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Pictures in the cover page represent investments in land (top left), machinery and equipment (top right), building (bottom left) and training (bottom right).
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Abstract

The present study aims to analyse farmers' intentions to invest in the period 2014-2020, focussing on investments in land, buildings, machinery and equipment, training, and quotas and production rights. It provides up-to-date information on EU farm investment patterns that is not otherwise available in traditional agricultural statistics (such as Farm Accountancy Data Network or the Eurostat Farm Structure Survey). Use of the data in this study contributes to the general understanding of the determinants of investment decisions and farmers' reaction to EU Agricultural policy.

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Disclaimer

The views expressed are purely those of the authors and should not in any circumstances be regarded as stating an official position of the European Commission.

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Abbreviation list

CAP: Common Agricultural Policy

CZ: Czech Republic

DE: Germany

EAFRD: European Agricultural Fund for Rural Development

ES: Spain

EU: European Union

EU-15: 15 Member States belonging to the European Union before 2004 (Germany, Belgium, France, Italy, Luxembourg, Netherlands, Denmark, Ireland, United Kingdom, Greece, Spain, Portugal, Austria, Finland and Sweden).

EU-N10: 10 New Member States in 2004 (Cyprus, Czech republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia)

FADN: Farm Accountancy Data Network

FR: France

FSS: Farm Structure Survey

II: Intention to Invest

IT: Italy

LSU: Livestock Units

NUTS: Nomenclature of Territorial Units for Statistics

PL: Poland

RD: Rural development

RDP: Rural Development Payments

SAP: Single Area Payment

SFP: Single Farm Payment

UAA: Utilised Agricultural Area

Executive summary

The present study aims to analyse farmers' intentions to invest in the period 2014-2020, focussings on investments in land, buildings, machinery and equipment, training, and quotas and production rights. It provides up-to-date information on EU farm investment patterns that is not otherwise available in traditional agricultural statistics (such as Farm Accountancy Data Network or the Eurostat Farm Structure Survey). Use of the data in this study contributes to the general understanding of the determinants of investment decisions and farmers' reaction to EU Agricultural policy. However, it should be noted that given the limitations of the sample, the data cannot be used to predict farm investment in the EU-28 over the period 2014-2020, nor to evaluate to what extent Common Agricultural Policy (CAP) payments stimulate investment in EU farms.

Methodology

The data were collected in spring 2013, through face-to-face interviews. The survey covers 780 farm-households in six EU countries (Czech Republic, Germany, Spain, France, Italy and Poland), four different farm specialisations (arable crops, livestock, perennial crops and mixed farms), as well as different farm sizes.

A cluster-sampling procedure was used to select the farms. Three to four NUTS2 regions were selected per farm specialisation in each of the six countries. The sample was then selected at random, within those regional farm type cells, from a list of farms developed by the survey company 'Gfk'. Each observation was weighted in order to account for potential disproportionate stratifications and non-responses. Despite the adjustments, however, it must be noted that the weighted sample remains non-representative of the EU farm population and is biased toward larger farms and younger farmers compared to the actual general farm population of the six countries covered by the study. This study can be seen to focus on the more active farmers, as these are more likely to have interesting investment behaviours.

The methodology selected to analyse the farm investment foreseen in 2014-2020 involved development of an 'intention survey', followed by an analysis of the results, as previous empirical research has shown that 'stated intentions' are a reasonably good approximation of 'realised actions' in the case of farm investments. Moreover, intention surveys offer other advantages, such as revealing a farmer's frame of mind and expectations about the evolution of their environment and their business confidence, which are otherwise difficult to capture.

To capture the data, a questionnaire was developed. The first part of this questionnaire concerned the farm assets, including land, buildings, machinery and equipment, training, and quotas and production rights. Details requested included purchase year, purchase value, and plans to sell, replace or renovate the asset. The second main part of the questionnaire included questions on farmers' intentions to invest in the period 2014-2020. More details on the cost of the investment, the planned date of the investment, the ways of financing this investment, and the reasons for investing or not investing were also collected. Beyond the farmers' intentions to invest, data on the potential determinants of investments on the farm were also collected.

The survey results are presented in this report. Differences can clearly be seen between the characteristics of the farms and farmers intending to invest in the period 2014-2020 and those not intending to invest. The report also includes updated information from the current literature on the role of various factors that influence investment decisions.

Main results

Intentions to invest in 2014-2020: 56% of the farmers surveyed intend to invest in the period 2014-2020. Overall, 40% of the farms planned to invest in machinery and equipment, while investment intentions in land, buildings, training, and quotas and production rights among farmers intending to invest are less frequent (21% in land, 20% in buildings, 16% in training, and 3% in quotas and production rights). Most farmers intend to invest in several types of assets over the period 2014-2020. 28% of the farmers only intend to invest in one asset. The main benefits expected from the investments foreseen in 2014-2020 are improved working conditions on the farm and an increase in production quality. Interestingly, cost reduction and an increase in production quantity are not as often cited.

Financing investment: Farmers intending to invest mainly envisage using farm resources as the major source of funding, and only rarely do they envisage relying mainly on bank loans and/or subsidies. A 3% minority of the investments planned in land, buildings, and machinery and equipment

will be funded mostly via off-farm revenues. Furthermore, a lack of financial resources does not appear to be the main limitation to investment, indeed, 43.5% of the farmers showed no intention to invest during the 2014-2020 period; the main reasons being: (i) the uncertain expected returns on investment, and (ii) their lack of need for new assets.

Despite the fact that very few farmers declared relying exclusively on investment subsidies to finance their investment, many of them did admit to applying for investment support. Indeed, around a quarter of the farmers surveyed admitted to having applied at least once to rural development investment support measures in the period 2008-2012, with the large majority of these applications concerning the '121-modernisation of farm holdings' measure, with most aiming to finance investments in machinery and equipment. Here, the number of applications and the average success rate for applications varied quite substantially according to countries, but, generally, the average success rate was high (89%). 41% of the farmers relied on credit, which was mostly used to finance investment (76%) rather than to cover consumption and general expenditures.

Heterogeneity in the patterns and determinants of investment behaviours across countries and farm types: Amongst the surveyed countries, we found that Italian farmers stated they were less likely to intend to invest than others in 2014-2020 (28%), while French and German farmers are the most likely to invest (67% and 76%, respectively). Farmers with intentions to invest have significantly larger farms in terms of utilised agricultural area (UAA). Moreover, we observed that the largest farms (i.e. those above 50 hectares or 50 livestock units (LSU) for livestock and mixed farms) have a greater intention to invest. We also observed differences in the intentions to invest by specialisation, with the respective values being 65% of the arable crop farmers, 54% of the livestock farmers, 49% of the perennial crop farmers and 56% of the farmers with mixed productions. We found land investments are most often planned by mixed farms, while livestock farms most often foresee investing in buildings, and arable farms most often plan to invest in machinery and equipment and in training.

The importance of individual and behavioural factors, beyond the farm structure, in shaping investment intentions: A farmer's future perspective appears to be crucial for their decision to invest. Intentions to invest are clearly influenced by the head of farm's expectations concerning the continuation of farming activity. Furthermore, we observe that farmers who are certain that they have no successor are less likely to invest, whereas uncertainty on succession does not seem to deter investments. However, conversely, we did not observe that the presence of a successor increases a farmer's intention to invest.

While environmental attitudes do not seem to play a role in explaining intentions to invest, we observed that the group of farmers intending to invest are more likely to have positive attitudes towards innovation and to follow good farm management practices, such as obtaining professional advice, regularly testing their equipment, having agricultural insurance or selling their production on contracts.

The influence of farm strategy: Farmers' investment strategies were found to be 'path dependant', in that farms with no historic expansion and modernisation strategy currently have limited investment plans, while 79% of the farmers currently intending to invest have also invested recently. Farmers who invested recently are more likely to intend to invest again (compared to those who have not invested recently), both in the same asset class and for other assets. Moreover, the average value of the investments realised in 2008-2012 was significantly higher for the farmers intending to invest again compared to those who do not intend to invest. However, for investments with longer lifespans and amortisation periods, such as investments in land or buildings, only a minority of the farmers that invested recently are intending to invest again.

The role of CAP payments: We found that CAP beneficiaries (of both direct and rural development (RD)) are more intending to invest and the others. However, our results are insufficient to draw a causality link between receiving these payments and investing. However, in the growing literature on the impact of CAP payments on farm investment, it is usually assumed that direct payments may favour investment by two main channels: (i) by reducing the risk profile of income streams and as a result increasing farmers' willingness to take risky production decisions, including on investments; and (ii) by relaxing credit constraints in the presence of capital market imperfections. Moreover, RD investment support promotes investments that otherwise would not have been undertaken (the principle of 'additionally'), e,g, because the cost is too high and/or the farmer has limited access to credit. One important complementary observation we have made is that a majority of farmers declared being dependent on the maintenance or increase in CAP payments (both direct payments and investment subsidies) to maintain their intentions to invest. However, a number of farms showed that they were indifferent to the CAP (i.e. they declared that they would invest whatever the level of direct payment or investment subsidies available in the region, and in particular even if payments decreased).

Recommendations

The high heterogeneity in the investment intentions of farmers observed across countries, farm sizes and farm specialisations confirms the need for context-specific policy instruments to support investment. This is in line with the new CAP, where the flexibility offered to Member States and regions to define the share of budget for investment support and to adapt the implementation rules of Rural Development (RD) measures (e.g. type of support, eligibility criteria) to local needs has been reinforced.

More specifically, our results allow proposing a few recommendations. Current CAP investment support schemes based on a one-time grant financing a share of the investment or on subsidised interest rates allow a relaxing of the budget constraints and, as a secondary effect, reducing the downside risk by reducing the actual investment cost. However, the farmers we surveyed declared that uncertain returns on investment are a greater obstacle to investment than the lack of financial resources. This suggests that instruments specifically designed to reduce the risks associated with investing would be well received by farmers. Indeed, loan guarantees, activated only when farmers have difficulties reimbursing their loans, are already in place in some Member States (e.g. Belgium, Germany, Poland, and Spain) but may be further encouraged.

Given the role of attitudes towards innovation, another issue that needs attention is the connection between innovation measures and investment measures. The link between the modernisation of agricultural holdings (as supported under RD policy 2007-2013) and innovation in the farming sector should be more clearly addressed in the CAP. A specific issue to address here is a better connection between farm modernisation and the sector/chain/network innovation strategy.

We observed a path dependence of farm investment strategies: farmers intending to invest are largely the same as those who invested recently. This suggests that investment support restricted to farms with on-going modernisation and expansion strategies may have limited effects, given that these farms may invest even without support. The selection criteria of investment projects already often include the socio-economic characteristics of the farms, such as economic size (e.g. minimum revenue per annual work unit), the farmer's age, or the location of the farm (e.g. maximum support rates can be increased for young farmers and for areas facing natural constraints). One could also imagine giving priority to farmers who have not received investment support recently. While this should not go against the principle of best use of financial resources by selecting the best projects, we could imagine to establish a limit on the number of times that a beneficiary can receive support under the measure (e.g. 3 times for the whole programming period). This would indirectly favour the new applicants by removing from the candidates' pool the farmers experimented in setting-up subsidy applications. Similar eligibility conditions are already in place in the local implementation rules of some RD programmes.

More generally, RD programmes may gain by including clear statements on their objectives, focussing on one of the following ideas: (i) giving priority to the types of support farmers are more likely to find profitable to invest, therefore creating higher potential value-added for public money in terms of economic return; (ii) focussing on farmers less likely to invest and modernise their farm autonomously, with a subsequent higher return for the agricultural policy in terms of compensatory and equal opportunity effects, but potentially at the expense of economic returns; (iii) supporting a diversity of potentially relevant modernisation pathways, in various sectors, even if their future profitability is uncertain, in order to maintain the diversity and resilience of the agricultural sector.

The report concludes with recommendations for further research to support evidence-based policymaking in the field of farm investment. If the objective of such a further study though is to collect up-to-date information on investment intentions, the sampling methodology should be revised, together with enlarging the sample, to achieve a true representative sample of the EU's main farming systems and regions. The possibilities of running this survey over the phone or online and also reducing the length of the questionnaire should also be evaluated. If instead the objective of such a further study is to evaluate the role of the CAP in fostering investment and to provide clear recommendations on the design of specific policy measures, an approach based on the evaluation of case studies could be more relevant. This would allow better accounting for the specificity of the local implementation of such measures and for comparing performances, including the evaluation of their net impact.

1 Introduction

Farm production is a function of several inputs, including the current level of capital (buildings, machinery and equipment, land), which depends on past investment decisions. Any policy supporting investment will therefore influence farm output for some years into the future. The renewal and evolution of farm assets is also an important driver of structural change in farming. Farm investment support is an essential component of the productivity and sustainability enhancing strategy within the Common Agricultural Policy (CAP) in the EU. From a policy perspective, this raises two main questions: to what extent CAP support stimulates investment? And how can the support be targeted towards those farms and investments for which the impact of support will be highest?

The present study aims to contribute to the thinking related to the two questions above.[1] Particularly, the objective is to provide up-to-date information on a sample of EU farms' intentions to invest in the coming CAP programming period (2014-2020). This will contribute to the understanding of the factors underlying and directing farmers' intentions to invest. This is a prerequisite to answer the two aforementioned questions, and more generally for the successful formulation of CAP policies.

The contribution of this study is threefold. First, the survey provides *ex ante* data on investments likely to be realised in the period 2014-2020, while most studies focus on the determinants of investments already realised (Buysse, Verspecht et al. 2011; Esposti 2011; Ferto, Bakucks et al. 2011; Kirchweger, Eder et al. 2011; Vesterlund Olsen and Lund 2011). Second, the survey covers intentions to invest in various on-farm asset classes (land, machinery and equipment, buildings, training, quotas and production rights), as well as on farms and farmers' characteristics. Last, and to the best of our knowledge, the study presented here is one of the very few cross-country and cross-farm specialisation studies on on-farm investment. Most studies on the determinants of farmers' investment decisions have focused on one country and/or on one farm specialisation (Oude Lansink, Verstegen et al. 2001; Gardebroek and Oude Lansink 2004; Oskam, Goncharova et al. 2009; Vesterlund Olsen and Lund 2011; Sauer and Zilberman 2012; Fałkowski 2013). Guastella et al. (2013) conducted a multi-country study (France, Germany, Hungary, Italy and United Kingdom) on investment demand for farm buildings and machinery and equipment, but restricted this to specialised arable crop farms. A recent survey does provide recent and multi-country data on farmers' intentions to invest (DLG Trend monitor Europe 2013). This survey has the advantage of being updated twice a year and covers a large sample of 2350 farmers. However the sample is biased towards large 'business-minded' farmers in Europe, and is restricted to four countries (Germany, Poland, France and United Kingdom). While our sample, albeit limited to 780 farms, contributes to the understanding of EU farmers decisions in a broader and more diverse range of farms and farmers' situations.

