

# Assessment of RDP results under the Focus Area 2A: The application of the counterfactual analysis in Slovakia

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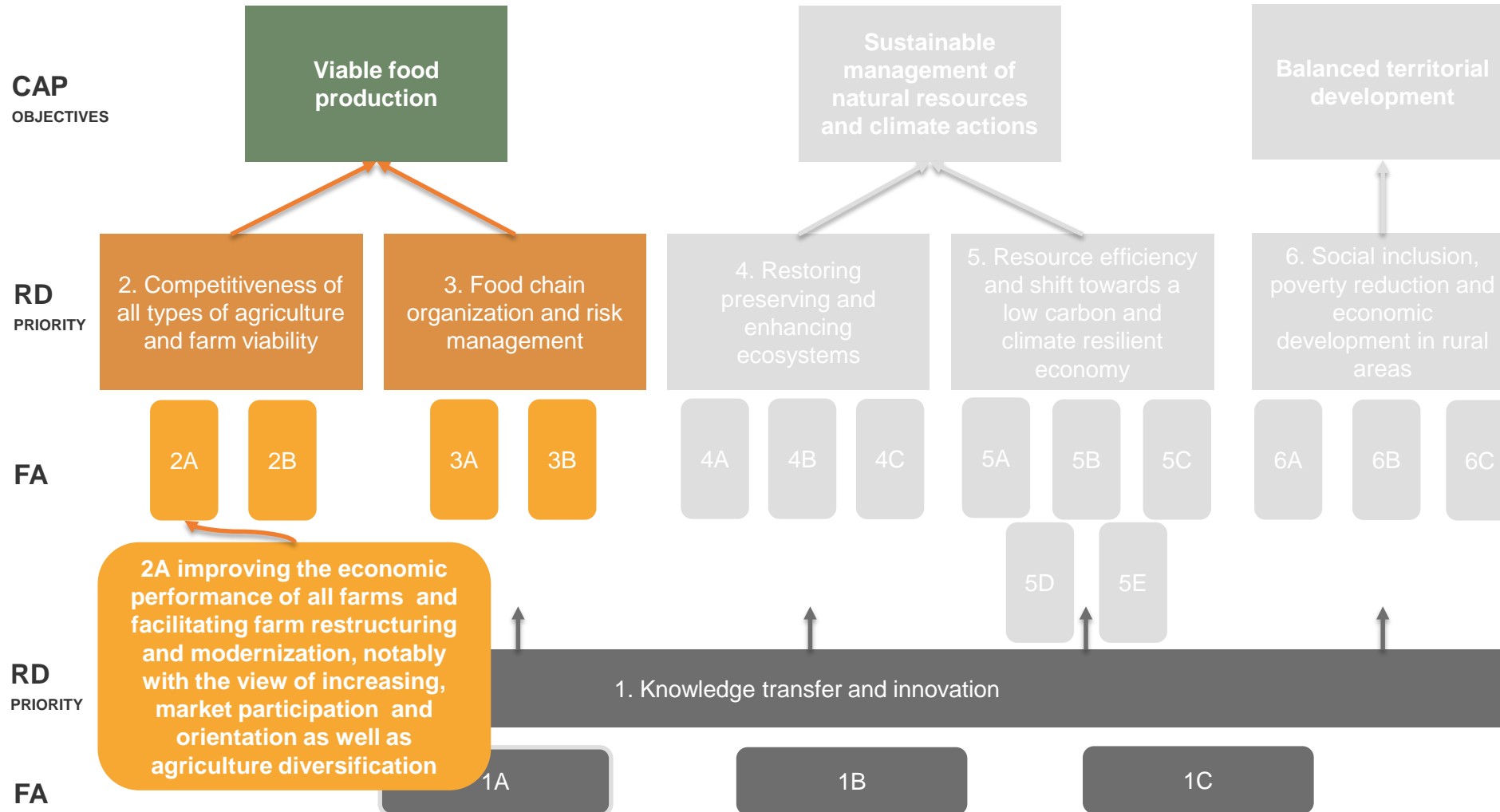
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Consortium:

