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# A multicriteria model for the assessment of rural development plans in Greece

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ABSTRACT

In the last decades rural communities face the problems of ageing of population, high share of elder farmers and imbalanced distribution of farmers across age classes. The Rural Development Plans (RDPs) of Common Agricultural Policy (CAP) in European Union (EU) are the policy instruments that affect agriculture and the people living in rural areas. The RDP measure "Setting up Young Farmers" aims to fight the demographic problems of these areas. This study is an attempt to highlight the role and the impacts of RDPs and especially of the "Setting up Young Farmers" measure in the prefecture of Thessaloniki in Greece. To this end, a multicriteria mathematical programming model was implemented. This methodology was chosen using the Knowledge Brokerage Approach in the context of the LIAISE project, which proposes a set of support modules that are linked to the impact assessment process with a final goal to support future policies and design. The results showed that the "Setting up young farmers" measure achieved its goals to transfer land to young, trained farmers, to offset the set-up costs faced by young people when establishing themselves in farming.



## Introduction

In the last decades many new issues have emerged in rural communities such as ageing of population in rural areas, liveliness of rural areas, residential use of farms, unfavourable age structure, the high share of elder farmers and the imbalanced distribution of farmers across age classes. Ageing of population in European Union (EU) rural areas raise the issue of "greying" society in connection to the liveliness of rural areas and the residential use of farms (Nikolov et al., 2012). According to European Commission (EC/COM, 2010) "the vitality and potential of many rural areas remain closely linked to the presence of a competitive and dynamic farming sector, which is attractive to young farmers". In order to correct all these age imbalances EU gives many opportunities for its member states by support measures co-funded under the Common Agricultural Policy (CAP). The CAP is the main policy instrument that affects agriculture and the economy of rural areas of the EU. CAP is structured in two complementary pillars, with annual direct payments and market measures making up the first and multi-annual rural development measures the second pillar (EC/COM, 2010). The Rural development Plans (RDP) aim at promoting competitiveness, the sustainable management of natural resources, and the balanced development of rural areas by more specific and targeted measures (EC, 2005). RDPs give to the member states the flexibility to address the issues of most concern within their respective territory with co-financing (EC/COM, 2010). Every member state applies a National Rural Development Plan (NRDP) which must be based on EU Strategic Guidelines (EC, 2005). The most important measure of RDP that targets young farmers, is "Setting up young farmers" (measure 112). The Setting up of young farmers' measure has been included in NRDPs in the majority of Member States in the last two programming periods 2000–2006 and 2007–2013.

The Setting up Young Farmers measure supports the entry of young persons into the agriculture sector and aims to fight the demographic problems of rural areas (EC, 2005). This measure provides for a one-off grant to be paid to trained farmers between the ages of 18 and 40 who have been set-up in farming for the first time (Department of agriculture fisheries and food of Ireland, 2009). Many EU Member States also have a different age limit as opposed to the 40 years in Greece (Ministry of Agriculture and Food, 2007).

A traditional argument connected to RDP measures is the issue of maintaining economically vital rural communities, particularly in rural areas where alternative income opportunities were limited. However, a full range of new issues has emerged. Farm size and its change over time are the main aspect of farm structure that the literature connects to "setting up young farmers" measure. Land markets become important in this perspective as farmland acquisition and entry-exit from the market determine changes in farm structure intended as physical size (Ahearn et al., 2005). The Setting

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**Table 1**
LIAISE IA support modules used in "Setting up Young Farmers" study.

| Support modules | Phases | Setting Up Young Farmers |
|---|---|---|
| 1) Test case formulation and scheduling | Formulation Phase | Applicable |
| 2) Identification of test case team and target groups | | Applicable |
| 3) Policy storylines | Scoping and planning phase | Not applicable |
| 4) Identifying impact areas and scales | | Partly applicable |
| 5) IA scoping and planning | | Not applicable |
| 6) Tools selection and technical specification | Instrumental phase | Applicable |
| 7) Indicators, data requirements and sources | | Applicable |
| 8) Tool implementation: analysing impacts | Conceptual learning phase | Not applicable |
| 9) Reflection and evaluation | | |

*Source*. Modules for IA support (LIAISE, 2011).

up Young Farmers measure aims to renew the age composition of the rural population and to improve the structure of their farms (Aggelopoulos and Arabatzis, 2010). It has also indirect impacts by supporting rural employment and maintaining the social fabric of rural areas. RDPs also affect the rural economy and by promoting diversification to enable local actors to unlock their potential and to optimise the use of additional local resources (Manos et al., 2013). Finally, there are many impacts in the structural diversity of the farming systems, by improving the conditions for small farms and developing local markets, because in Europe, heterogeneous farm structures and production systems contribute to the attractiveness and identity of rural regions (EC/COM, 2010). According to Bartolini and Viaggi (2013) structural change provides the possibility of increasing the competitiveness and efficiency of the farm households.