The survey presented in this report is the third exercise on farm investment conducted by JRC-IPTS in cooperation with other research institutions. In 2006, JRC-IPTS started, in agreement with Directorate-General for Agriculture and Rural Development (DG-AGRI), farm-level modelling activity based on a survey of a non-representative sample of 248 EU farmers, to investigate farmers' investment behaviours, and evaluate the impact of different CAP scenarios on a selected group of farming systems. The report, *Investment Behaviour in Conventional and Emerging Farming Systems under Different Policy Scenarios*, was issued in 2008 (based on the 2006 survey). A second report, *Farm Investment Behaviour under the CAP Reform Process,* was issued in 2011 (based on the 2008 survey). This largely replicated the 2006 study with a sample of 256 farms. These two reports analysed the determinants of investments, but with a main focus on the impact of the Single Payment Scheme (SPS). The main result of these two previous studies was to show that farmers were to a great extent indifferent to decoupling their investment decisions. The amount received from SPS was rarely reinvested (in 2008, on average 82% of the payments from SPS were used to cover on-farm current expenditures, whereas on-farm investments represented only 14%). In the few cases where payments from SPS had an impact on investment, they mainly reinforced existing strategies: expansion for bigger and more efficient farms vs extensification or abandonment for smaller and poorer performing farms. Among the other drivers of investment, markets (price of inputs and outputs, credit constraints)

1 The evaluation of investment support under Rural Development Policy (December 2013-November 2014, AGRI-2013-EVAL-06) will provide more direct answers to these questions. More precisely, this evaluation is intended to measure the effectiveness, efficiency and impact of the investment support in ten RD program territories selected as case studies. It is also expected to provide an assessment of the methodologies commonly used to evaluate the impact of investment support, as well as an assessment of the mechanisms and criteria used to target investment support.

were more important than the level of payment received (albeit with a high variability of impact across farms). The simulations of reactions to different scenarios defined by prices and policy changes showed that, given the narrow profit margins, price decreases in the range of 20% would have a very detrimental effect on economic sustainability and investment. The same happens, albeit with less extreme results, if the SPS is removed.

For the 2013 survey, the sample size was increased and the sampling approach was revised in order to achieve a better coverage of the main farming systems and regions of the EU. Further emphasis was placed on the role of the individual and on the behavioural characteristics of the head of the farm, as these are also likely to impact investment decisions, beyond just the farm structure and policy variables. Moreover, based on an updated review of the literature and policy agenda (CAP post-2013), the policy instruments analysed here go beyond just direct payments, with a stronger focus on rural development payments that support investment and the modernisation of farm holdings.

The current report is structured as follows. Section 2 presents the questionnaire and sampling methodology. The sample characteristics are then described in section 3. The patterns and determinants of the investment intentions in 2014-2020 are presented in section 4. The specific results on the role of the CAP are presented in section 5. The results and their policy implications are then discussed in section 6, and section 7 concludes and highlights any limitations of the study and prospective areas for future research.

2 Methodology

2.1 Intention survey

The methodology selected to analyse farm investment foreseen in 2014-2020 is an 'intention survey'.

In using an intentions survey it is worth noting that some concerns have been raised in the literature on the ability of stated intentions to predict real behaviours. For instance, one obvious reason why farmers' decisions may not match their original intentions is that more, or new, information becomes available following the survey, either because the environment has changed or because the farmer did not previously have access to the information (Thomson and Tansey 1982; Manski 1990; Vare, Weiss et al. 2005). Beyond the factors related to context, the literature points out two biases likely to impact farmers' responses in intention surveys. First, 'negligence bias', which arises from the farmers devoting too little time to answering the questionnaire, with a risk that the survey might not thus reveal their true preferences. The farmers might also feel obliged to answer questions about intentions even though they have not yet made specific plans (Bagozzi and Yi 1989; Vare, Weiss et al. 2005). The usual difficulties related to questionnaire design are greater in intention surveys due to the need to pre-judge the basis upon which the farmers respond to questions about their plans for the future. Some may report their intentions on the basis of the actual environment, which is in reality unlikely to persist, or may extrapolate price and income trends and report their intentions based on these (unreported) assumptions. In a stated intention survey, the researcher should attempt to define explicitly the conditions under which the intentions are to be formulated. However, the possibility of respondents ignoring or disagreeing with these assumptions cannot be disregarded (Thomson and Tansey 1982). The second type of bias is the 'manipulation bias', i.e. responses might be biased if respondents think that their answers can influence the result of the survey and the subsequent policy decision (Thomson and Tansey 1982). Biased responses arise from the desire to look socially responsible or to exert influence toward a desired end (Fujii and Gärling 2003). These are important concerns in studies regarding agricultural policy, a field in which farmers' lobbies are powerful and where it may seem possible for some respondents that the parties involved in policy negotiations may make use of the results.

Despite all these limitations, the reliance on 'intentions data' is becoming increasingly common when studying farmers' future decisions and adjustments to potential changes in their environment (Bougherara and Latruffe 2010; Bartolini and Viaggi 2011; Raggi, Sardonini et al. 2012). The theoretical rationale behind the intention survey is the Theory of Planned Behaviour (TPB). This theory assumes that (i) people's decisions originate from their intentions to perform a specific behaviour; and (ii) a person's intentions are influenced by their attitudes towards the behaviour, which refers to the degree to which a person has a favourable or unfavourable appraisal of the behaviour in question. The TPB also stipulates that, to generate an intention to perform a specific behaviour, a positive attitude is not enough, the individual also needs to hold a perception that others in their social network support the behaviour (social norms) and the individual also needs to feel that they can influence and control their behaviour (perceived behavioural control) (Ajzen and Madden 1986; Ajzen 1991). More generally, the theory suggests that farmers take into account some of the investment constraints they may face when disclosing their intentions to invest.

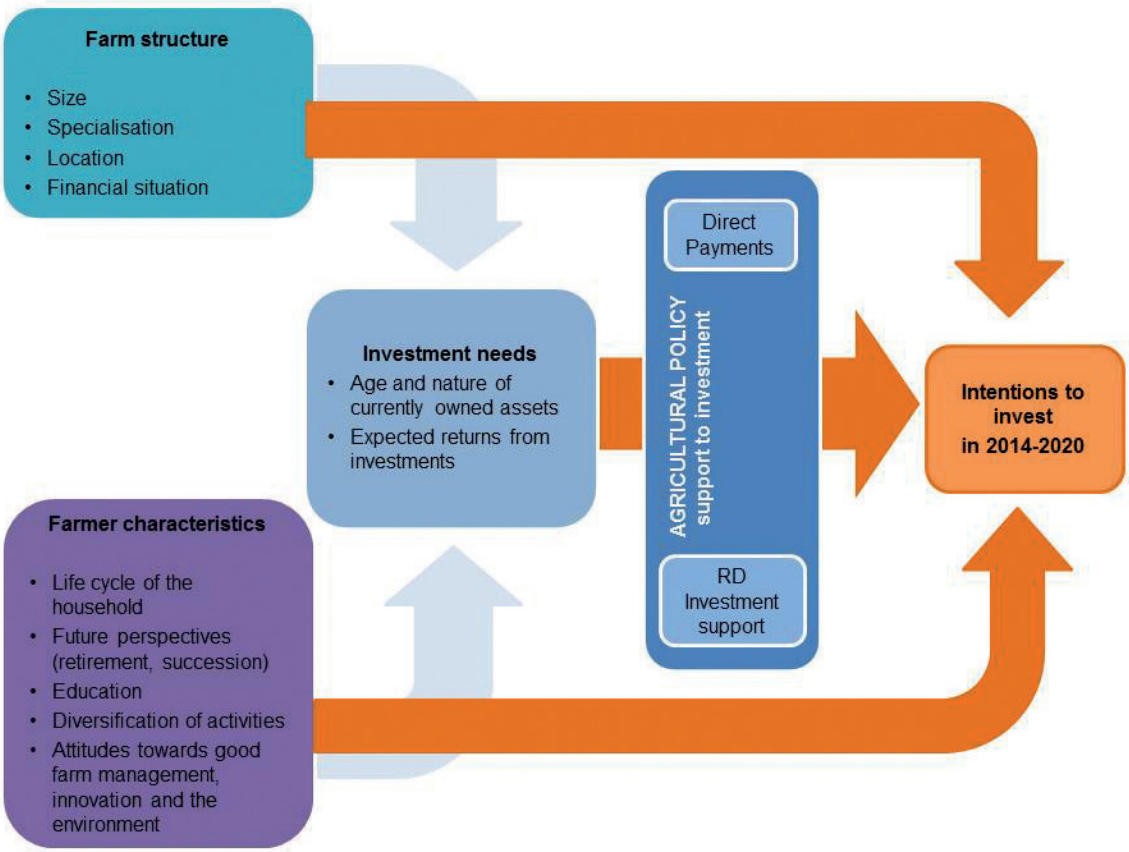
In practice, surveys of farmers' intentions are used mainly for two reasons. First, they are an attractive tool to investigate hypothetical situations, which is a common need in *ex ante* policy evaluations. Second, the survey results provide a good insight into farmers' expectations about the evolution of their environment and business confidence, which is very likely to shape their actions in the short term (Harvey 2000). Given the present high level of uncertainty surrounding farming (e.g. regarding agricultural prices in the short term, the future of the Common Agricultural Policy in the medium term and climate change in the long term), behavioural components such as farmers' perceptions and attitudes toward risk are likely to play a fundamental role in agricultural decisions (Just 2008). When complex human decisions are involved, surveys on intentions may be more accurate than programming models in the representation of behaviours, as they usually require fewer assumptions than models and can rely on the respondents' perception to provide a synthesis of their likely reactions to complex context variables. In these cases, it is reasonable to rely on surveys of stated intentions to complement programming models, allowing for a consistent comparison of results under different scenarios (Viaggi, Raggi et al. 2011). Moreover, previous empirical research has shown that stated intentions are a reasonably good predictor of realised actions in the case of land investments (Lefebvre, Raggi et al. 2013).

2.2 Questionnaire

The questionnaire was developed according to the framework presented in Figure 1. It includes questions related to farmers' investments intentions for 2014-2020, and information on farms and farmers' characteristics likely to explain these intentions to invest. The questionnaire from the two previous studies was used as a basis and modified according to the interest shown by policymakers for specific aspects (via consultation with DG-AGRI) and recent results in the literature on farm investment.

The English version of the questionnaire is available in annex 1. Translations of the questionnaire were carried out within the GfK network by translators with experience in the field of agriculture. Translations were also checked by subject-matter experts from each country, assessing the quality of the translation and the accuracy of the technical terms.

Figure 1: Questionnaire framework



The **screening questions** were asked over the phone when the farmers were first contacted. They included NUTS region where the farm is located, farm size in hectares and the activities contributing most to the overall farm income (later used to define farm specialisation).

Section A included traditional questions on the **farm** (including location, e.g. in plain, hill or mountain; share of organic production; legal status) **and the farmer's characteristics** (age, structure of the household, education, future perspectives in terms of exit from farming and succession).

Besides the socio-demographic characteristics, a series of questions were added in order to assess **farmers' attitudes**. Attitude is a disposition to respond favourably or unfavourably to an object, person, institution or event (Kim and Hunter 1993). The questionnaire focused on attitudes towards good farm management practices, innovation, and the environment, considered as potential subjects relevant to investment intentions. To measure the attitudes towards good farm management practices, the questionnaire was designed using the scale developed by Hansson & Lagerkvist (2012) for risk attitudes. Farmers were asked 'How likely are you to ever find yourself in each of the following situations?'. The list of farm management practices covers aspects of financial, production, environmental and social management likely to have both positive or negative impacts. For the attitudes towards the environment and innovation, farmers were asked 'To what extent do you agree or disagree with the following statements?'. Farmers' environmental attitudes were evaluated using seven questions, four of which were developed by Vogel (1996) and the others by the authors. Attitudes towards innovation were measured by means of eight questions, based on a scale developed for consumer attitudes (Goldsmith and Hofacker 1991), completed by a list of questions on openness to new ideas in business (Edwards-Jones, Deary et al. 1998).

In **section B**, details on **farm activities** were collected. Farm activities influence the type of assets farmers most need and therefore may influence their investment plans. The revenues generated also differ according to the type of activities and this therefore influences the potential return from investment. Only information on the activities that contributed most to their overall farm income were questioned (e.g. animals for livestock farms, crops for farms specialised in arable crops and perennial crops, and both crops and animals for mixed farms). The information collected included area grown and average yield for crop farms or the number of animals for livestock farms, as well as average prices received for their production over the last four campaigns in 2008-2012 (in order to flatten out the effects of specific weather conditions or socio-economic conditions in a certain year). For each of the crop or animal types, the respondents also provided details on the proportion sold against the fixed/guaranteed price. Furthermore, information on income from non-farming activities was collected.

Section C included questions on the **people working on the farm**: the number of permanent and temporary workers and contractors employed by the farmer. Permanent workers are defined as persons working full time on the farm and receiving a wage for their work on the farm. No information was collected on the labour of family members that did not formally earn a salary. Moreover, the questionnaire includes information on the nature and costs of externally contracted activities.

In **section D**, the **farm's currently owned assets** were reported: type of assets, purchase date[2] and value. The types of past investments were split into the categories of land, machinery and equipment, buildings, training, and quotas and production rights. For the investments in buildings, machinery and equipment and training, farmers were asked about their plans for renovation, replacement and training updates. For quotas and production rights, future plans for the sale of these were also measured.

Section E included questions concerning the farm's **financial resources**.

No information was collected on the total net income of the farmers. Also this cannot be computed as we only collected information on output price and yield, but not on costs. Moreover, the questionnaire focused on the activities and production corresponding to the farm specialisation, and therefore does not cover all the activities of each farm. However, as a proxy for financial resources, we know the hypothetical wage in an alternative profession that would cause the respondent to stop farming (section A). Moreover, the survey included information on annual off-farm income for part-time farmers, and the total off-farm income of the household (section C).

Information on CAP payments received (direct and rural development payments) was collected. In particular, farmers were asked whether they applied to any rural development measure supporting investment in the last four campaigns, in particular from Measures: 121 (modernisation of farm holdings), 112 (support for setting up of young farmers) and 123 (support for adding value to agricultural and forestry products). Details on the nature of the investment to be subsidised, whether the application was successful and the farmers' satisfaction with the process of applying for investment support were also collected. Farmers were also asked whether they had bank loans in the period 2008-2012 (amount, period, and use of money), and whether they faced limitations in accessing credit.

2 The question on the investments made or planned, until the end of 2013 did not specify a timeframe, therefore some farmers gave information on investments realised a long time ago (e.g. the oldest investment cited dated back from 1900). However, given that there were a maximum number of past investments that could be declared (seven investments for land, eight for machinery and equipment, eight for buildings, three for training, and four for quota and production rights), we do not claim to have collected information on all investments realised in the farmer's professional lifetime. Most of the farmers have provided information on their more recent investments. In the analysis, we only focus on those investments realised between 2008 and 2012.