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Good Practice Workshop:  
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# RD Focus area 2A – the case of Slovakia





## Common Evaluation Question N. 4 related to FA 2A\*

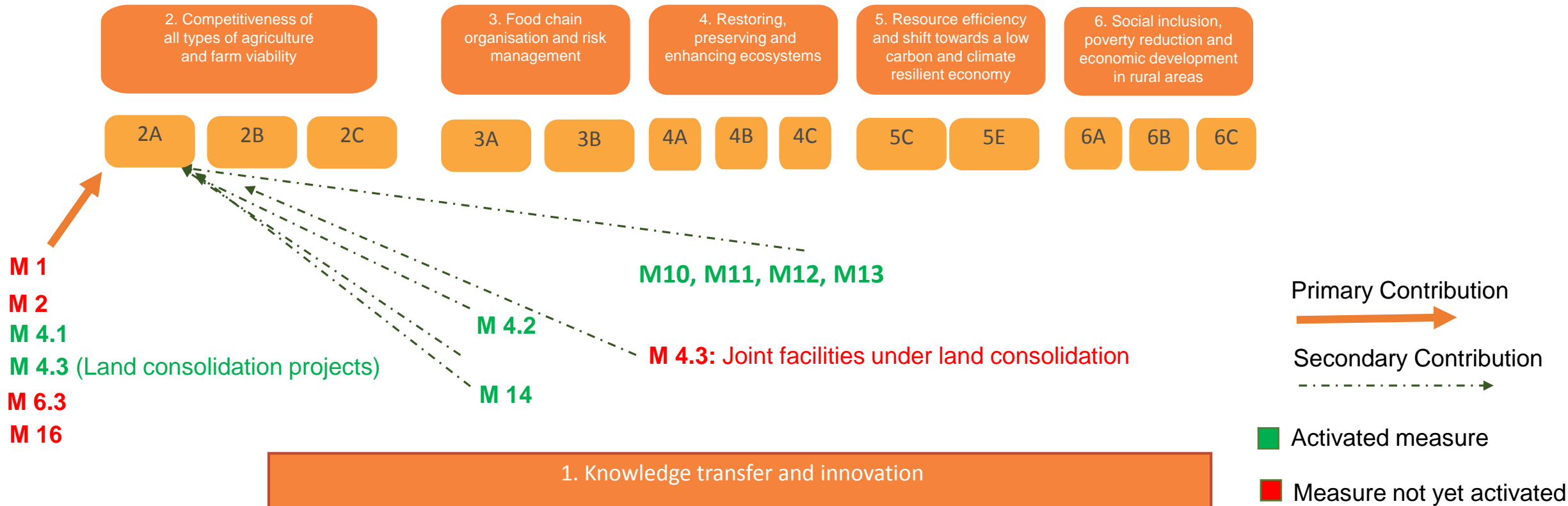
“To what extent have RDP interventions contributed to improving the economic performance, restructuring and modernization of supported farms in particular through increasing their market participation and agricultural diversification?”

\* Annex 5 to Commission Implementing Regulation 808/2014

# Outline

1. RDP design and uptake
2. Planning and preparing the assessment of Focus Area 2A
3. Structuring and Conducting the Evaluation
4. Evaluation Findings
5. Methodological challenges and limits
6. Evaluation report and use
7. Lessons learnt for the AIR in 2019

# 1. RDP design and uptake



## RDP level of uptake:

**Primary contributions (2014-2016):** 51 completed projects → target for 2020: 1.250 supported farms

**Secondary contributions (2014-2016):** 6.127 completed operations

## 2. Planning and Preparing the assessment of FA 2A (1)

### **Oct - Dec 2016:**

- Review of the common evaluation questions together with MA;
- Development of Judgment criteria and additional result indicators together with MA;
- Review of potential approaches for a robust assessment of results;
- Identification of existing data sources + arrange access to beneficiaries and non beneficiaries data
- Revisit ex-ante findings and indirect programme effects;

### **Jan – Apr 2017:**

- Review of finished projects and operations;
- Identification of secondary effects;
- Update of Judgment criteria and additional result indicators;
- Checking the Horizontal and Vertical consistency between objectives, EQ4 and indicators

