

## **European Workshop on the Evaluation of Farm Investment Support**

### **The Use of Impact Indicators for the Evaluation of Farm Investment Support: A case study based on the Rural Development Programme for Wallonia (2000-2006)**

#### **Introduction**

Rural development in the broad sense, including structural agricultural measures, has been co-financed by the public sector<sup>1</sup> for more than 15-20 years. These public interventions are evaluated throughout the programming cycle (ex ante, mid-term, ex post). For the 2000-2006 period, support to rural development is governed, among others, by Council Regulation (EC) N° 1257/1999 and implemented through Rural Development Plans (RDP) in more than 80 regions of the former 15 Member States.

Evaluation of rural development is mandatory and governed by relevant European legislation<sup>2</sup>. Mid-term and ex post evaluations have to address Common Evaluation Questions (CEQs) that have been developed by the European Commission in consultation with the Member States. Several criteria and indicators are associated with each CEQ. The purpose of such a harmonised approach is to ensure consistent quality standards for evaluations conducted in Member States. Furthermore, it aims to ensure comparable results that can be aggregated at EU-level.

This paper summarises the lessons learnt from mid-term evaluation in Wallonia (1) with respect to farm investment support and the impact indicators used to evaluate its success. Following mid-term evaluation, two separate studies were conducted. The first study (2) raises several questions about the actual value of the selected approach and the appropriateness of the selected indicators for this type of evaluation. A second study was carried out (3) to look into the quantitative link between investment and income improvement making use of accounting data. This second research was complemented by a qualitative survey conducted among a small group of farmers. This paper presents the results of these two studies (2 & 3).

#### **1. Impact indicators and lessons learned from mid-term evaluation**

The overall objective of Wallonia's RDP is to promote sustainable agriculture. Therefore, it aims to increase added value of agricultural products while maintaining production costs of a high quality production process. It seeks to restore professional and social attractiveness of the agricultural profession and wants to support development of environmentally friendly products that respect food quality.

The first measure, support to farm investment, has no particular intervention logic. Investment supports aims to "encourage sustainable productivity". The objectives of the European Regulation have been taken over. Supported investments should improve product quality, "differential quality sub-sectors" are specifically identified. They should also diversify farm

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<sup>1</sup> The public sector includes Community support financed by the EAGGF (European Agricultural Guidance and Guarantee Fund) and EU member states.

<sup>2</sup> Mainly Council Regulation N°1257/1999 of 17.05.1999, Commission Regulation N°1750/1999 of 23.07.1999 and Council Regulation N°1260/1999 of 21.06.1999.

activities, reduce production costs, improve - environmental friendly farming, - working conditions and animal welfare.

Within the framework of evaluation of RDPs, a very large number of criteria and indicators were developed for each measure. The first measure, farm investment support is covered by 7 CEQs, 11 criteria and 17 mostly quantitative indicators.

Mid-term evaluations regarding farm investment support confirmed the relevance of the seven CEQs (7). However, the mid-term evaluation in Wallonia faced important difficulties as to the availability of data and data collection, namely:

- Unclear definition of basic terminology as regards ‘*diversification*’, ‘*improved quality of farm products*’, ‘*environmental friendly farming*’ and ‘*animal welfare*’. This lack of basic definitions thus limits the coherent and consistent collection of this type of data already at the level of monitoring. This is noteworthy given the fact that very detailed definitions exist for all these terminologies, although they are only typically familiar to experts in these areas.
- Several indicators rely on the accounts of agricultural holdings. Although accounts are the only reliable source of information, evaluators do not always have access to them for reasons of confidentiality.
- For some indicators, data has to be collected at the level of recipients through on-farm surveys (interview, sample, case study); the costs of collecting this data were prohibitive if compared to the support received.

The detailed analysis of one main indicator, the “gross farm income (GFI)” highlighted the need for clarifying the methodology in order to get really comparable information that one can aggregate at the EU-level. For example, one needs to consider agricultural holdings as a whole and not by supported investment. One also needs individual accounting data from agricultural holdings. Farm improvement plans can not be considered as a reliable data source. They are forecasted and results oriented (i.e. they have been drawn up with the objective to obtain financial support for investment). Furthermore, a representative period of time has to be taken into account in order to observe an effect of investment on income. All this data also needs to be available for the benchmark group (i.e. non-assisted peers).