In **section F**, farmers were asked their **intentions to invest between 2014 and 2020**. Farmers were also asked to predict the direction of their farming activity in the coming seven years. Intentions to invest were then detailed according to investment type, investment value, planned date for investment, ways of financing this investment, and the rationale for the investment. This enables a full understanding of the farmer's investment intentions, according to the type of assets, costs and expected benefits. Those who did not intend to invest gave reasons why not.

The period 2014-2020 corresponds to the next CAP programming period. We assumed some farmers already had information on the on-going discussions for CAP reform at the time of the survey but we did not make any reference to the policy in the first part of question F. Then, for those farmers having stated an intention to invest, we tested the **impact that hypothetical changes in the CAP payments would have on these investment plans**. More precisely, farmers were asked whether their declared intentions to invest in the period 2014-2020 would be modified under different scenarios. The different scenarios tested concerned possible changes (i.e. increase of 50%, status quo, decrease of 50%) in: (i) direct payments per hectare to be received in the period 2014-2020; and (ii) rural development funds to be allocated to farm modernisation (investment subsidies) at the regional level from 2014 onwards. Farmers had to indicate for each scenario and for each class of assets whether they were likely to invest (i.e. they would definitely realise the investment mentioned previously, or it is likely that they will realise the investment) or they were not likely to invest (i.e. it is likely that they will not realise the investment or they will definitely not realise the investment).

The survey focuses on physical on-farm investment (land, buildings, machinery and equipment) and investments in training and quotas and production rights. Land is a peculiar asset in farming, as it covers most of the value to farms (except for some livestock farms with animal indoors and little land). The investment in land depends on diverse and complex factors, such as competition for land use, speculative forces in the land market, the design of the agricultural policy, etc. (Ciaian, Kancs et al. 2012). Farmers operating family farms may also have individual or personal reasons to sell or keep their land, including family traditions, prestige, and lifestyle values. Investing in land requires time for planning and realisation, which makes it more likely that farmers develop an intention to invest a few years before actually realising the investment. However, the timing of operations in any land transaction may be slow and delays are also possible, which can impact on the connection between intentions and actions (Lefebvre, Raggi et al. 2013). Since land represents the main limiting factor to size adjustment, the investment in land interacts with the willingness to carry out other investments. In building-intensive systems (e.g. livestock farming), buildings may be highly demanding in terms of investment. Machinery and equipment are increasingly important components of farm assets. An important part of innovation in farming is related to the adoption of advanced technology (e.g. improved information systems for precision farming). In relation to previous studies, investments in training were added in this survey, due to the increased policy interest in this subject. Given that the main objective of the survey is to analyse farm investment, we only collected information on training paid for by the farmer. We therefore do not have an accurate overall picture on the amount of training received by the farmers; which might include training offered for free to the farmers from extension services, cooperatives and input suppliers. No information was collected on intentions to plant new trees (investment in plantation). Intentions to invest in milk and sugar beet quotas and vineyard production rights are a special case, given the announced phasing out of these quotas (dairy quotas will expire in 2015, the planting rights system will end in 2018 at the latest, and sugar quotas will be abolished in 2017 (EC 2013)). These results are therefore presented separately in annex 3.

2.3 Sampling

The sample covers six countries with diverse agroclimatic conditions, farm structures and implementation modes of the Common Agricultural Policy, namely: Czech Republic, Germany, Spain, France, Italy and Poland. Germany and Italy were the largest countries that have implemented the Single Farm Payment since 2005, adopting different decoupling mechanisms. Poland provides an example of a country in Eastern Europe, with an important agricultural sector and with a different policy setting, characterised by increasing area payments through the Single Area Payment (SAP) scheme. Spain complements the results from Italy with purely Mediterranean areas. Czech Republic complements Poland with case studies from a different new Member State. France represents an important share of agriculture in the EU-15; furthermore it is a benchmark country for the SFP implementation, as it has applied a partial decoupling.

The sample also covers the four main farm specialisations: arable crops, perennial crops, livestock and mixed farms. Farms are classified as specialised in livestock if at least 66% of their overall income comes from livestock production (the same applies for the arable and perennial specialisation), while mixed farms derive at least 33% of their income from crop production and 33% from livestock production. The types of farming in the European Community typology covered by each farm specialisation are presented in Table 1.

Table 1: Classification of farms in four farm specialisations according to community typology on types of farming (TF) (REG 85/377/EEC)

Farm Specialisation	Codes	Grouping of TF on the basis of principal types of farming
Arable crops	13	Specialist cereals, oilseeds and protein crops
	14	General field cropping
	60	Mixed cropping
Perennial crops	20	Specialist horticulture
	31	Specialist vineyards
	32	Specialist fruit and citrus fruit
	33	Specialist olives
	34	Various permanent crops combined
Livestock	41	Specialist dairying
	42	Specialist cattle - rearing and fattening
	43	Specialist cattle – dairying, rearing and fattening combine
	44	Sheep, goats and other grazing livestock
	50	Specialist granivores
Mixed farms	71	Mixed livestock, mainly grazing livestock
	72	Mixed livestock, mainly granivores
	81	Field crops - grazing livestock combined
	82	Various crops and livestock combined

A purely random sampling design was impossible due to the limited budget and time, as well as the high costs of conducting face-to-face interviews. A cluster-sampling approach was thus selected. Cluster sampling is more economical and practical than purely random sampling when the population under study is large and spread over a wide geographical area. Resources are allocated to the few selected clusters instead of the entire country.

In the first stage, clusters were selected on the basis of being regions in which a particular farm specialisation is well represented (purposive sampling). For each of the four farm specialisations, three to four regions were selected by country, adding up to 92 clusters in total. The selection of regions for each country and farm specialisation involved three steps: (1) First, regions were ranked according to the value of four indicators: the number of holdings, the utilised agricultural area in hectares or the number of livestock units for livestock farms, the economic importance of each farming type in that region in terms of standard output (€) and agricultural labour. The data from which the selection of regions was made, can be found in annex 2 (2010 Farm Structure Survey),; (2) The rankings of the four indicators were then combined, resulting in an overall ranking; (3) The four regions with the highest overall ranking were selected (except in the case of Czech Republic, where the top three were selected). We can verify that, for each country and farm specialisation, the selected regions cover at least 40% of the national UAA of this farm specialisation.

In the second stage, farms were selected randomly within each cluster. Given the sampling plan and budget constraint, we initially aimed to interview 30 farmers for each farm specialisation in each country (therefore seven or eight farmers per cluster). However in some regions, it was difficult to find a sufficient number of farms willing to participate in the study as foreseen in the sampling plan. Some exceptions to the sampling plan were therefore made, and to compensate, a higher number of interviews were realised in other regions or in other farm specialisations. A total of 780 interviews were carried out. The number of interviews conducted in each cluster varied between 4 and 15 (Table 2).

Table 2: Regions selected and number of farms interviewed in each cluster

		Arable	Perennial	Livestock	Mixed	Total
Czech Republic						
Jihov chod	CZ06	10	11	13	11	
Jihozápad	CZ03			12	11	
Severov chod	CZ05		10	12	12	
Severozápad	CZ04	11				
Střední Cechy	CZ02	11	10			
Total		32	31	37	34	134
Germany						
Baden-Württemberg	DE1	10	10	8	9	
Bayern	DE2	12	6	9	6	
Niedersachsen	DE9	8		8	8	
Nordrhein-Westfalen	DEA	9	8	9	7	
Rheinland-Pfalz	DEB		7			
Total		39	31	34	30	134
Spain						
Andalucía	ES61	8	7	8	7	
Aragón	ES24	7				
Castilla y León	ES41	8		7	8	
Castilla-la Mancha	ES42	7	7			
Cataluña	ES51		8			
Comunidad Valenciana	ES52		8			
Extremadura	ES43			7	8	
Galicia	ES11			7	8	
Total		30	30	29	31	120
France						
Aquitaine	FR61		7		10	
Basse-Norm andie	FR25			8		
Bretagne	FR52			15	7	
Centre	FR24	9				
Champagne-Ardenne	FR21	7	6			
Languedoc-Roussillon	FR81		10			
Midi-Pyrénées	FR62	12		10	4	
Pays de la Loire	FR51			7	8	
Picardie	FR22	7				
Provence-Alpes-Côte d'Azur	FR82		7			
Total		35	30	40	29	134
Italy						
Emilia-Romagna	ITH5	8		8	7	
Lombardia	ITC4	7		8	7	
Piemonte	ITC1			7	8	
Puglia	ITF4	8	6			
Sardegna	ITG2			7		
Sicilia	ITG1		8			
Toscana	ITI1		8			
Veneto	ITH3	7	8		8	
Total		30	30	30	30	120
Poland						
Dolnoslaskie	PL51	8				
Kujawsko-Pomorskie	PL61				8	
Lódzkie	PL11		7	8		
Lubelskie	PL31	9	9		9	
Mazowieckie	PL12	9	7	8	12	
Podlaskie	PL32			8		
Swietokrzyskie	PL33		8			
Wielkopolskie	PL41	9		8	11	
Total		35	31	32	40	138
Total		**201**	**183**	**202**	**194**	**780**

2.4 Data Collection

2.4.1 Contact procedure

Two sources were used to select farms within each cluster: an existing database and the telephone register.

The samples for France, Italy and Poland were drawn from databases of farms developed over time by GfK. The databases have been compiled from various sources including telephone directories, commercial sample providers, lists provided by the farming press and from a 'snowballing' process (i.e. the referral from one farm to another farm in a particular locality) during the course of many market studies on behalf of various crop protection companies, seed breeders, farming machinery manufacturers and animal health companies. Given the diversity of the data sources and the diverse nature of the clients for whom this work has been conducted, we have assumed the sample is not too biased towards particular farming systems and farmers' profiles. These databases contain not only contact details of the farms, but also information on the farms' specialisation, region, size, etc. Therefore, farms could be randomly selected in each region-specialisation cell. The selected farmers were contacted by phone in order to inform them about the interview and the subject area and to check whether they were willing to participate.

In the Czech Republic, no such databases were available. The starting point was instead the Yellow Pages, where a filter could be set to select the farming sector and specific regions. Farms contacted were randomly selected in the telephone register. During the phone call, farmers were first informed about the interview and the subject area, then the interviewer checked their eligibility to take part in the survey (according to their region and farm specialisation) and last asked whether they were willing to participate.

Several farmers refused to participate in this study. Unfortunately, the number and characteristics of the non-respondents is not available.

Those who accepted the offer to participate were sent written confirmation of the interview date and time, as well as an introduction letter stressing the importance of the study (annex 1).

2.4.2 Field work

Given the length and content of the questionnaire, it was decided to use structured face-to-face interviews using the Paper Assisted Personal Interviewing (PAPI) methodology.

The field work took place in the first half of 2013 and was split up into three phases: a pre-test, consisting of one interview per country (10th January 2013 in Andalucía, ES; 28th February – 1st March in other countries), a pilot-phase consisting of three to five interviews per country (4th-15th March) and the main fieldwork stage (27th March -15th May). On the basis of the results of the pre-test and pilot interviews, adjustments were made to the questionnaire, the script and the translations.

The average duration of each interview was about 60 minutes. As thanks for their cooperation, farmers received a small thank-you gift, consisting of a tee-shirt in Italy, PLN 100 (EUR 24) in Poland, EUR 30 in Germany, EUR 28 in Czech Republic, EUR 20 in France and EUR 8 in Spain.

2.5 Weighting

2.5.1 Methodology

The process of weighting involves emphasising the contribution of some observations (giving them more weight in the analysis) over others, so that the weighted sample matches the population figures for some specified characteristics.

Here, the weights were designed such that the weighted sample reflects the population in terms of total UAA and LSU per farm specialisation at the country level. Moreover, some farm specialisations were deliberately oversampled in order to have a sufficient number of observations for each farm specialisation in each cluster. Moreover, response rates often varied across different segments within the sample. Designing weightings therefore allowed correcting for these imbalances and allowed equalizing the proportion of farm holdings in each specialisation in the weighted sample to the population at the country level.[3]

The weighting procedure is based on a method proposed by Luery (1986). In the current implementation, an extension by Rao and Singh (1997) is utilised which allows dealing with metric constraints (since UAA and LSU are metric and not categorical variables). The analytical algorithm minimises the information loss imposed by the weighting constraints. This method accounts for heterogeneous variances, which is especially important when optimised, disproportional samples are used.

The quality of the weighting was evaluated by the Effective Sample Size (EFFSS), which is a useful measure of the effect of the complex sample design on the resulting precision of the estimates (Kish 1987). For disproportionate samples, the formula of EFFSS takes into account the weight applied

3 However, since the weighting procedure does not account for the number of farms in the respective countries, the number of observations in the weighted sample (n= 1 700 000) does not reflect the number of farmers in the studied countries (about 4.7 million farms).

to each respondent w_i and the design weights d_i. The more the weights deviate from the design weight, the smaller the effective sample size and the less accurate the estimates.

$$EFFSS = sample\ size^2 / \sum \frac{w_i^2}{d_i^2}$$

All the results presented are based on the weighted sample.

2.5.2 Implementation

The farms surveyed are almost equally divided over the different farm specialisations: 201 farms specialising in arable crops, 202 livestock farms, 183 farms specialising in perennial crops and 194 mixed farms. After the weighting, farms specialising in arable crops account for 30.8%, 35.8% in perennial crops, 22.3% are livestock farms and 11.1% are mixed farms (Table 3). These proportions correspond to the proportions observed in the Farm Structure Survey 2010 at the country level.

The effective sample sizes by country are: CZ= 89.1%, DE= 86.6%, ES= 53.2%, FR= 59%, IT= 63.8% and PL= 59.9%.