## 2. Planning and Preparing the assessment of FA 2A (2)

Judgement criteria	Common result indicators	Additional result indicators
Agricultural output per AWU on supported holdings has increased	R2 – change in Agricultural output on supported farms/AWU	
Farms have been restructured		<ul style="list-style-type: none"> <li>• Change in Gross investment in fixed assets/ Agricultural output</li> </ul>
Farms' economic performance has improved due to implementation RDP measures		<ul style="list-style-type: none"> <li>• Change in GVA</li> <li>• Change in Employment</li> <li>• Change in Labour productivity (GVA/AWU)</li> <li>• Change in ratio: costs/revenues</li> <li>• Change in Total capital rentability</li> <li>• Change in Own capital rentability</li> </ul>
Farms' market participation has increased due to implementation RDP measures		<ul style="list-style-type: none"> <li>• Change in ratio: Revenues from sale of goods/ Revenues total</li> <li>• Change in ratio: Revenues from sales of own crops + livestock products/ Revenues total</li> </ul>
Diversification of agricultural activity has increased		<ul style="list-style-type: none"> <li>• Change of production mix</li> </ul>

### 3. Structuring and Conducting the Evaluation (1)

Data sources and data collection tools (secondary and/or primary collected by the evaluator) used to assess results:

1. Operational database of PA for investment measures RDP 2007-2013 and RDP 2014-2020;
2. Regular yearly survey “Information Letters of Ministry of Agriculture” – contains approx. 400 indicators on 2700 farms (covering above 80% of agricultural land and LU in Slovakia);
3. Data for years 2013 and 2016 (available in May 2017) were used – 27 out of 51 farms with completed projects were identified in the database;
4. [IACS](#) database of PA for years 2013-2016 for RDP measures as M10, M11, M12, M13 and M14 etc.



### 3. Structuring and Conducting the Evaluation (2)

A mixed approach was applied:

- 1. Quantitative method:** Propensity Score Matching - Difference in Differences (PSM – DiD) for the calculation of the Common Result Indicator **R2**, as well as other additional result indicators. Effects were measured by comparing farm situation between the years 2013 with 2016;
- 2. Qualitative method:** focus groups (1 structured), interviews with stakeholders (5) for the validation of quantitative findings

### 3. Structuring and Conducting the Evaluation (3)

Steps to apply the Quantitative method: **PSM – DiD** (STATA14)

1. Identification and derivation of covariates for PSM
2. Identification of result indicators (direct and indirect effects);
3. Selection of the best PSM algorithm
4. Calculation of DiD for result indicators and additional result indicators (direct and indirect effects)