This first research showed the difficulties and limits of this type of evaluation that could be called impact appraisal. The answers to CEQs collected by evaluators are generally not quantified due to all the difficulties related to data availability, collection and methodology, even though the indicators and criteria are mainly quantitative. In addition, they are non-harmonised and based on individual approaches that make it impossible to aggregate them at the EU-level. Furthermore, classical evaluation criteria<sup>3</sup> only play a subordinated role against effectiveness and impact on overall objectives in particular.

The research recommended simplifying significantly the evaluation process, in order to obtain reliable and useful results, for all parties involved at regional, national and EU-level. A selection of priority questions at the European level seems essential. For these priority questions for which an EU-level synthesis is required, a small number of key indicators should be identified. These indicators have to be operational and very clearly defined, based on harmonized and comparable data in order to permit a real synthesis at EU-level.

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<sup>3</sup> Especially : Relevance, Efficiency, Sustainability

An additional study was undertaken, in order to check whether the income (amongst others GFI) could represent this type of key indicator. This study also intended to obtain a better understanding of the causal link between investment support and income (amongst others GFI). This analysis was undertaken by the department of economics and rural development in 2005, financed by the Walloon Region. The study was based on accounting data of a representative sample of specialised dairy farms. Investment and farm income were analysed over a 6-year period, from 1998/99 to 2003/2004. This research is summarized under point 2 below.

## **2. Does farm income form a relevant indicator to evaluate investment support?**

A research on the relation between investment (support) and farm income of specialised dairy farms in the Walloon Region was carried out for the period (1998/99-2003/2004). The research was limited to the dairy sector due to its importance in terms of disbursements. Within this sector, investments in dairy units proved to be a particularly interesting case study. Indeed, from 1996-2003, 80% of investment support in the dairy sector concerned dairy units (1 006 files). Only this type of investment was analysed in the study.

### **2.1 Methodology**

Two data sources were used for this analysis, regional accounting data (RWCA<sup>4</sup>) and files from the Administration (Directorate – General of Agriculture, Agricultural Investment Fund). The Walloon Network of Agricultural Accounts (RWCA) currently provides data for the European Farm Accountancy Data Network. It gathers data on some 400-500 specialised dairy farms. The administration provided data files from beneficiaries of farm investment support.

The combination of those two data sources lead to a sample of 50 farms, which invested in dairy units around the year 2000, and for whom uninterrupted accounting data was available over a six-year period, from 1998/99 until 2003/2004.

**The following assumption was stated and was analysed: investment in dairy units and its support improved beneficiary farmers' income.**

#### Definition of a benchmark group

The definition of a benchmark group is essential in the framework of this study, which tries to establish the link between investment support and income improvement.

The following general facts were established for specialised dairy farms in the Walloon Region:

- most farms invest on a regularly bases ;
- most farms are supported in their investment (by the Agricultural Investment Fund<sup>5</sup>) ;
- farms that do not invest disappear. No accounting is available for this latter group.

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<sup>4</sup> Réseau Wallon de Comptabilités Agricoles

<sup>5</sup> The Agricultural Investment Fund (Fonds d'Investissement Agricole) is responsible for managing regional and European investment support to farmers in Wallonia.

The benchmark group should ideally be composed of the average data of about a 2,000 - 3,000 specialised dairy farms in the Walloon Region. However, all these farms do not have accounts. Moreover, accounting data is only available for some 4-500 farms, for regional or European (FADN) networks.

Thus, the benchmark group simply is composed of the average data of some 400-500 specialised dairy farms (OTE 411).

This approach allows to make two comparisons. First, income of beneficiary farms can be compared before and after investment (respectively 1998/99 and 2001/2002 until 2003/2004). Second, income of beneficiary farms can be compared over the 6 year-period to the average group of some 400-500 specialised dairy farms.

### Limitation of this approach

- The time period taken is quite short. Indeed, even by taking this 6 years period, only 3 years of income after investment are available.
- The benchmark group also invests over this period. The sustainability of farms is immediately linked to constant /permanent investment in the production tools.
- The benchmark group does not include accounting data of farms that stop their activity. This key element is thus not taken into consideration through this approach.