Table 3: Proportion of each farm specialisation per country

	CZ	DE	ES	FR	IT	PL	All sample
Arable crops	32.5%	28.1%	23.4%	30.1%	31.4%	47.3%	30.8%
Livestock	35.6%	48.2%	17.2%	37.9%	8.4%	12.7%	35.8%
Perennial crops	11.9%	9.0%	54.7%	20.4%	57.7%	7.9%	22.3%
Mixed	19.9%	14.7%	4.7%	11.5%	2.6%	32.0%	11.1%

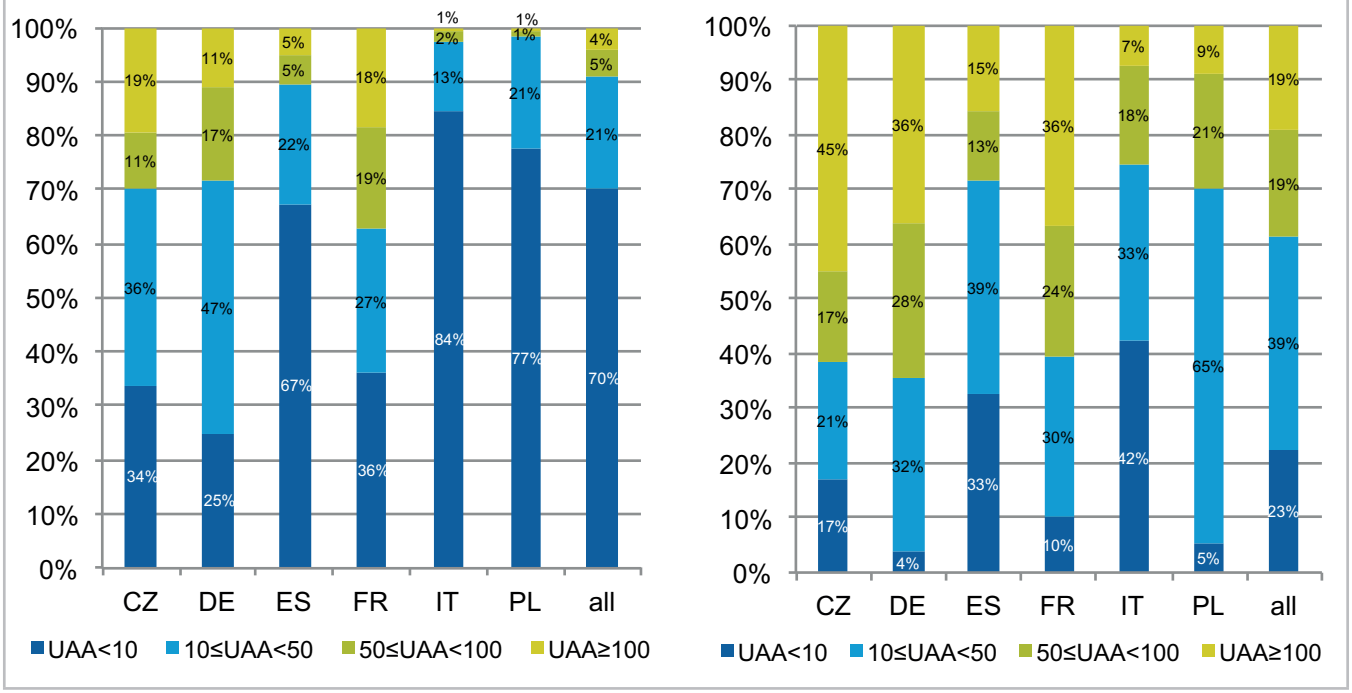
3 Sample description

The main characteristics of the sample are presented in this section. While the sample is too small to be representative of EU farming, it does still cover a large range of farming systems. We present here the characteristics of the weighted sample, as well as a comparison with the general farm population when agricultural census data are available. Overall, even after the weightings, the sample still remains biased towards larger farms and younger farmers compared to the general farm population of the six countries covered by the study (Czech Republic, Germany, Spain, France, Italy and Poland).[4] One advantage of this though is that the sample focuses on the more active farmers, i.e. those who are more likely to have interesting investment behaviours. These biases though should be taken into account when interpreting the results.

3.1 Farm size

As aforementioned, the sample is clearly biased towards larger farms, e.g. farms with less than 10 hectares actually represent around 70% of all farm holdings in the six countries, but they only account for 23% of the weighted sample; while 38% of the farms in the survey have more than 50 hectares, but these farms only account for 9% in the population. The sample suffers from the same bias for livestock farms: the livestock farms size in number of livestock units (135.7 LSU) is much higher in the survey sample than in the general population under study (50.6 LSU). Figure 2 shows the distribution of farm holdings by farm size (UAA) in the population and sample.

Figure 2: Distribution of farm holdings by farm size (UAA) in the population (left) and sample (right)



4 The weights have been chosen so that the total UAA and LSU are similar in the weighted sample and the general population at a country level. But this does not guarantee that the average farm size and the distribution of farms across size classes are similar in the sample and population, given that the weighting procedure does not account for the number of farms in the respective countries.

Concerning farm size in terms of paid labour force, 74% of the farms had no paid permanent workers[5] in the period 2008-2012, only 13% of the farms had one permanent worker, while 13% had two or more permanent workers. The average number of permanent workers is 0.7, but with a high heterogeneity across countries. In all countries except Czech Republic, there is on average less than one permanent worker per farm (German farms have only 0.1 employees on average). Czech farms have on average 12.2 permanent workers.

3.2 Crop and animal production

Farms from four specialisations were interviewed. Within each specialisation, there is a variety of crops grown and animals bred. Figure 3 to Figure 6 show the percentage of farms growing each crop or breeding each animal category in the sample.

Figure 3: Arable crops grown by arable farms (Percentage of farms growing each category of crop)

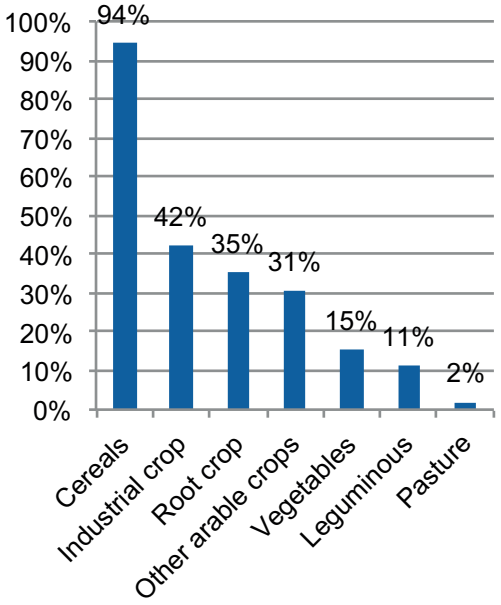


Figure 4: Perennial crops grown by perennial farms (Percentage of farms growing each category of crop)

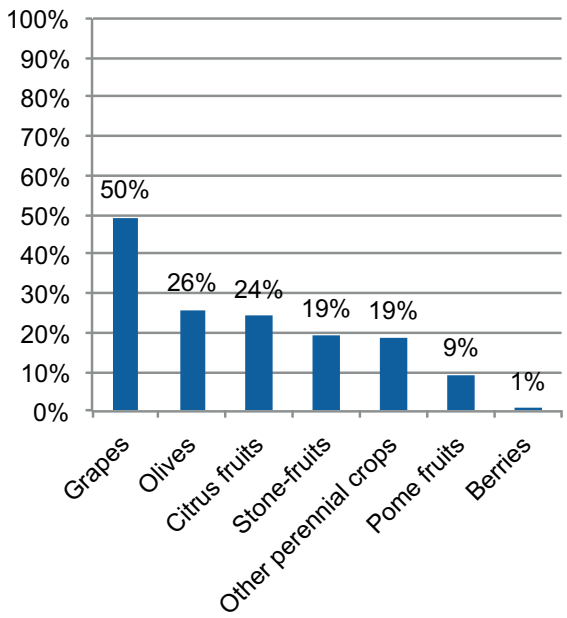


Figure 5: Animals bred by livestock farms (Percentage of farms breeding each category of animals)

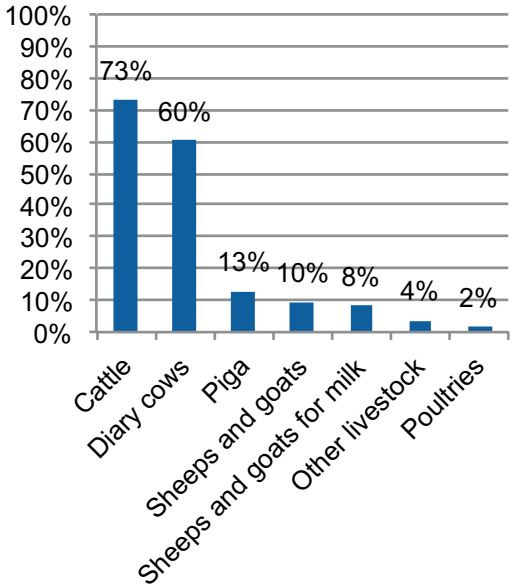
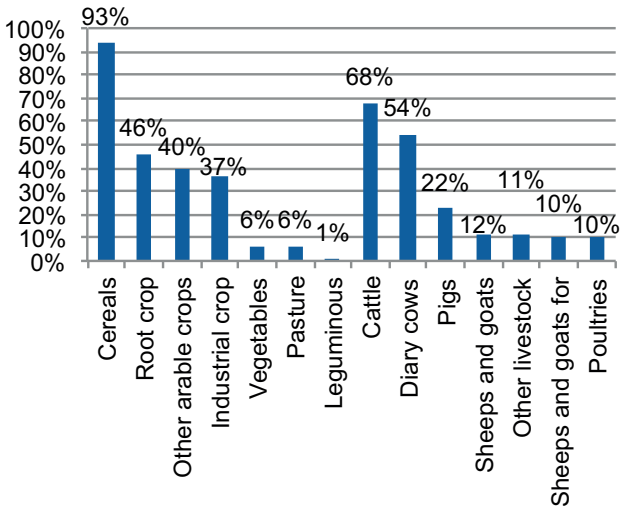


Figure 6: Arable crops grown and animals bred by mixed farms (Percentage of farms growing/ breeding each category of crops/animals)



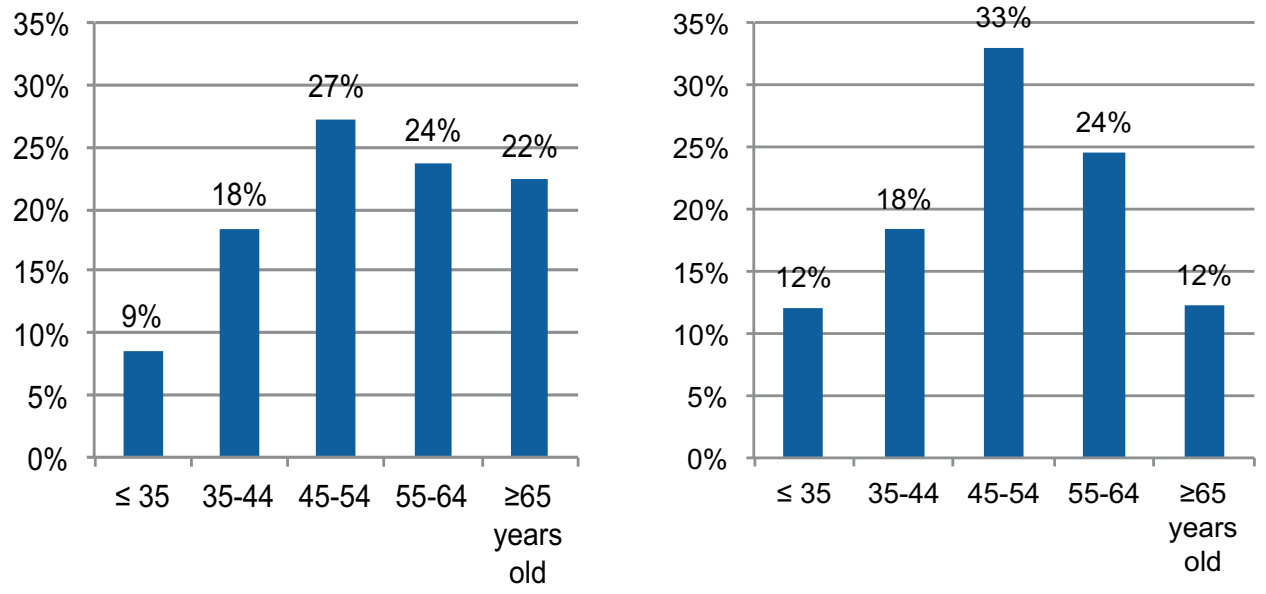
5 Permanent workers are defined as persons working full time on the farm and receiving a wage for their work on the farm. This excludes family members that do not formally earn a salary.

3.3 Farmers' profiles

A large majority of the farmers interviewed are male (88.4%). The mean age of the farmers is 51 years old, and on average they have 26 years of experience. The sample is biased towards younger farmers: while in reality only 9% of farm managers are less than 35 years old in the general population under study, they account for 12% in the survey sample; and conversely, whereas only 12% of the farmers interviewed are more than 65 years old, they account for 22% of the general farm population. Figure 7 shows the distribution of farm managers by age in the general population and in the survey sample.

Furthermore, in a large majority of cases, farmers work full-time on their farms, with an average of 94% of their professional time dedicated to the farm.

Figure 7: Distribution of farm managers by age in the general population (left) and the survey sample (right)



3.4 Legal status

The farms surveyed are mostly individual companies (90%), defined as holdings where the economic result covers the compensation for the unpaid labour input and the own capital of the holder/manager and his family. 9.9% of the sample is made up of partnership farms, i.e. holdings where the economic result covers the compensation for the production factors brought into the holding by several partners, including both cooperative and farm enterprises. 0.1% of the sample are farms with other statuses. There is a high heterogeneity of legal statuses across countries. For example, partnership farms are more represented in the Czech Republic and France due to the importance of cooperatives in these countries. Five of the six farms with other legal statuses in the sample are Polish State farms.

3.5 Farm location

74% of the farms surveyed are located in a plains area (large area of level or nearly level land), 18% are located in hills (up to 300m above sea level) and 8% in mountain areas (300m above sea level). Mountain farms surveyed were mostly situated in Germany and the Czech Republic. The farms located in mountain areas are mainly livestock farms (74%), while farms located in hilly areas are mainly (54%) farms specialised in perennial crops.

3.6 CAP payments

60% of the surveyed farmers declared receiving direct payments in 2012, with an average payment of EUR 19 129. The percentage of actual beneficiaries among EU farmers is higher than in the sample (75% in the new Member States EU-N10 and 85% in the old Member States EU-15) (EC 2012). This difference is likely due to the high rate of farmers having refused to disclose this information (20% on average, but with big differences between countries: 40% in Italy and 6% in France, to quote only the two extremes). It is likely that the farmers who refused to provide the information on the amount of direct payments are indeed beneficiaries.

27.6% of the surveyed farmers admitted receiving rural development payments, with 19.7% of the farms receiving rural development payments aimed at supporting investment over the period 2008-2012. For those payments, the refuse-to-answer rate is much lower. The amounts of payment received by the beneficiaries are presented in Table 4.

Table 4: CAP payments per farm

	% of beneficiaries	% of non-response	Mean (beneficiaries only) (EUR)	Median (beneficiaries only) (EUR)	S.D. (beneficiaries only) (EUR)
Direct Payments (in 2012)	60.2%	20.3%	25302	18000	88890
Rural Development payments (total 4 years 2008-2012)	27.6%	3.1%	29528	11500	109175
Investment support (total 4 years 2008-2012)	19.7%	1.2%	39568	13150	84213

Note: Invest support includes RD measure 121 modernisation of agricultural holdings, measure 112 young farmers and measure 123 adding value to agricultural and forestry products and other sources of funding.

