

The rationale of proxy indicators

A proxy indicator will serve the same purpose as the common context indicator it substitutes for, so it should have the same features. In this respect, a common context indicator is a tool to provide information on relevant aspects of the general contextual trends (economic, social or environmental) that are likely to have an influence on the performance of RDPs, and which contributes to the identification of strengths and weaknesses within the region and helps to interpret impacts achieved within the programme[1]. In the light of this definition, a proxy indicator can be understood as an approximation to a common context indicator which provides sufficient information to allow the assessment of a relevant contextual aspect for rural development (e.g. organic farming, energy use in agriculture, etc.).

A proxy indicator can employ an alternative definition and/or data source as compared to those used for the common context indicator. An example of a proxy used currently within a regional programme where regional data on the population of rural areas with DSL internet is not available, is the number of households in the rural area with an internet connection.

Moreover, a proxy indicator should comply with the SMART criteria as defined for any other common indicator[2]. It should be specific, measurable, available/achievable in a cost effective way, relevant for the programme, and available in a timely manner.

In practice, a proxy indicator does not contribute to aggregation and comparability of data at EU level as the selected proxies might differ among RDPs. However, EU level data will be available through aggregation of the national data.

Definition of proxy indicators

Based on the above reasoning, the following definition is suggested:

> *"A proxy indicator for a common context indicator is a quantitative indicator that provides information on a particular territorial contextual aspect (social, environmental, economic). It serves to assess in RDPs the same contextual aspect as intended by a given common context indicator but for which data is not available. Compared to a common context indicator, a proxy indicator uses either a different definition and/or an alternative data source.*
>
> *A proxy indicator shall comply with the SMART criteria for indicators and so they should be specific, measurable, available/achievable in a cost effective way, relevant for the programme, and available in a timely manner. Furthermore, a proxy indicator is applied on a temporary basis whilst MAs intend to obtain the required value of the common context indicator."*

It is important to highlight that a proxy indicator might be territorial/context specific, in the sense that an adequate proxy in one region might not be adequate under a different RDP context (an example of this situation is provided in the following chapter). The adequateness of a proxy indicator should be judged within each particular RDP context. The selection of an adequate proxy might therefore require a close collaboration between MAs and technical experts such as evaluators, data providers, and the scientific community. In addition, a proxy **widely accepted** by the main rural development

[1] Definition of context related indicator from the Handbook on Common Monitoring and Evaluation Framework (CMEF) - Guidance document Sept 2006.Page 8.
[2] Features of common indicator defined in the Handbook on Common Monitoring and Evaluation Framework (CMEF) - Guidance document Sept 2006.Page 7.

stakeholders in a given region enhances the accuracy and adequacy of the information provided by the proxy with respect to the reality of the territory.

What is the difference between a proxy indicator, a programme-specific context indicator and an estimation of the common context indicator?

Proxy indicators provide similar information as a required common context indicator for which data is not available at the RDP level, using an alternative definition and/or data source. A proxy indicator is not an alternative to a given common context indicator where RDP level information does exist, even if this information provides better assessment of the situation for the territory.

An estimation of a common context indicator is a figure or index that provides a close guess to the real value of the common context indicator and which is calculated using data from the prescribed sources. *Example: Common context indicator 14 (Labour productivity in agriculture): data on GVA and AWU for 2012 is available at national level which allows the calculation of the indicator for a recent year. However, at regional level data on AWU is only available for 2010 so it is necessary to estimate the value for 2012. In this regards, the regional value of 2012 is estimated by assuming that the regional distribution of AWU in 2010 will remain constant in the country in the following years. Therefore, the regional AWU is estimated by applying the 2010 regional distribution to the national value of 2012*.

By contrast, programme-specific indicators are additional indicators employed in RDPs to better reflect and describe the specificities of the territory highlighting issues of particular importance. They support and justify particular interventions (e.g. targeting, measure packages, thematic sub-programmes), if the common context indicator set is not sufficient to support the actions proposed. Also, programme-specific context indicators allow Managing Authorities to make use of locally available data, which can contribute to a more detailed description of the territory and its needs.