Assessment of the Rural Development Plan regionally will help in re-addressing the CAP in the wider framework of EU policy objectives. In this context, this paper focusing on assessing the impacts of "Setting up Young Farmers" RDP measure at regional scale. The study was carried out in the prefecture of Thessaloniki in Greece and is an important pilot process enabling the regional authorities to design, develop and implement IA for their regional policies. The research tries to measure the impacts of "setting up young farmers" measure ex-post. This research is part of a suite of cases studies which was developed under the LIAISE network of excellence (Linking Impact Assessment Instruments to Sustainable Expertise).

The paper is organised as follows. In the following section, the "Setting up Young Farmers" RDP measure is presented. The methodology approach which includes Knowledge Brokerage Approach and MCDA model is provided in 'Results' section. The last two sections contain the results of the analysis and some concluding remarks.

## Methodology approach

### *Knowledge Brokerage Approach (Kba)*

LIAISE network of excellence developed a coherent suite of case studies of different jurisdictions and policy fields. For this reason the methodology of Knowledge Brokerage Approach was selected. According to Canadian Health Services Research Foundation (2003) Knowledge brokerage (KB) is about knowing what knowledge exists, who owns that knowledge, and how that knowledge can be best exchanged among stakeholders and decision-makers. Knowledge brokering has gained increasing importance among all the strategies proposed in the scientific literature to increase knowledge utilisation during the last decade (Ziam et al., 2009). In order to ensure consistency across case studies, LIAISE proposed a set of support modules (SMs), which are linked to the impact assessment process with final goal to support future policies and design. The IA Support Modules have a dual role: (1) they provide a research infrastructure in the form of temporary Support Modules during the implementation of case studies, and (2) they help structure future interaction processes between researchers and policy-makers, for example, helping facilitate use of long-term IA Toolbox developed by LIAISE WP4. The modules also provide a framework for assessing the most appropriate KB strategy to use. They also include the crucial aspect of evaluation of the KB approach – how KB worked, what factors influenced it and how effective it was (Ward et al., 2009). The Support module approach fitted quite well with this study. In this research a set of support modules based on an improved understanding of long-term socio-economic mechanisms of change in rural areas, were applied. The focus was on the interface between "Setting up Young Farmers" RDP measure in rural economy, adopting prefecture as the reference agent in the connection between policy and socio-economic change. The state of the art about the study policy impacts intersects some specific issues dealt with setting up young farmers RDP measure. This research focused on economic, social and environmental impacts (Table 1).

The selection of the appropriate tools for this study was made according to the specific needs of policy makers (after interviews), the LIASE toolbox and the availability of data and tools already used for similar studies. A special attention was also given on impact scales and impact areas. The main tools selected were Simple tools and Multicriteria Decision Analysis:

- Simple tools. Tools that can give answers when estimating impacts in a simple way e.g. indicators linked to surveys and questionnaires in order to reflect young farmers' perceptions of rural areas where they live. In this context Economic, Environmental and Social Indicators were measured in order to assess the impacts of the measure (Table 2).
- MCDA model. An MCDA model combines different criteria to a utility function under a set of constraints concerning different categories of land, labour, available capital, etc. The

**Table 2**
Economic, environmental and social indicators that are used.

| Economic impact | Environmental impact | Social impact |
|---|---|---|
| Farm income (Family farm income) (€) | Fertilizers use (kg/ha) | Labour use (h/ha) |
| Farm income (Gross added value) (€) | Water use ($m^3$/ha) | Annual work unit (AWU) |
| Gross revenue (€/ha) | | |
| Variable cost (€/ha) | | |
| Gross margin (€/ha) | | |