4 Intentions to invest in 2014-2020

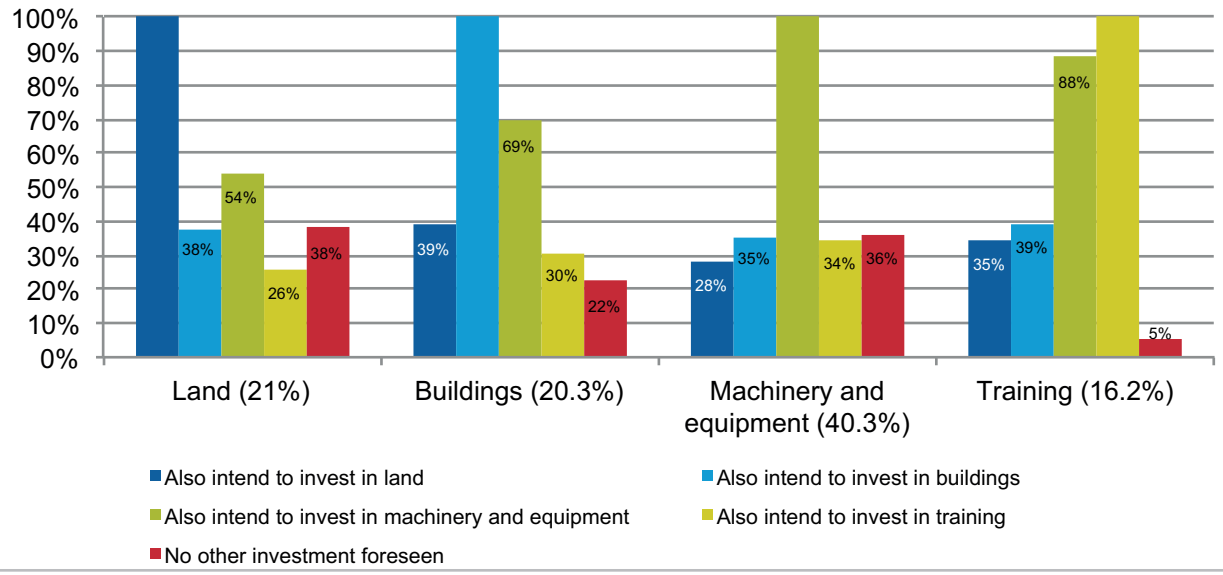
The results on farmers' intention to invest in the next CAP programming period (2014-2020) are presented. We first present the nature and amount of the investments foreseen by the farmers interviewed, then the expected benefits from investing, and finally the reasons associated with any decisions not to invest. We also present the information collected on how investments will be financed. The last two subsections aim at understanding the determinants of farm investment, i.e. what and who are the farms and farmers that are intending to invest in 2014-2020. This helps highlight the differences between the characteristics of the farms and farmers that are intending to invest in the period 2014-2020 in our sample and those who are not.

4.1 Nature of the investments foreseen in the period 2014-2020

Overall, it was found that 56.5% of farmers are intending to invest (abbreviated to 'II') in the period 2014-2020. 40.3% of the farmers planned to invest in machinery and equipment, while investment intentions in land, buildings, and training are less common (21.0% land, 20.3% buildings, 16.2% training). The prevalence of intentions to invest in machinery and equipment is not surprising given the shortest depreciation period of these assets.

Most farmers have intentions to invest in several types of assets over the period 2014-2020 (Figure 8). 28% of the farmers are only intending to invest in one type of asset. Most of the intentions to invest in a single type of asset concern investments in land and machinery and equipment: 38% of the farmers intending to invest are only planning to purchase land or 36% only intend to invest in machinery and equipment. Most frequently, we observe that farmers plan to invest in several asset classes, which is consistent with the hypothesis of complementarity between different types of assets. For example, 54% of those who intend to purchase land also intend to invest in machinery and equipment. Training and machinery and equipment are also complementary assets, since 88% of those who have intentions to invest in training also intend to invest in machinery and equipment, and 35% of those who have intentions to invest in machinery and equipment also intend to invest in training. Figure 8 shows the breakdown of farmers intentions to invest in other assets as well one of the other asset classes.

Figure 8: Percentage of farmers intending to invest in other assets among those intending to invest



Reading note: 21% of the farmers are intending to invest in land. Among them, 38% have no other investment foreseen, but 38% also intend to invest in buildings, 54% in machinery and equipment, and 26% in training. The total sums add up to more than 100% because farmers can foresee investment in several other assets.

Half of the farmers intending to invest in land plan to buy less than 8 hectares (median), and a quarter even plan to buy less than two hectares. 6% of the farmers declare they will buy more than 50 hectares of land over the period (Figure 9). Investments in buildings concern mainly machinery storage (30.3% of the intentions to invest in buildings) and animal housing (32.7%) (Figure 11). Investments in machinery and equipment are diverse and concern mainly tractors (39.2% of the intentions to invest in machinery) and a sprayer (16.1%) (Figure 10). More than a third of the intentions to invest in training concern training in crop protection methods, while the rest concern production methods in general (8%), animal breeding (3%), farm management (17%), machinery (6%) and security (2%). Interestingly, 28% of the farmers plan to invest in training but do not have a clear idea on the content yet (Figure 12).

Figure 9: Intentions to purchase land by total number of hectares to be bought in 2014-2020

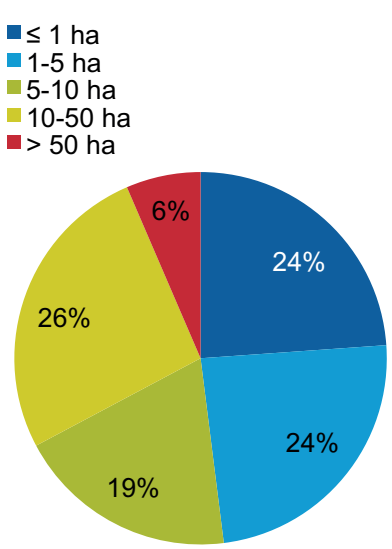


Figure 10: Intentions to invest in machinery and equipment by type

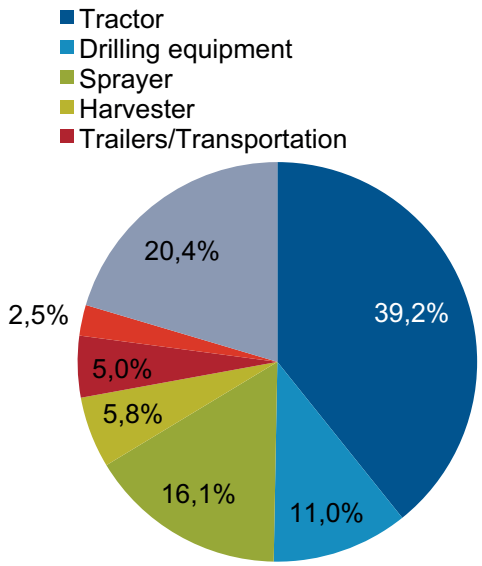


Figure 11: Intentions to invest in buildings by type

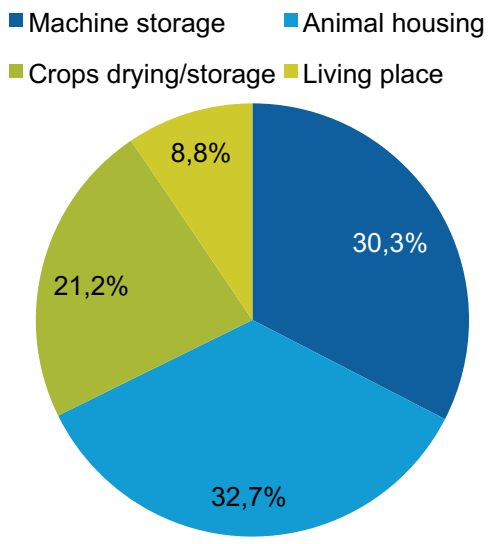
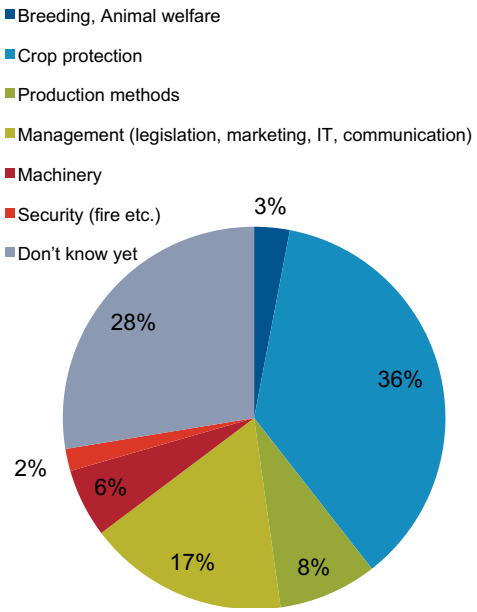
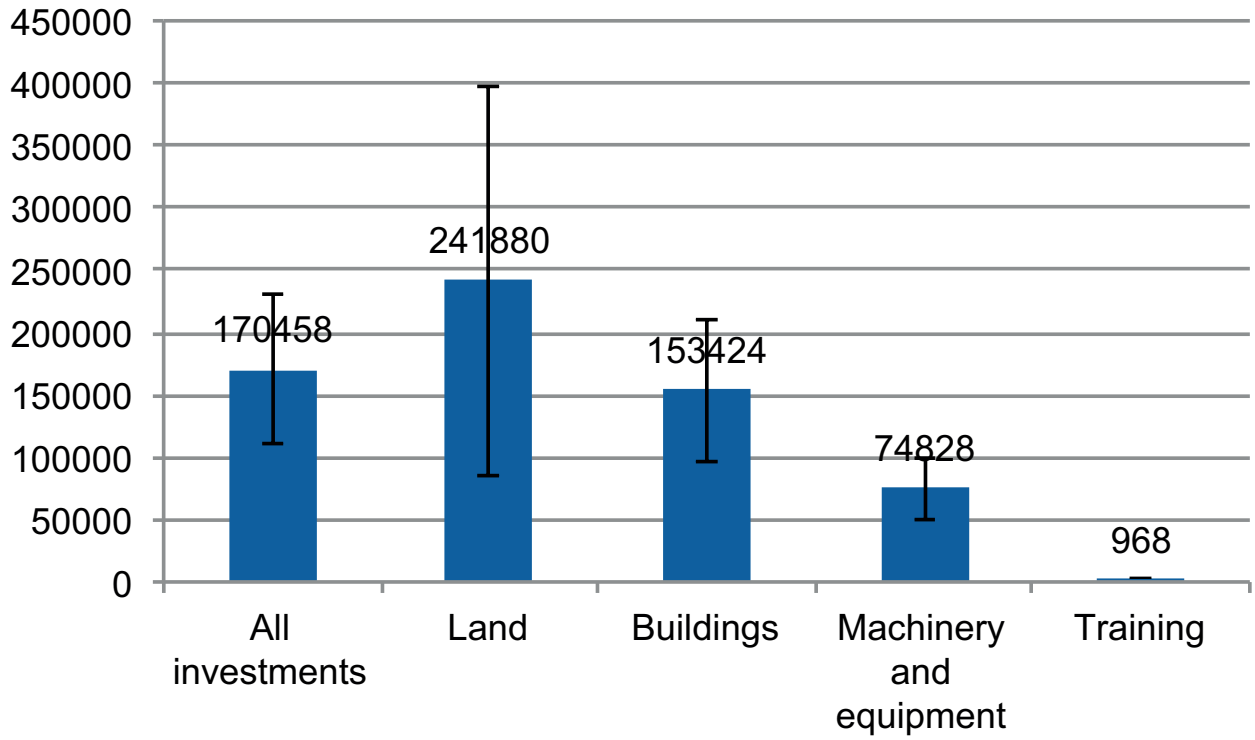


Figure 12: Intentions to invest in training by type



Farmers having manifested an intention to invest declare they will spend on average EUR 170 458 per farm. This total amount refers to the sum of expenditures of all investments in land, building, machinery and equipment and in training, including public and private expenditure for those investments receiving support. Farmers intending to invest in land plan to spend on average over the period 2014-2020 EUR 241 880 (for 12 ha on average), EUR 153 424 for buildings, EUR 74 828 for machinery and equipment, and EUR 968 for training (Figure 13).

Figure 13: Total amount of investments intended in the period 2014-2020 per farmer (EUR)



4.2 Reasons underlying the investment intentions

Farmers mentioned several expected benefits for the investment they foresee in 2014-2020. Overall, the main benefits expected are improved working conditions on the farm and an increase in the production quality. Interestingly, cost reduction and increased production quantity are not as often cited. For the investments in machinery and equipment, 39% of the farmers do not expect any specific benefit given that the investments are aimed at replacing old equipment. Interestingly, improving the environmental impact of the farm is an important expected benefit for training (the response given by 27% of the farmers with intentions to invest in training). Table 5 shows the responses related to the expected benefits from the investments.