# 3. Structuring and Conducting the Evaluation (4)

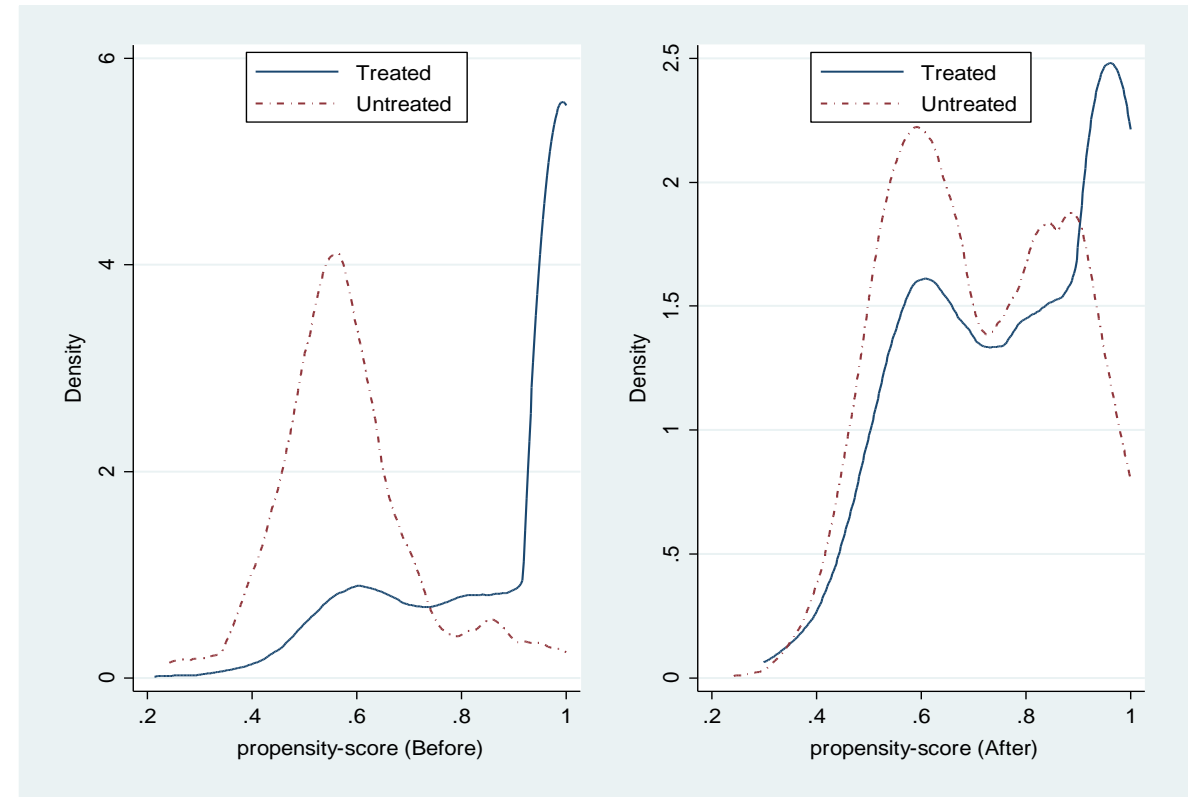
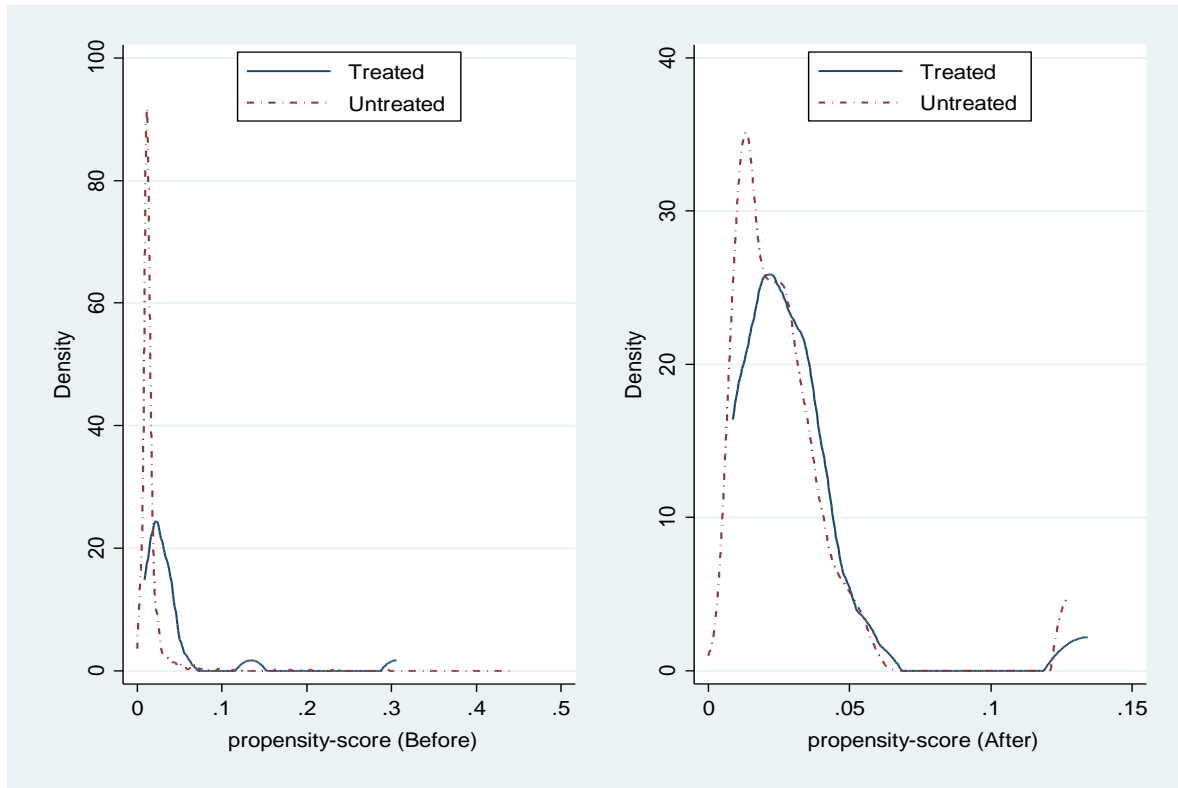
Effects of performed matching (finding acceptable control groups) with **PSM – DID**:

## Primary effects on FA2A:

significant reduction of selection bias -80%

## Secondary effects on FA2A:

significant reduction of selection bias -90%



### 3. Structuring and Conducting the Evaluation (5)

#### Formula used to calculate the gross and net values of R2

$$R2_{Gross\ value} = \left[ \left( \frac{\sum_{n=benef} \left( \frac{AO}{AWU} \right)_{T2016}}{No.\ of\ beneficiaries\ after\ matching} - \frac{\sum_{n=benef} \left( \frac{AO}{AWU} \right)_{T2013}}{No.\ of\ beneficiaries\ after\ matching} \right) * \text{total N of beneficiaries in the country} \right]$$

**R2 Total Gross value = Gross value (primary effects) + Gross value (secondary effects)**

Where:

AO = agricultural output per farm

AWU = employment per farm (in annual working units)

T = year of reference

# 3. Structuring and Conducting the Evaluation (6)

Formula used to calculate the gross and net values of R2

**R2** *Total Net value* =

$$\{R2_{Gross\ value\ PE} - [(\frac{\sum_{n=nonbenef}(\frac{AO}{AWU})_{T2016}}{No.\ of\ non-benefic.\ after\ matching\ PE} - \frac{\sum_{n=nonbenef}(\frac{AO}{AWU})_{T2013}}{No.\ of\ non-benefic.\ after\ matching\ PE}) * total\ number\ of\ beneficiaries\ PE] \}$$

**+**

$$\{R2_{Gross\ value\ SE} - [(\frac{\sum_{n=nonbenef}(\frac{AO}{AWU})_{T2016}}{No.\ of\ non-benefic.\ after\ matching\ SE} - \frac{\sum_{n=nonbenef}(\frac{AO}{AWU})_{T2013}}{No.\ of\ non-benefic.\ after\ matching\ SE}) * total\ number\ of\ beneficiaries\ SE] \} =$$

Where:

PE = Primary Effects

SE = Secondary Effects

## 4. Evaluation findings CEQ 4-FA2A (1)

Indicators	Calculated gross value			Calculated Net value
	Primary contribution	Secondary contribution	Total value	
<b>R2–Change in agricultural output on supported farms</b> (numerator)	186,164 € * 51 = 9.5 Mio €	-16,052 € * 6127 = - 98.3 Mio €	9.5 – 98.3 = -88.8 MIO €	(260,266 € * 51) + (-50324 € * 6.127) = - <b>295 MIO €</b>
<b>R2–Change in AWU</b> (denominator)	-0.85 * 51 = -43 AWU	-1.87 * 6127 = -11457 AWU	-43 – 11457 = -11500 AWU	(0.76 AWU * 51) + (1.78 AWU * 6127) = + <b>10945 AWU</b> (maintained jobs)
<b>R2–Change in agricultural output on supported farms/AWU</b> numerator/denominator	7,204 € * 51 = 0.4 MIO €	15,643 € * 6127 = 95.8 MIO €	0.4 + 95.8 = 96.2 MIO €	(-3,844 € * 51) + (1501 € * 6127) = + <b>9 MIO €</b>

Where:

Agricultural Output = as defined in Annex 11 Fiches for answering Common Evaluation Questions for Rural Development Programs