3 IDENTIFYING ADEQUATE PROXY INDICATORS FOR COMMON CONTEXT INDICATORS

Proxy indicators provide a solution to overcome data gaps on a certain common context indicator. In some cases these data gaps may be only temporary whilst a data collection system is established, or a required monitoring programme implemented (e.g. monitoring of the conservation status of agricultural habitats). In other cases, it may be that regional data according to the common context indicator definition will never be systematically available (e.g. agricultural productivity). The following guiding questions and criteria should help MAs to identify and develop adequate proxy indicators for their RDPs. Overall, the proposed criteria ensure that proxies qualify as SMART indicators, allow the assessment of the same contextual aspect as the common context indicator, are widely accepted by main rural development stakeholders and applied as a temporary solution to overcome the data gap in a common context indicator.

Table 1 Guiding questions for the identification of adequate proxy indicators

GUIDING QUESTION	CRITERIA
1 Does the proxy qualify as a SMART indicator?	*(Specific)* 1.1 The proxy provides clear information on a specific contextual aspect of interest for the RDP *(Measurable)* 1.2 There is sufficient quantity and quality of information available at RDP level 1.3 The proxy provides a quantitative measurement *(Available cost effectively)* 1.4 Information collected on the proxy does not imply disproportionate administrative burden or cost *(Relevant)* 1.5 The proxy can be directly linked to a rural development priority and focus area 1.6 The proxy is sensitive to changes in a particular contextual aspect *(Timely available)* 1.7 Consistent data series are and will be available in the near future for the proxy
2 Does the proxy indicator allow the assessment of the same contextual aspect as the common context indicator?	2.1 The proxy indicator uses the same or similar units of measurements as the common context indicator 2.2 The proxy indicator partially complies with the definition given for a common context indicator 2.3 MAs, evaluators, data providers and technical experts agreed on the adequacy of the proxy to assess the same contextual aspect as the common context indicator
3 Is the proxy widely accepted among RD stakeholders?	3.1 The proxy indicator was consulted with main rural development stakeholders 3.2 The proxy indicator is frequently used in the scientific community to describe the trends in rural areas
4 Is the proxy indicator a temporary substitute for a common indicator?	4.1 Solutions to overcome the lack of data on the common context indicator have been set up 4.2 Actions and activities are planned to obtain data on the common context indicator soon

Source: Helpdesk of the European Evaluation Network for Rural Development

4 PROXY ASSESSMENT: EXAMPLE FROM AZORES (PT)

Data on the common context indicator Green House Gas (GHG) emissions from agriculture is not available from any data source at RDP level in Azores. Instead, a proxy (Methane emissions from enteric fermentation[3]) is implemented as a solution to bridge this data gap and ensure that GHG emissions from agriculture are assessed in the RDP. In this chapter, this example is used to illustrate how the proposed criteria may help to evaluate the quality of the selected proxy indicator under the specific rural context of Azores.

The indicator GHG emission from the agricultural sector measures emissions from several agricultural sources such as enteric fermentation, manure management, rice cultivation, agricultural soil management, prescribed burning of savannahs and field burning of agricultural residues. The proposed proxy only accounts emissions from enteric fermentation while employing the same measurement unit as the required common context indicator (1000 tonnes of CO2 eq).

The information provided by the proxy indicator still remains relevant in the Azores context to assess agricultural GHG emission. The main agricultural source of emissions in the island is produced from cattle production activities due to the enteric fermentation processes. The other sources considered in the definition of the common context indicator are minor or in some case could be assumed that they are zero (e.g. emission from rice cultivation as this production activity is not present in the island). Therefore, the proxy can potentially capture the efforts to combat climate change in the region through the reduction of GHG emission in the agricultural sector.

In Portugal, information on the required common context indicator is provided by the National Environmental Agency through the State of the Environment Report. The report only provides data for the continental part of the country and so excludes the islands (Madeira and Azores). On the other hand, information on emissions from enteric fermentation is easily available for Azores by applying specific equations developed in a study “National low-carbon Roadmap 2050” conducted by the National Environmental Agency. These equations allow the calculation of the proxy indicator on a yearly basis, and ensure that quality and sufficient information is available to accomplish all the evaluation tasks. The calculation of this proxy indicator does not represent any extra administrative burden or cost to rural development beneficiaries and extra costs are only incurred to calculate the values at the points when this information is required.

The identification and selection of the proxy indicator was steered by the MA in collaboration with experts, data providers and evaluators. Whilst the proxy is used in the development of the RDP, the Regional government of Azores is currently working with Environmental authorities to put in place all the necessary mechanisms to include data on agricultural GHG emission of the island in the State of the Environment Report, so that data on the required common context indicator will become available for Azores.

The following table shows that the proxy implemented in Azores complies with most of the criteria for quality proxy indicators (13 out 14 criteria).