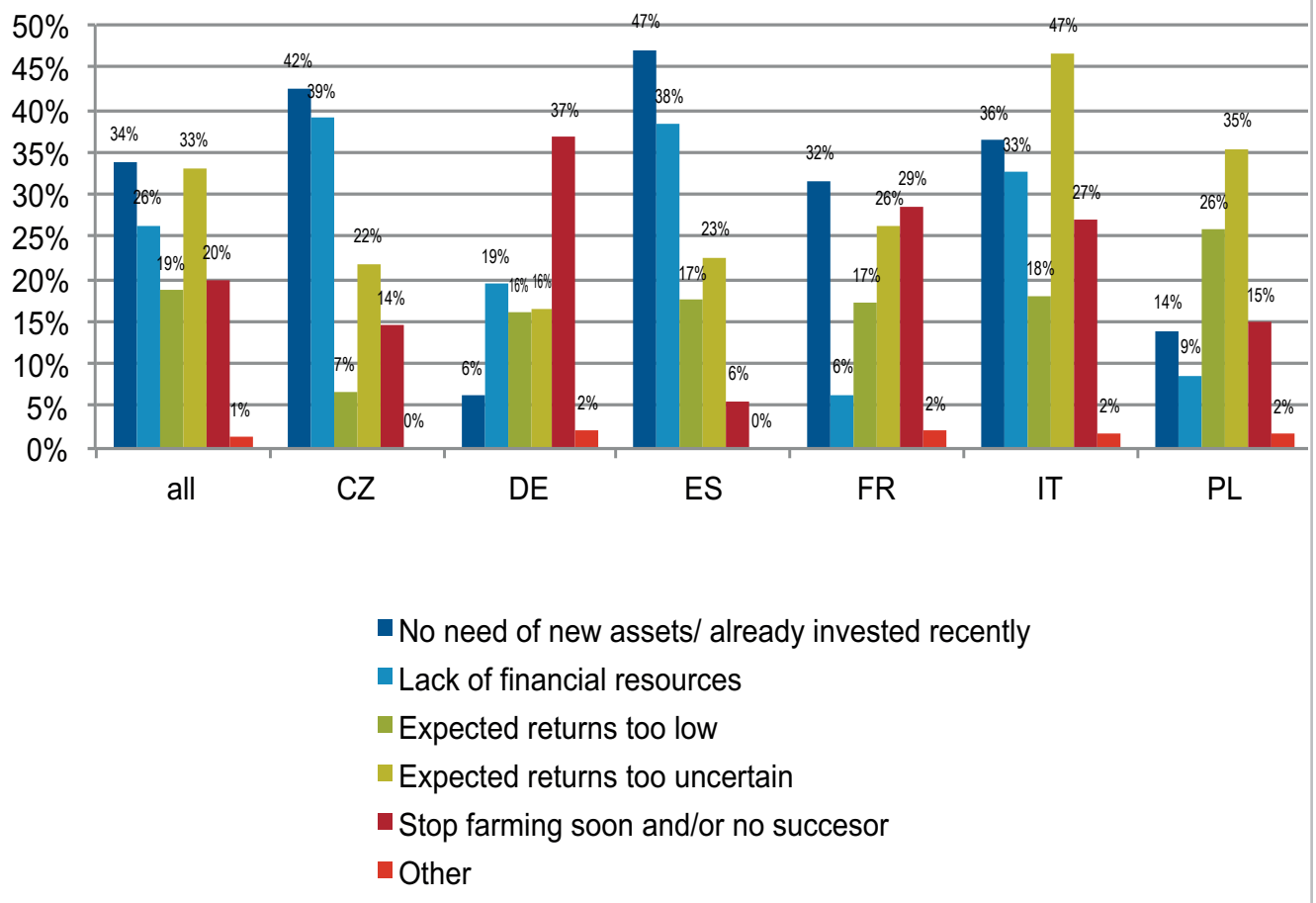
Table 5: Expected benefits of future investments

	Buildings	Machinery & equipment	Training	Total assets
To improve the working conditions on the farm	58%	52%	20%	40%
To increase the quality of production	44%	24%	55%	35%
To improve animal welfare	32%	2%	5%	8%
To increase yields or production	26%	26%	23%	27%
To reduce costs	19%	27%	25%	25%
To reduce the variability of farm income	12%	4%	5%	5%
To diversify the activities of the farm	10%	1%	3%	2%
To improve environmental quality	9%	12%	27%	12%
Other reasons	6%	3%	10%	5%
To replace old equipment	0%	39%	0%	19%

Note: Each farmer could select multiple responses; therefore the sum of the percentages is higher than 100% for each type of assets. No information on the expected benefits from land purchase was collected as we expect the main expected benefit would be to increase production, with little variability across farms.

For those 43.5% of farmers with no intention to invest during the 2014-2020 period, the main reasons cited for non-investment are: uncertain expected returns on investment (33%) and no need for new assets (34%). A lack of financial resources to invest only ranks third (26%) (Figure 14).[6] There are significant differences across countries in the distribution of these reasons (p-value = 0.03). In Italy and Poland, uncertainty on expected returns is the main limitation. German farmers not intending to invest are those with short time horizons in farming, and other limitations are not so relevant.

Figure 14: Reasons for not investing (multiple responses allowed)

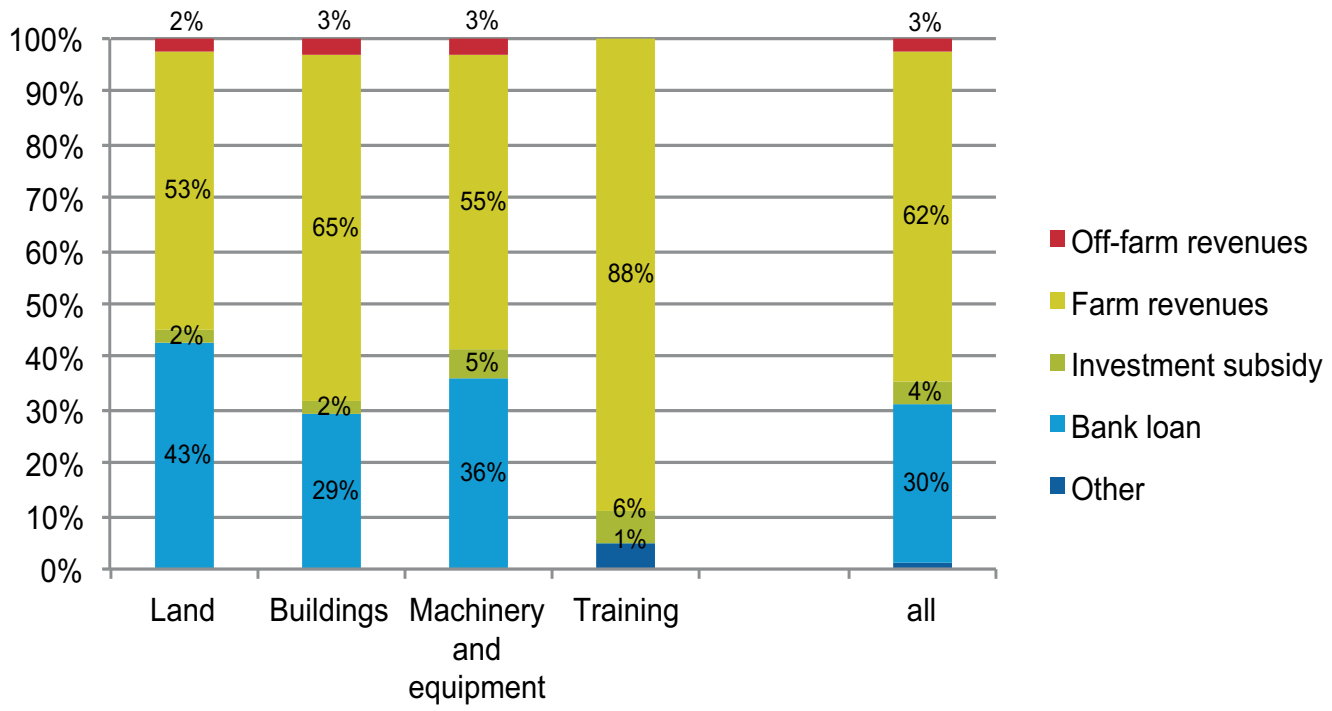


6 We have verified that that those farmers not intending to invest because of financial constraints have indeed significantly less access to credit: only 3.6% of the farmers declaring they face financial constraints have taken out a loan, while 29.9% of the farmers not intending to invest because of other reasons had access to credit over the period 2008-2012 (differences significant at the 1% level).

4.3 Financing the planned investment

Figure 15 details how farmers will finance the planned investments. Overall, financial resources from farm activities are the major source of funding (62%) of the investments planned. Moreover, 24.3% of all farmers with intentions to invest consider this as their only source of finance for their future investments. Farmers rely more on bank loans than subsidies: 30% of the farmers plan to ask for a loan as the major funding source, while only 4% expect to receive investment support subsidies to mainly finance their investment. This is true for all types of investments other than training, which is never financed by credit, which is understandable given that the cost of training is often low. A minority of 3% of the investments planned in land, buildings, and machinery and equipment will be funded mostly via off-farm revenues.

Figure 15: Percentage of intended investments that will be financed mainly though farm revenues, bank loans, investment subsidies and off-farm revenues

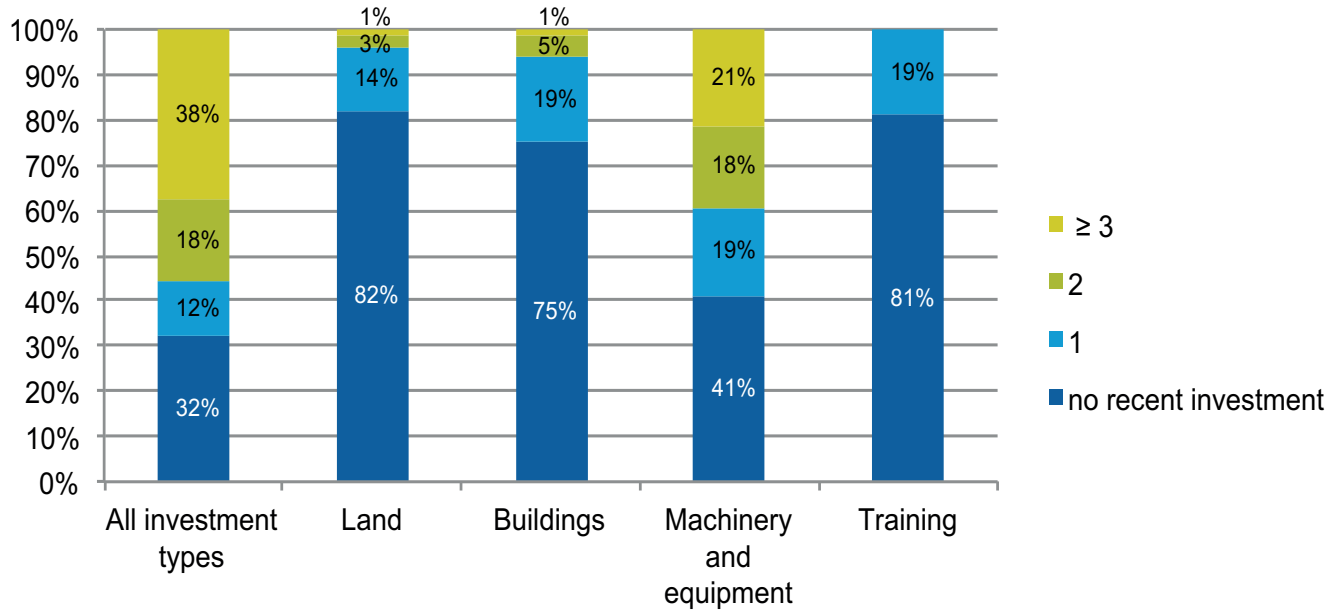


4.4 Recent investments undertaken by the farmer

Investments realised in the past constitute the existing capital stock. Farmers having invested recently may therefore not need to invest in new assets or may not have the financial situation to do so. On the other hand, farm development tends to be path dependent: farm development paths are such that farms with no expansion and modernisation strategy in the past usually will continue not to invest, while farmers already engaged in such strategies usually intend to invest further.

68% of the farmers have undertaken at least one investment in the period 2008-2012, for a total average amount of EUR 158 444 per farm. This total amount refers to the sum of expenditures of all investments in land, buildings, machinery and equipment, and training, including public and private expenditure for those investments receiving support. 59% of the farmers invested in machinery and equipment, while only 25% invested in buildings, 18% in land and 19% in training (Figure 16).

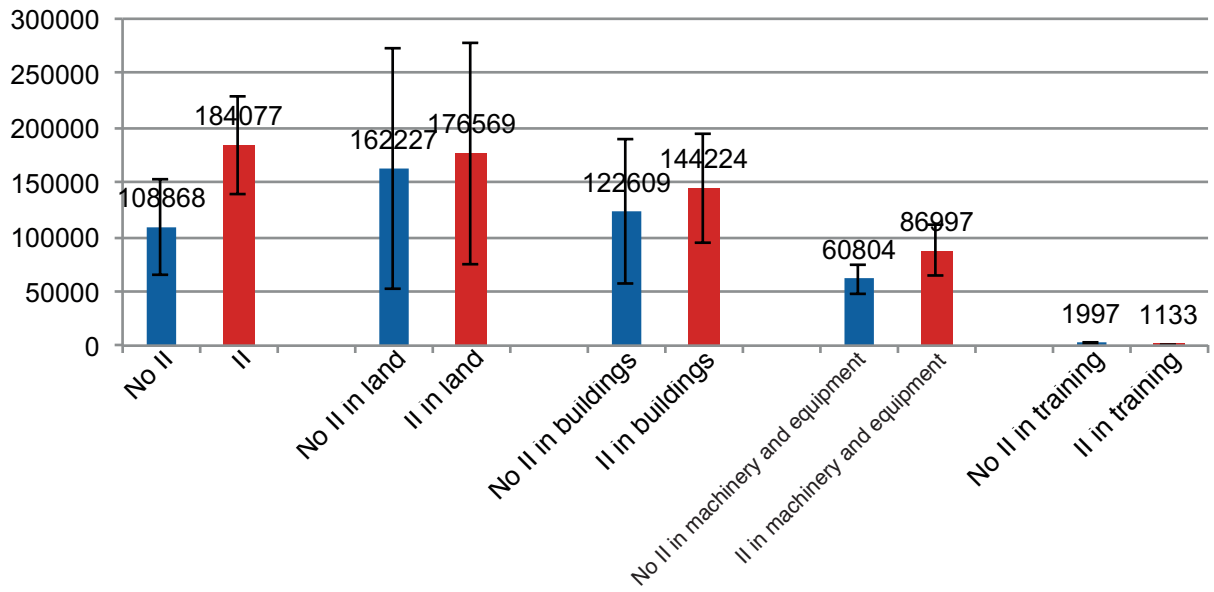
Figure 16: Number of investments undertaken recently (2008-2012)



Note: for training we only know whether farmers have invested in training or not. Therefore, the light blue corresponds to 'invested in training in 2008-2012', as opposed to 'did not invest in training' in dark blue. This includes only that training paid for by the farmer.

Our results confirm the hypothesis of path dependency of farm investments. We observe that 79% of the farmers intending to invest have invested recently and 65% of the farmers having invested recently are intending to invest. Moreover, the average value of the investments realised in 2008-2012 is significantly higher for the farmers intending to invest compared with those who do not intend to invest (p-value = 0.000), and this is true for all types of assets, other than training (land p-value = 0.028, machinery and equipment p-value = 0.000, buildings p-value = 0.062, training p-value = 0.718) (Figure 17). Finally, Table 6 shows that farmers who invested recently are more likely to intend to invest (compared to those who have not invested recently), both in the same asset class and with other assets. 52% of those who invested in machinery intend to invest again in machinery. But intentions to invest are also driven by the need for assets complementary to recently acquired assets. For example, 55% of those who invested in land in 2008-2012 are intending to invest in machinery and equipment, whereas only 37% of those who did not invest in land intend to do so. But for investments with longer lifespans and amortisation periods, such as investments in land or buildings, only a minority of the farmers who invested recently intends to invest again in the same asset. Only 38% of those who purchased land in 2008-2012 are intending to invest again in land in 2014-2020 while 39% of those having invested in buildings are intending to invest in buildings.

Figure 17: Value of the investments realised in the period 2008-2012, grouped by intentions to invest in 2014-2020.