## 4. Evaluation findings CEQ 4-FA2A (1)

Indicators	Calculated gross value			Calculated Net value
	Primary contribution	Secondary contribution	Total value	
<b>Change in GVA on supported farms</b>	114,627 € * 51 = 5.8 MIO €	13,931 € * 6127 = 85.3 MIO €	5.8 + 85.3 = 91.1 MIO €	(110,152 € * 51) + (-22986 * 6127) = <b>-135.2 MIO €</b>
<b>Change in GVA/AWU</b>	8,908 € * 51 = 0.4 MIO €	3,786 € * 6127 = 23.2 MIO €	0.4 + 23.2 = 23.6 MIO €	(6,900 € * 51) + (427 € * 6127) = <b>+2.9 MIO €</b>
<b>Change in profit on supported farms</b>	-103,232 € * 51 = - 5.3 MIO €	-24,841 € * 6127 = - 152.2 MIO €	-5.3 – 152.2 = -157.5 MIO €	(-35,388 * 51) + (8944 * 6127) = <b>+ 53 MIO €</b>

Where:

GVA = Gross Value Added

## 4. Evaluation findings CEQ 4-FA2A (3)

### Primary contributions:

- Other direct effects:
  - Negative effect on Total Factor Productivity (ratio costs/revenues);
  - Negative effect on total capital rentability;
  - + Positive effect on own capital rentability;
  - + Positive effect on farm restructuring/modernization;

### Secondary contributions:

- Other direct effects:
  - + Positive effect on Total Factor Productivity,
  - + Positive effect on total capital rentability;
  - Negative effect on own capital rentability;
  - Negative effect on farm restructuring/modernization;



## 4. Evaluation findings CEQ 4-FA2A (4)

### **Primary contributions - indirect effects:**

- **Deadweight loss effects:** Substantial negative effect in form of high deadweight loss (85%) in building up of farm assets
- **Leverage effects:** Substantial leverage effects in form of increased farm consumption (increase of salaries on supported farms + 55.138 EUR/farm over 3 years)

### **Efficiency of M4.1:**

- High efficiency achieved in increased Agricultural output: 0.78 EUR was necessary to increase output by 1 EUR

# 5. Methodological Challenges and Limits

- **Main challenges and limits**

- Very low number of finished projects (only 51) under M4.1
- Large proportion of farms supported from various measures
- Short period for appearing effects of the programme;

- **Main solutions taken to above challenges for the AIR 2019**

- The obligation to provide data for survey to the National database “Information letters“ was added to M4.1, M4.2 contracts signed by beneficiaries with PA
- Expected higher number of finished projects by 2019

- **Open issues for 2019**

- The non-supported sample of farms is becoming very small - the plan is to use GPSM (generalized PSM)

## 6. Evaluation Reporting and Use (1)

Conclusion and recommendation drawn from the evaluation findings:

- **C:** M4.1 projects contributed to higher growth in agricultural production, better support efficiency in achieving output growth, better return on total capital, but still negative labour productivity on GVA and high deadweight and leverage effects;
- **R1:** M4.1 projects specialization up to 250,000 EUR support/project
- **R2:** support smaller farms (micro and small businesses) and make support available to new holdings - especially young farmers.
- **R3:** activate M01, M02 to improve worker skills, production processes and marketing

## 6. Evaluation Reporting and Use (2)

### **Reporting and dissemination of the evaluation findings:**

- AIR2016 prepared in SFC format and discussed with Monitoring committee members and policy makers;
- AIR and Citizen summary to be published on the web site of the MA.

### **Follow-up and use the evaluation findings:**

- Improving programme design and implementation;
- Post-2020: discussion on the evaluation findings with policy makers.

## 7. Lessons learnt for the AIR in 2019

- a) Observations and results concerning 2017 will be verified in 2019 to draw more comprehensive conclusions and recommendations;
- b) Necessity to use GPSM (Generalized Propensity Score Matching) in 2019;
- c) Short time for cross-checking by using qualitative techniques;
- d) SFC is a good tool but needs further improvements.

**Thank you for the Attention!**

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