[3] Enteric fermentation is a digestive process by which carbohydrates are broken down by microorganisms into simple molecules for absorption into the bloodstream of an animal. Enteric fermentation occurs when methane (CH_4) is produced in the rumen as microbial fermentation takes place.

Table 2 Assessment of the proxy indicator - Emission from enteric fermentation (1000 tonnes CO2 eq) - in Azores

Guiding questions	Criteria	Description	Assessment
Does the proxy qualify as a SMART indicator?	**1.1.** The proxy provides clear information on a specific contextual aspect of interest for the RDP	Provide information in regards GHG emission from agriculture (considering only emission from enteric fermentation)	+++
	1.2. There is sufficient quantity and quality of information available at RDP level	Information at RDP level is obtained from a contrasted and widely used source in the country.	+++
	1.3. The proxy provides a quantitative measure	The proxy provides the quantity of emissions in (1000 tonnes CO2 eq)	+++
	1.4. Information collected on the proxy does not imply disproportionate administrative burden or cost to RD beneficiaries	In principle, no extra administrative burden and costs are incurred for collecting the data	+++
	1.5. The proxy can be directly linked to a rural development priority and focus area	The proxy is linked to the RD Focus area 5D " Reducing green house house and ammonia emissions from agriculture "	+++
	1.6. The proxy is sensitive to contextual changes (yes/no)	In principle, reductions of emission from enteric fermentation (e.g. better cattle management practices) will be reflected by the proxy	+++
	1.7. Consistent data series are and will be available in the near future for the proxy	Information is available on a yearly basis	+++
Is the proxy strongly correlated with the common context indicator?	**2.1.** The proxy indicator uses the same or similar units of measurements as the common context indicator	The proxy uses the same units of measurement as the common context indicator	+++
	2.2. The proxy partially complies with the definition given for a common context indicator	The definition of the proxy indicator is part of the complete definition of the common context indicator	+++
	2.3. The adequacy of the proxy indicator for the given common context indicator is agreed among MAs, evaluators, data providers and technical experts	MAs worked closely with evaluators, data providers and technical experts to identify and select proxy indicator	+++
Is the proxy widely accepted among RD stakeholders?	**3.1.** The proxy was consulted with main rural development stakeholders	n.a	n.a.
	3.2. The proxy is frequently used in the scientific community to describe the trends in rural areas	The equations are used by stakeholders in Portugal to measure emission from enteric fermentation. The proxy could be considered accepted by the scientific community as they participated in the development of the equations	++
Is the proxy indicator a temporary substitute for a common indicator?	**4.1.** Solutions to overcome the lack of data on the common context indicator has been set up	The regional government is actively working to provide the data on the common context indicator	+++
	4.2. Actions and activities are planned to obtain data on the common context indicator soon	It is planned that data on the common context indicator is provided in the near future by the National Environmental Agency	+++

Source: Helpdesk of the European Evaluation Network for Rural Development

ANNEX 1

EXAMPLES OF EXISTING PRACTICES

ANNEX 1: EXAMPLES OF EXISTING PRACTICES

For certain common context indicators data is not available from EU-data-sources, mainly at regional level. The following table illustrates existing practices for proxy indicators applied in regional RDPs to overcome the data gaps on common context indicators when MAs did not find the required data from the regional or national sources. Also, the table illustrates estimations made by DG AGRI in the database on common context indicators shared with all ExCo members. It is important to highlight that this table does not intend to serve as an indicative list of proxy indicators to be generally applied in RDPs when data is not available on a particular common context indicator from national and regional data sources, but rather to illustrate examples of proxy indicators that are applied in different contexts and which might help MAs to identify suitable proxy indicators for their RDP. In addition, the following proxy indicators have not been subject to quality assessment due to insufficient information available.