Note: The bars 'II in land' corresponds to the value of investments in land realised in 2008-2012 of those farmers with intentions to invest in land in 2014-2020 (same for Machinery and equipment, Buildings, and Training).

Table 6: Proportion of farmers intending to invest in each asset class, according to whether they have invested recently in 2008-2012

		Investment realised in 2008-2012											
		Land			Building			Machinery and equipment			Training		
		no	yes		no	yes		no	yes		no	yes	
Intentions to invest in 2014-2020	Land	17%	38%	***	20%	24%	***	13%	26%	**	19%	29%	***
	Building	15%	43%	n.s	14%	39%	***	10%	27%	***	17%	32%	n.s
	Machinery and equipment	37%	55%	**	35%	56%	***	23%	52%	***	36%	60%	n.s
	Training	13%	30%	n.s	15%	19%	***	13%	17%	***	9%	43%	***

**** means that the difference is statistically significant at the 1% level, ** at the 5% level, and n.s. non-significant*

4.5 Characteristics of the farms with an intention to invest

Prior literature provides a basis for formulating a set of hypotheses on the influence of various factors of the farm structure likely to favour or discourage investment. According to neo-classical economic theory, new investments are realised when the sum of the discounted expected benefits over the life of the equipment are higher than the investment costs. In the absence of data on the expected returns from each particular investment, variables capturing farm characteristics can be used as proxies to explain investment intentions. These variables affect both the evaluation of the future returns from the investment and the resources available to finance the investment. A short review of the literature on the role of these factors is presented. Then, the results from the survey are presented. The statistical significance of the differences between the characteristics of the farms and farmers intending to invest and the others are computed by the mean of Student tests (continuous variable) and Chi-squared tests (categorical variables) on the weighted sample.

4.5.1 Farm location

Despite the EU single market and the CAP, there are important differences across countries in farm income, input and output prices, as well as the functioning of market factors among EU Member States (in particular, the transaction costs associated to investments vary substantially across countries (Swinnen and Knops 2013)). All these factors can explain the heterogeneity observed across Member States in their intentions to invest. According to Figure 18, Italian farmers are less likely to be intending to invest (only 28% are intending to invest), while French and German farmers are more likely to invest (67% and 76%, respectively) in 2014-2020. The proportion of farmers in each country differs significantly between the group of farmers intending to invest and the others (p-value = 0.0001). This is true for all assets other than training, where intentions to invest in training are not significantly different across countries.

We also observe differences in the nature of the investments foreseen (Figure 19). While investments in machinery and equipment dominate the scene in all countries, Italian farmers are more likely to invest in buildings than machinery and equipment. The frequency of intentions to invest in buildings among Spanish farmers is very low. We observed also a relatively high share of Polish farmers willing to invest in training compared to other countries. The distribution of farms by country is significantly different in the group of farmers intending to invest overall and those not intending to invest, but also in all assets other than training (p-value<0.05 for II, II in land, II in building, II in machinery and 0.2764 for II in training).

Figure 18: Percentage of farmers intending to invest per country

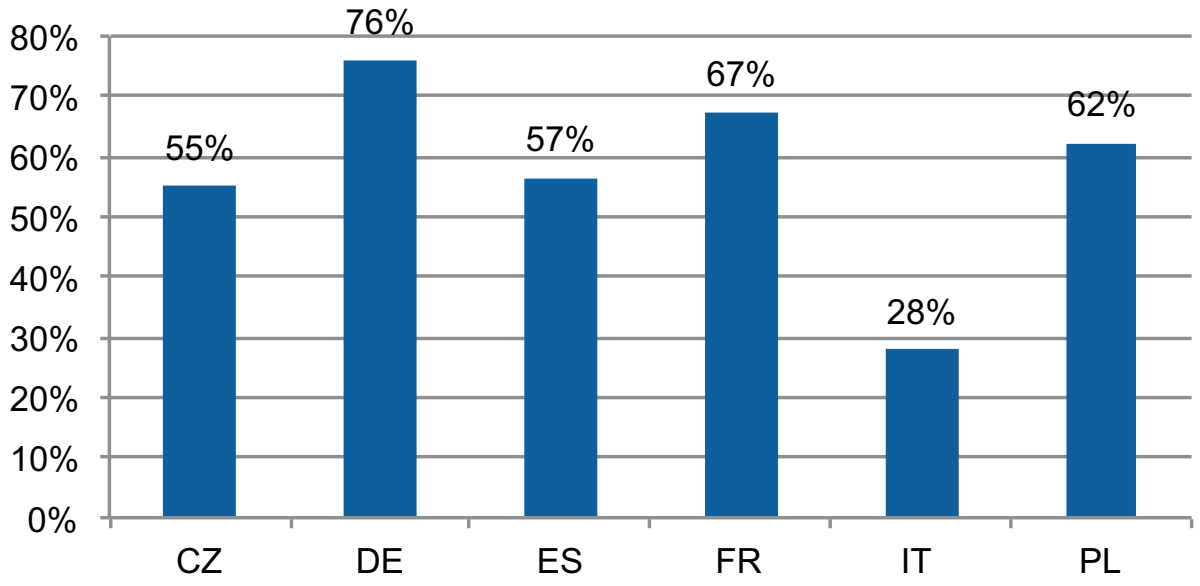
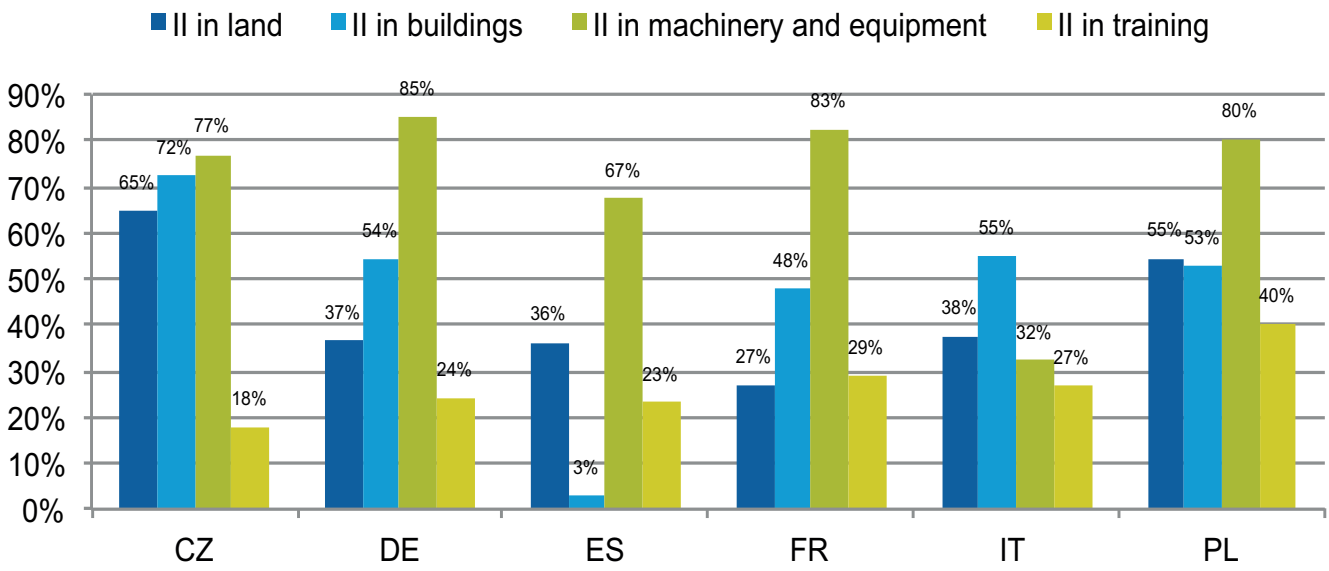
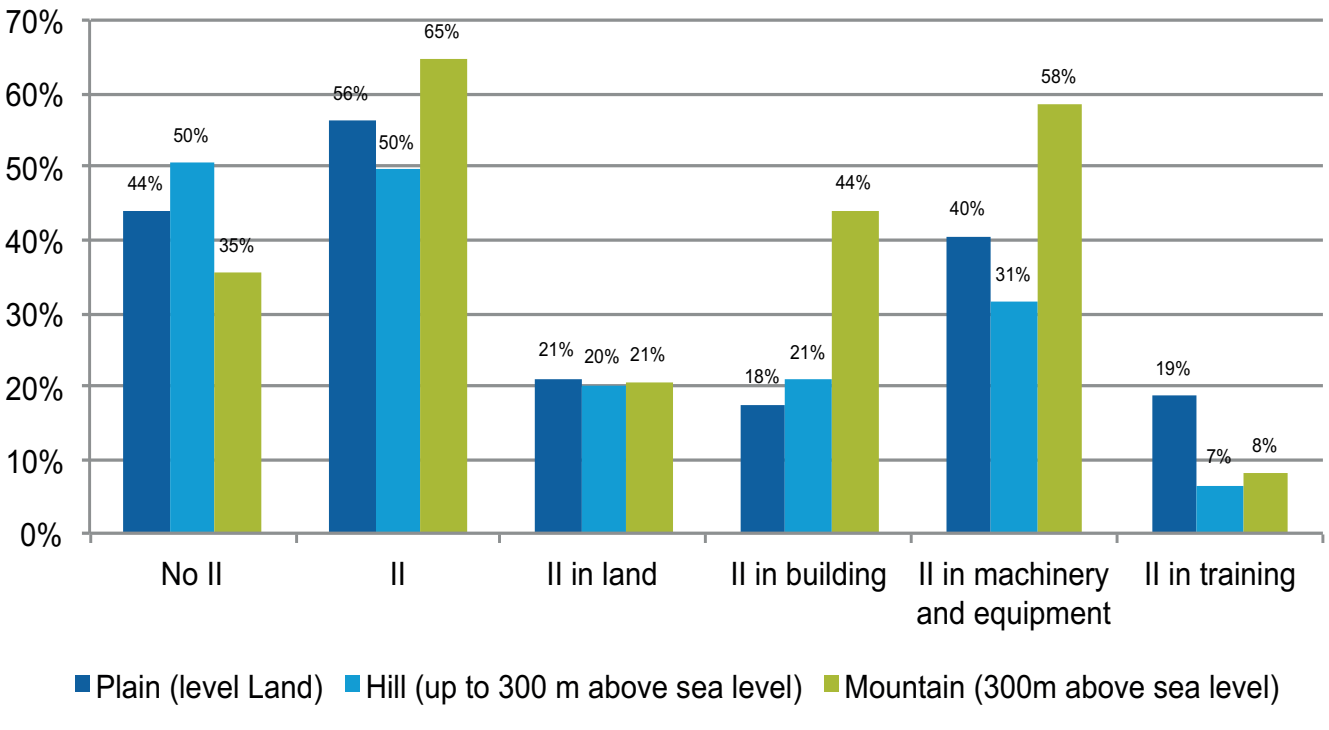


Figure 19: Percentage of farmers intending to invest in each type of asset per country (in proportion of the farmers intending to invest)



Beyond differences across countries, the farm location within a country is also likely to impact farm productivity and therefore the return on investment, as well as the ease of access to new assets. We found that the distribution of farms between the plains, hills and mountains is not significantly different between farmers intending to invest and the others (chi-squared, p-value = 0.4406) (Figure 20). But there are some significant differences for specific assets such as machinery and equipment (p-value = 0.0623), buildings (p-value = 0.0044), and training (p-value = 0.0269). Mountain farmers are overrepresented in the group of farmers intending to invest in buildings and machinery and equipment, but the effect of farm location is not easy to disentangle from a country effects since 57% of the mountain farmers interviewed are in Germany and 26% in France, which are countries with high investment intention rates in such assets.

Figure 20: Percentage of farmers intending to invest by farm location (plain, hill, mountain)



4.5.2 Farm size

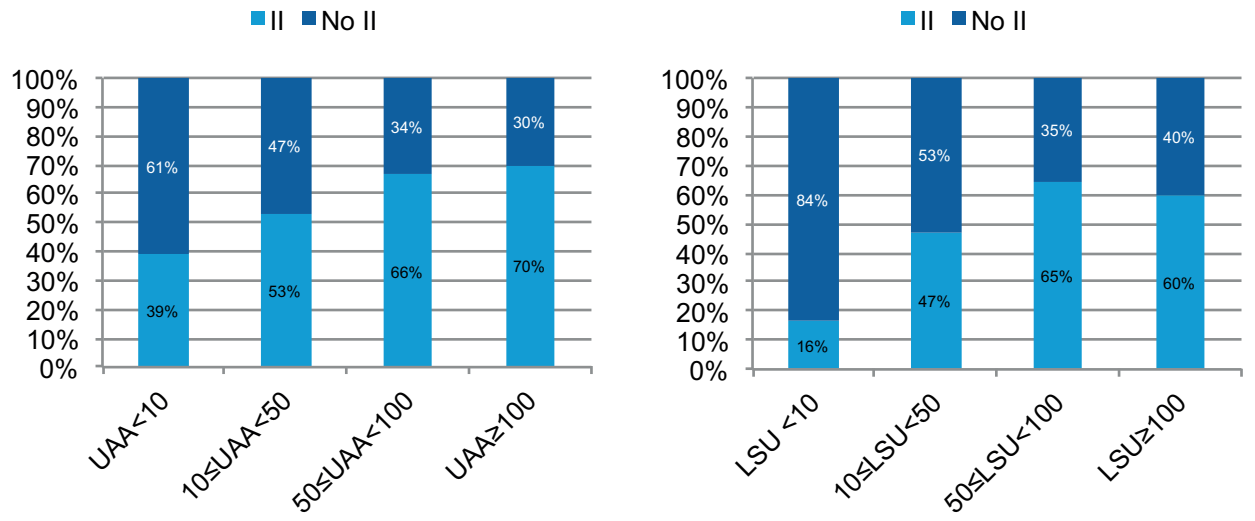
According to Figure 21, the largest farms more often intend to invest. The distribution of farms by categories of farm size in the group of farmers intending to invest and the others is significantly different (p-value = 0.0281 for UAA and p-value = 0.0536 for LSU). Moreover, farmers' with intentions to invest have significantly larger farms in terms of UAA (46 ha on average) compared to farmers not intending to invest (71 ha, p-value = 0.004), but the difference is not significant with regards to LSU (126 ha vs 144 ha, p-value = 0.229) of the livestock and mixed farms.

Farmers intending to invest also have a higher share of rented land in their UAA (32%), compared to 26% for those not intending to invest, but the difference is not significant (p-value = 0.183).

When looking at farm size in terms of paid labour force, we do not find any significant differences in the average number of permanent workers between farms intending to invest (0.66) and the others (0.67) (p-value = 0.924). The data collected does not allow observing the differences in terms of family non-paid labour.

The proportion of individual companies is not significantly different across the group of those intending to invest and the others (90% in both cases, p-value = 0.9948). This result holds in all countries even if the proportion of each legal status differs across countries.