Due to these limitations, this quantitative approach has been completed by a qualitative survey among 17 farms of the sample by interviews. This survey tried to assess additional aspects of farm investment support, in particular (1) why do farmers invest, (2) does investment improve their income (according to their individual opinion), (3) if investment does not improve income, why do farmers invest, (4) to which extend the support does or does not play a role in the decision to invest and finally (5) how this support is perceived by beneficiaries.

## **2.2 Results from quantitative analysis**

Two approaches were used to assess the assumption whether investment in dairy farms, and its support, improved the farmers' income.

- a) Yearly income of the sample before and after investment (t-test<sup>6</sup>)

A Student's t-test has been applied to compare yearly income before and after investment in a dairy unit for the sample of 50 dairy farms. The null hypothesis was that means before and after investment were the same. The outcome of the test was the acceptance of the null hypothesis at alpha 5% (level of significance).

Yearly average income of the sample before and after investment revealed to be the same. The mean income has not changed after investment. Regarding this result, one must emphasize the short time span available (only three years after investments were made) and the small size of the sample (50 farms).

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<sup>6</sup> Student's t-test for paired data was applied. The same sample is measured twice, once before and once after investment.

## b) Comparison of the sample and the benchmark group

The sample of 50 farms was compared to the benchmark group for several indicators over the 6 year period from 1998/1999 to 2003/2004. Main indicators were the following: area (hectarage), dairy quota, labour unit (UT), income. Regarding income, four different income indicators were used, namely gross farm income (GFI) and farm income, income per labour unit, income per livestock unit. All these indicators are shown in table 1.

Table 1: Comparison of various indicators of the sample and the benchmark group over the 6-year period

		1998/1999	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004
Sample of 50 farms (investing in dairy units in 2000)	Area (ha)	47	48	48	49	50	50
	Dairy quota (l)	376 450	399 879	387 952	393 099	399 118	406 201
	Labour Unit	1,58	1,57	1,53	1,54	1,50	1,47
	GFI (€)	90 992	90 696	95 313	97 995	87 633	89 728
	Farm Income (€)	66 930	63 034	66 271	69 982	58 637	61 151
	Income/Lab.Unit (€)	43 544	40 500	43 734	46 927	39 927	42 437
	Income/Livestock Unit (€)	698	619	735	765	637	664
Benchmark group (450 to 500 farms)	Area (ha)	44	43	46	47	48	50
	Dairy quota (l)	329 668	347 321	349 064	361 557	367 748	374 700
	Labour Unit	1,50	1,49	1,51	1,49	1,47	1,48
	GFI (€)	78 013	77 545	83 662	85 611	77 244	81 082
	Farm Income (€)	56 546	53 617	60 479	62 795	54 661	57 884
	Income/Lab.Unit (€)	38 107	36 185	40 575	42 888	37 784	39 966
	Income/Livestock Unit (€)	639	578	711	720	640	649

GFI = Gross Farm Income

The economic size and the productivity of the sample are higher than that of the benchmark group. Area, dairy quota and labour unit of the sample are significantly higher compared to the benchmark group before investment (1998/1999), and much higher than the average of dairy farms in the Walloon Region<sup>7</sup>. The same is true for the four income indicators that have been considered.

Over this 6 year period, the gap between the two groups has narrowed significantly. They end up with the same area, and almost the same labour unit. The decrease in labour (expressed in labour units) is much more important for the sample than for the benchmark group.

Regarding income indicators, the difference between the sample and the benchmark group is decreasing over this period. It remains significant regarding gross farm income (GFI). Farm income of the sample, compared to the benchmark group was some 10,000 € higher before investment. The difference narrowed down to some 3,300 € three years after investment. Productivity, measured by income per labour unit was some 5,400 € higher for the sample before investment and only half of it, (2,470 €) three years after investment.

The comparison of the sample to the benchmark group does not show a more positive evolution of the indicators for the sample over this period. On contrary, initial difference between the two groups is narrowing down over this period.

<sup>7</sup> Average of milk quota is 198 000 l in 2004 for some 6 300 dairy farms (Confédération belge de l'industrie laitière).