Table 3 Identified estimations and proxy indicators for common context indicators (2014-2020)

Common context indicator	Definition/calculation	Units of Measurement	Estimations	Proxy (existing practices)
Socio economic indicators				
9- Poverty Rate	People at-risk-of poverty or social exclusion (people at-risk-of-poverty or severely deprived or living in a household with low work intensity over the total population): total and by type of area (thinly-populated, intermediate urbanised and densely-populated)	Total and in each type of area: - % of total population		• The national poverty rate used as a proxy of the regional poverty rate
Sectoral indicators				
14- Labour productivity in agriculture	Total GVA per full-time employed person in agriculture	EUR/AWU	• An estimation of the GVA is applied in the database provided by DG AGRI on CCIs to all ExCo members	• FSS (Farm Structural Survey) data can be used to regionalize ALI (Agricultural Labour Input statistics) national data of AWU: the % that each region represents in FSS national data in AWU is calculated. Later, the regional shares can be applied to the ALI national value of AWU. (This

Common context indicator	Definition/calculation	Units of Measurement	Estimations	Proxy (existing practices)
				approximation is used in the database provided by DG AGRI on CCIs to all ExCo members) • The number of employed people in the agricultural sector used as a proxy of AWU.
15- Labour productivity in forestry	Total GVA per full-time employed person in forestry	EUR/AWU	---	• The number of employed people in the forestry sector used as a proxy of AWU
16- Labour productivity in food industry	GVA per person employed in the food industry	EUR/person	---	• Regional data on "Wages and salaries" is used to approximate the regional GVA of the food industry sector: First, the regional share of "Wages and salaries" of the food industry sector with respect national value is calculated. Later, this regional % is applied to the national GVA of the food industry to obtain the regional GVA value of the sector.
25- Agricultural factor income *(impact indicator 2)*	Share of gross value added at factor cost (factor income in agriculture) per annual work unit, over time	EUR/AWU or index	• Regional factor income in constant price is estimated using national deflators. (This estimation is applied in the database provided by DG AGRI on CCIs to all ExCo members)	• FSS (Farm Structural Survey) data can be used to regionalize ALI (Agricultural Labour Input statistics) national data of AWU: the % that each region represents in FSS national data in AWU is calculated. Later, the regional shares can be applied to the ALI national value of AWU. (This approximation is used in the database provided by DG AGRI on CCIs to all ExCo members)

Common context indicator	Definition/calculation	Units of Measurement	Estimations	Proxy (existing practices)
26- Agricultural entrepreneurial income *(impact indicator 1)*	Standard of living of farmers: agricultural entrepreneurial income (net agricultural entrepreneurial income in real terms) per unpaid (non-salaried) annual work unit Standard of living of farmers: share of the standard of living of employees in the whole economy (based on EUR/hour worked)	Standard of living of farmers: EUR/AWU Standard of living of farmers: **%**	• Regional entrepreneurial income in constant price is estimated using national deflators (This estimation is applied in the database provided by DG AGRI on CCIs to all ExCo members)	• Standard of living of farmers (EUR/AWU): FSS (Farm structural survey) data is used to regionalize ALI (Agricultural labour input statistics) national data of AWU: the % that each region represents in FSS national data in AWU is calculated. Later, the regional shares can be applied to the ALI national value of AWU. (This proxy is applied in the database provided by DG AGRI on CCIs to all ExCo members) • Standard of living of farmers (%): The comparison with the rest of the economy has only been calculated at national level in the database provided by DG AGRI on CCIs to all ExCo members – MAs could apply the same methodology using data available in national and regional data sources
27- Total factor productivity in agriculture *(impact indicator 3)*	Total factor productivity index: ratio between an output index (i.e. the change in production volumes over a considered period) and an input index (the corresponding change in inputs/factors used to produce them)	Index values (2005 = 100) (3 years average)	---	• The national agricultural productivity value used as a proxy of the regional agricultural productivity
29- Forest and other wooded land (FOWL)	Total area of forests and other wooded land (FOWL)	1000 ha and % of total land	• Corine Land Cover could be used to calculate the share of regional forest area with respect to the national area. This share is applied to the national value of forest area (ha) to obtain the regional value.	---

Common context indicator	Definition/calculation	Units of Measurement	Estimations	Proxy (existing practices)
Environmental indicators				
36- Conservation status of agricultural habitats (grassland)	Assessments of agricultural habitats (grasslands) that have a favourable / unfavourable-inadequate / unfavourable-bad / intermediate conservation status	For each type of assessment: - ha - % of total assessments of habitats	• Estimations of regional values can be conducted based on the data provided at the level of biophysical areas	• Further guidance on proxy indicators for this common context indicator will be provided by DG ENV
38- Protected forest	Share of FOWL protected to conserve biodiversity, landscapes and specific natural elements according to MCPFE Assessment Guidelines	% of FOWL area protected under MCPFE classes	---	• Forest area that is classified as protected areas in the region and forest area with a protection purpose included in the Catalogue of Public Forests • Area of forest under forest stewardships • No. of areas and size of Flora-Fauna-Habitat, bird sanctuaries and Natura 2000 areas
40- Water Quality *(impact indicator 11)*	1. Gross Nutrient Balance (4 year average): 1.a) Potential surplus of nitrogen (GNS) on agricultural land 1.b) Potential surplus of phosphorus on agricultural land 2. Nitrates in freshwater 2.a) Groundwater 2.b) Surface water	1.a) kg N/ha/year (nitrogen) 1.b) Kg P/ha/year (phosphorus) 2. % of monitoring sites in 3 water quality classes (high – moderate – low)	---	• The amount of fertilizers applied by UAA (kg/ha) • % of territory designed as vulnerable for pollution by nitrates (as in 2007-2013) • Distribution of sulphate and nitrate in ground water, chemical conditions of the ground water body, biological condition of surface water