## 2.3 Results from farm survey

The field survey carried out among 17 farmers stresses the importance of qualitative factors related to the decision to invest in a dairy unit. The impact of this type of investment on working conditions is undeniable. The opinions of the farmers underlined the following points:

### a) Impact on farm income

The strategies developed by individual farmers, including the decision to invest, were not directly taken in order to improve the income or to generate more value, but much more to improve working conditions.

### b) Impact on working conditions

The investment mainly allowed the improvement of working conditions. More precisely, the opinions collected underline the following aspects:

- important time saving for milking,
- improvement of the quality of the care given to the animals and of their monitoring,
- a decrease of the workload related to foddering,
- less stress for the animals related to the improvement of their wellbeing and thus more facility to manage the herd.

### c) Impact on the sustainability of the farm

All farmers underlined the fundamental role of investment in order to maintain a competitive and sustainable holding. In addition, all farmers also mentioned that support was insufficient, especially in the cases of setting-up of young farmers.

### d) Impact of the support on the decision to invest

The effect of support on the decision to invest varies. Nevertheless, support does not launch an investment which would not have taken place without support. In general, the subsidies in interest rates do nothing but accelerate or amplify an already existing project.

The type of support, subsidy of interest rates, remains interesting in its principle for the large majority of farmers, although the differential of rate is not very significant as interest rates are low. The support reassures the banking partners.

## Conclusions

A first research that followed mid-term evaluation recommended a significant simplification in the evaluation procedures. It suggested the use of a small number of key indicators. The question was raised whether income indicators, especially gross farm income could be such a key indicator at EU level.

The quantitative research showed little evidence of a causal link between investment and improvement of income. We note however that the time span used is short and no data was available for a relevant benchmark group.

The main impact of farm investment is to maintain the farm activities, but not necessarily to improve income. It appeared that it mainly improved working conditions and indirectly productivity, because less labour is needed for the same tasks.

Hence, income indicators do not seem to be relevant indicators to measure the effect of investment support, under the conditions of evaluation (short time span, no relevant benchmark group with accountancy data, ..). Indeed, the research showed, that under these conditions, no direct link between investment and improvement of income can be found.

However, this should not lead to the conclusion that investment support is useless or not effective. Investment and its support are essential for the sustainability of farms. Farms that are operating as a going concern are investing on a permanent basis, in order to stay competitive and to be able to respect relevant environmental and quality standards, and providing attractive working conditions.

## References

(1) ADE. (2003). *Plan de développement rural wallon. Evaluation à mi-parcours. Rapport final.* Namur : Ministère de la Région wallonne, Direction générale de l'Agriculture.

(2) BECK, M. (2004). Analyse critique des indicateurs d'impact utilisés dans l'évaluation des programmes de développement rural mis en œuvre au sein de l'Union européenne à partir de l'évaluation à mi-parcours de la première mesure du plan wallon de développement rural (2000-2006). Mémoire de fin d'études. Faculté universitaire des Sciences agronomiques de Gembloux : Gembloux.

(3) BRUWIER C., DOGOT T., MATENDO S., LEBAILLY Ph. (2005). *Evaluation de l'impact du Fonds d'Investissement agricole sur le revenu des agriculteurs en Région wallonne.* Conseil Supérieur Wallon de l'Agriculture, de l'Agro-Alimentaire et de l'Alimentation.

(4) Cabinet du Ministre wallon de l'Agriculture et de la Ruralité (2001). *Plan wallon de développement rural 2000-2006.* Namur : Fabienne Demarcin, Cabinet du Ministre wallon de l'Agriculture et de la Ruralité.

(5) European Commission, Agriculture Directorate-General. (2000). *Common evaluation questions with criteria and indicators. Evaluation of rural development programmes 2000-2006 supported from the European Agricultural Guidance and Guarantee Fund.* Document STAR VI/12004/00 Final. Brussels : European Commission.

(6) European Commission, Agriculture and Rural Development. (2003). *Rural Development in the European Union.* Luxemburg: Office for Official Publications of the European Communities.

(7) Institut für Betriebswirtschaft, Institut für Ländliche Räume, Institut für Marktanalyse und Agrarhandelspolitik. (2004). *Zwischenbewertung der Programme zur Entwicklung des ländlichen Raumes nach der Verordnung (EG) Nr. 1257/1999- Erfahrungsaustausch und Verbesserungsansätze.* Braunschweig : Bundesforschungsanstalt für Landwirtschaft.