Common context indicator	Definition/calculation	Units of Measurement	Estimations	Proxy (existing practices)
41 Soil organic matter in arable land (*impact indicator 12)*	Estimates of Soil Organic Carbon (SOC) stocks in topsoil in arable land: - total SOC stock in top 30 cm of the topsoil - mean SOC concentration (and STD)	- total SOC: megatonnes (Mt) - mean SOC: g/kg	• Estimation of total SOC stock based on the density of different soil textures	• The national value on soil organic matter used as a proxy of the regional value of soil organic matter
42- Soil erosion by water *(impact indicator 13)*	- Soil erosion by water: mean estimated rate of soil loss by water erosion - Agricultural areas at risk of soil erosion by water: estimated agricultural area affected by moderate to severe water erosion (>11 t/ha/yr) and share of total	tonnes/ha/year - ha of total agricultural area and % of total - ha of arable and permanent crop area and % of total - ha of permanent meadows and pasture and % of total	• Data can be estimated using local modelling based on the JRC methodology	• The national values on soil erosion used as a proxy for regional values on soil erosion • The use of the values from the USLE model
43- Production of renewable energy from agriculture and forestry	- Production of renewable energy from agriculture - Production of renewable energy from forestry	kilotonnes (1000 tonnes of oil equivalent, kToe) and % of total production of	• Estimations of regional values can be conducted based on national data	• Share of renewable energy in gross power • Production of renewable energy from Biomass • Share of renewable energy of the total energy production

Common context indicator	Definition/calculation	Units of Measurement	Estimations	Proxy (existing practices)
		renewable energy		
44- Energy use in agriculture, forestry and food industry	- Direct use of energy in agriculture/forestry - Direct use of energy in food processing	For both uses: - total in kilotonnes (1000 tonnes of oil equivalent, kToe) For agriculture: - kg of oil equivalent per ha of UAA	• Estimations of regional values can be conducted based on national data	• Energy consumption in the manufacturing industry
45- Emission from agriculture *(impact indicator 7)*	**1. GHG emissions from agriculture** Total net emissions from agriculture (including soils): - Aggregated annual emissions of methane (CH_4) and nitrous oxide (N_2O) from agriculture - Aggregated annual emissions and removals of carbon dioxide (CO_2), and emissions of methane (CH_4) and nitrous oxide (N_2O) from agricultural soils (grassland and cropland) - Share of agricultural (including soils) in total net emissions **2. Ammonia emissions from agriculture**	1000 tonnes of CO2 equivalents % of total GHG emissions 1000 tonned of	• Estimations of regional values can be conducted based on national data	• Emissions from enteric fermentation as a proxy when cattle production is the main agricultural activity • Total CO2 emissions of Methane, Ammonia, sulphur dioxide, and nitric oxide as a proxy of GHG emissions from agriculture

Common context indicator	Definition/calculation	Units of Measurement	Estimations	Proxy (existing practices)
	Total annual ammonia emissions from agriculture broken down by subcategory: -Synthetic N-fertilizer (4D1a) -Cattle dairy (4B1a) -Cattle NON-dairy (4B1b) -Swine (4B8) -Laying hens (4B9a) -Broilers (4B9b) -All other subsectors (4B2-7 [except 4B5]+ 4B9c,d + 4B13 + 4D2a,b,c + 4F + 4G) -Total agri emissions (4B1-9 [except 4B5] + 4B13 + 4D1a + 4D2a,b,c + 4F + 4G)	NH3		

Source: Helpdesk of the European Evaluation Network for Rural Development using the results of a survey conducted in Jan/Feb/March 2013 and the database provided by DG AGRI at the Expert Committee meeting of 30 March 2013

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