Figure 21: Intention to invest by farm size (Left: UAA in hectares; Right: LSU of livestock and mixed farms)

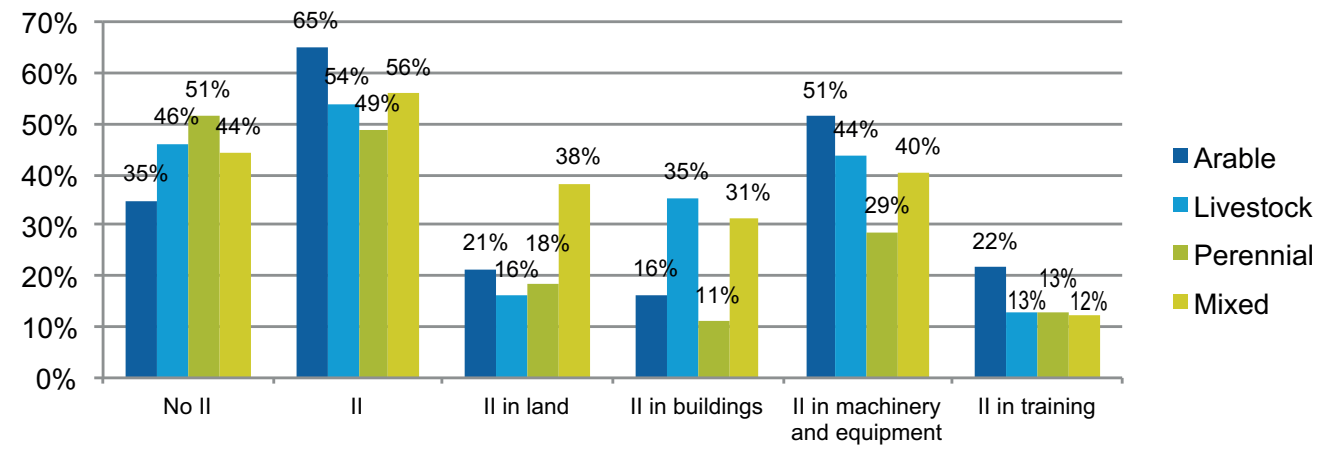


4.5.3 Farm specialisation

Enterprises across different farming systems have very different requirements for capital and technology, and thus have very different investment strategies. Moreover, revenues generated by the farming activity also differ according to the type of specialisation and this therefore influences the potential return from investment.

Figure 22 presents the intentions to invest per farm specialisation. 65% of the arable crop farmers, 54% of the livestock farmers, 49% of the perennial crop farmers and 56% of the farmers with mixed production intend to invest. But the distribution of farms by specialisation in the group of farmers intending to invest and the others is not significantly different (p-value = 0.2135). The differences across farm specialisation concern the type of investments foreseen. The distribution of farms by specialisation in the group of farmers intending to invest and the others is significantly different for the intentions to invest in land (p-value = 0.0877), buildings (p-value = 0.0004) and machinery and equipment (p-value = 0.0546). Investment in land is most often planned by mixed farms, while livestock farms most often foresee investing in buildings. Arable farms most often plan to invest in machinery and equipment. Farmers with perennial crops are overall less likely to invest in the assets we asked about (49%). Farmers with perennial crops may be more likely to invest in plantation, but no information was collected on the intentions to plant new trees.

Figure 22: Intention to invest per farm specialisation



4.6 Characteristics of the farmers with an intention to invest

Beyond farm structure, we expect that farmers' economic and socio-demographic characteristics, as well as their attitudes and perspectives concerning their future in farming are likely to impact their decisions to invest. The role of farm structural characteristics as determinants of investment decisions are often overstated, while management theory stresses the importance of the characteristics of the firm-operator in explaining business decisions, and investment in particular. The unique relationship between the farm household and the farm business implies that decisions relating to production depends on the characteristics of the individual farm, as well as on those of the farm head and farm household, since decisions related to production, consumption, labour supply and leisure for all family members are made simultaneously (Pufahl and Weiss 2009). Moreover, previous research has shown that the farm head decision-making is not only driven by profit maximisation objectives, but is also influenced by their values and beliefs (Vesterlund Olsen and Lund 2011). Behavioural approaches in agricultural studies seek to understand the behaviour of individual decision-makers, usually the farmers or land managers directly responsible for the land, and focus on psychological constructs such as attitudes, values and goals, but also commonly gather additional relevant data on farm structure, economic situation, successional status, etc. (Morris and Potter 1995). We focus here on these individual and behavioural factors in order to assist characterising those farmers intending to invest.

4.6.1 Farm household life cycle

When analysing decisions with medium- and long-term impacts, such as investment, it is important to understand the life cycle and time horizon of decision-makers. The farmer's age and future perspectives concerning farm exit and succession are two factors related to the life cycle of farm households. It is generally expected that a shorter time horizon for these will reduce their intentions to invest, but conversely, that the presence of a successor can hold farmers back from disinvesting. It has been shown that a higher value of total farm assets increase the probability that the farm will be handed down to a successor (Calus, Van Huylenbroeck et al. 2008; Mishra and El-Osta 2008). A lower age and the presence of a successor mean that the farmer can take a longer time horizon into account. A longer time horizon implies that future costs and benefits of investments are discounted over a longer period, and that the profitability of investments increases. Life cycle factors are therefore crucial in the decision to invest.

Previous literature also suggests there is some ambiguity on the effects of age. On the one hand, older farmers may find it easier to obtain finance due to well established relationships with financial providers. But on the other hand, younger farmers have a longer investment horizon with which to realise a return on investment, making banks or other potential investors more likely to lend. In the survey, young farmers (<40 years old[7]) more frequently intend to invest over older farmers (>60 years old), but the difference is not significant (Figure 25). This suggests that the farm head's age is a relatively poor indicator of the structural and managerial features and the life cycle of the family farm, when pluri-activity and a larger scale of family farms lead to the use of more diffuse management/operating systems (Burto 2006).[8]

While most of the farmers interviewed do not know when they will stop farming, 17% of the farmers plan to stop farming in less than 10 years, while 31% declare that they will continue for at least 10 years (Figure 23). 39% of the farmers plan to have no successor (Figure 24). However, when a successor is already identified, they are in a large majority a member of the family.

Not surprisingly, we observe that farmers planning to stop farming in less than 5 years are less likely to be intending to invest, compared to farmers planning to stop farming in 6 to 10 years or in more than 10 years (Figure 26). Uncertainty on a retirement date seems to deter investment intentions since those uncertain about when they will leave farming are also less likely to intend to invest. There are significant differences in the distribution of end-farming time horizons between those intending to invest and the others (p-value = 0.0721).

Farmers declaring that they have no successor are less likely to intend to invest than those with an identified successor. Whether the successor is a family member or not does not seem to impact on the intentions to invest. Farmers uncertain about their succession are significantly more likely to intend to invest, possibly because they are not planning to stop farming in the short term (Figure 27). This suggests that being certain of not having a successor is a clear drag on investment, while only being uncertainty on succession does not deter investments. There are significant differences in the distribution of succession profiles between those farmers intending to invest and the others (p-value = 0.0424).

7 Definition of young farmer according to Council Regulation (EC) No 1698/2005 on support for rural development by the European Agricultural Fund for Rural Development. Young farmers are eligible in priority for investment support, in particular through measure 112.

8 Burto (2006) proposed an alternative indicator: a family age index, compiled by averaging the ages of the family members working on the farm.

Figure 23: Plan to stop farming

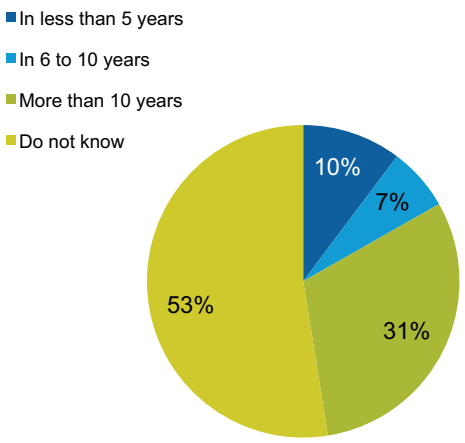


Figure 24: Successor for the farm

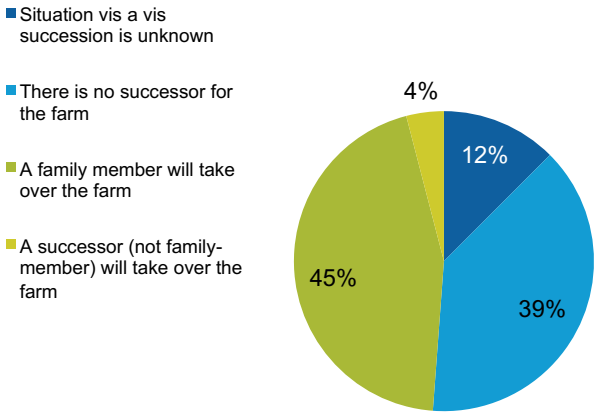


Figure 25: Intentions to invest by farm head age

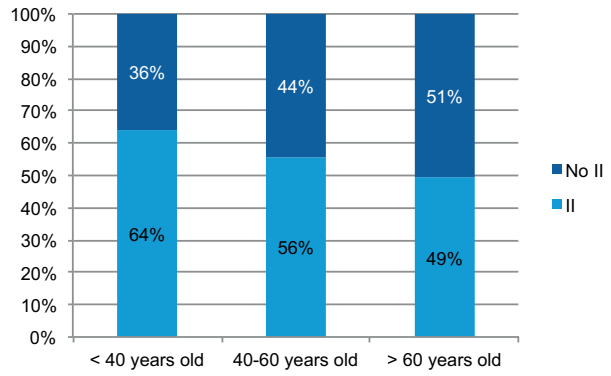


Figure 26: Intention to invest by expected date of retirement from farming

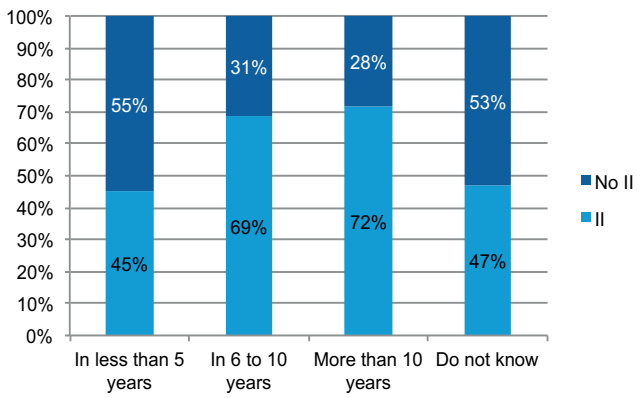
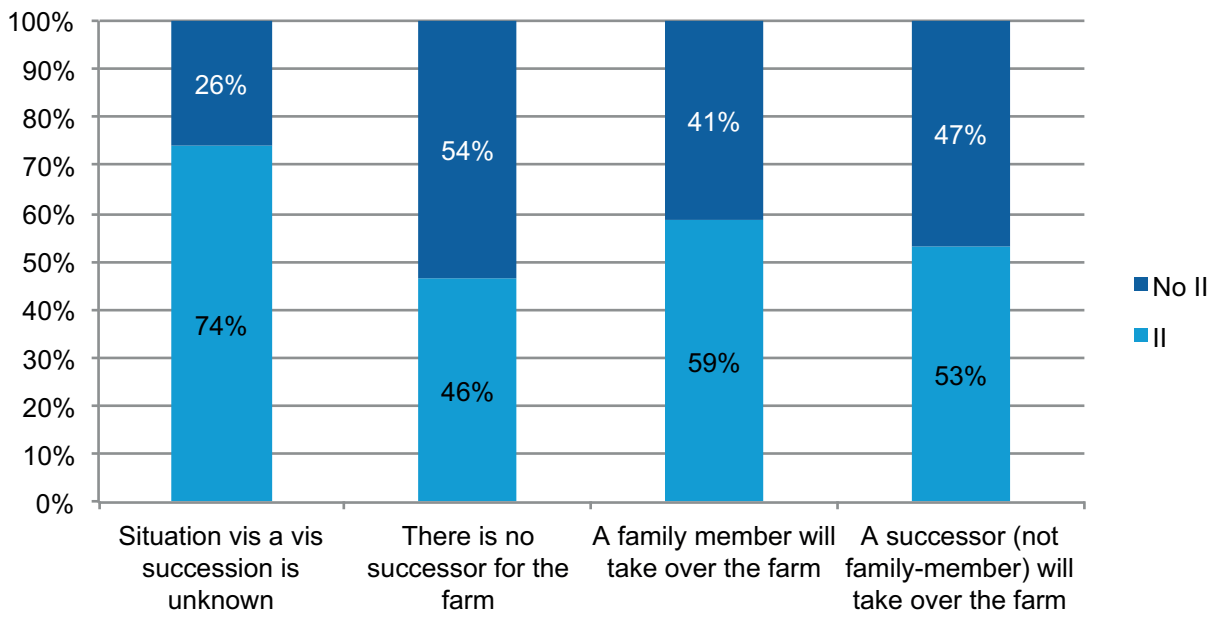


Figure 27: Intention to invest by succession profile



4.6.1 Farmers' education

In the presence of transaction costs, it is usually assumed that the farmer's level of education is a key element in explaining different behaviours, especially for land transactions where the transaction costs are the highest (Gardebroek and Oude Lansink 2004). The majority of the farmers in the survey sample have received only secondary education (Figure 28). Farmers with post-secondary and tertiary education are more likely to intend to invest (Figure 29). There are significant differences in the educational levels (from 1 to 4) of those farmers intending to invest and the others (p-value = 0.0885).

Figure 28: Farmers' education

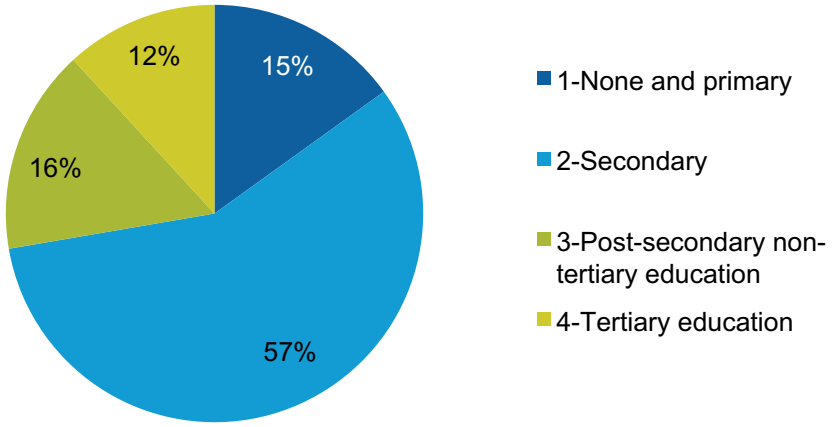
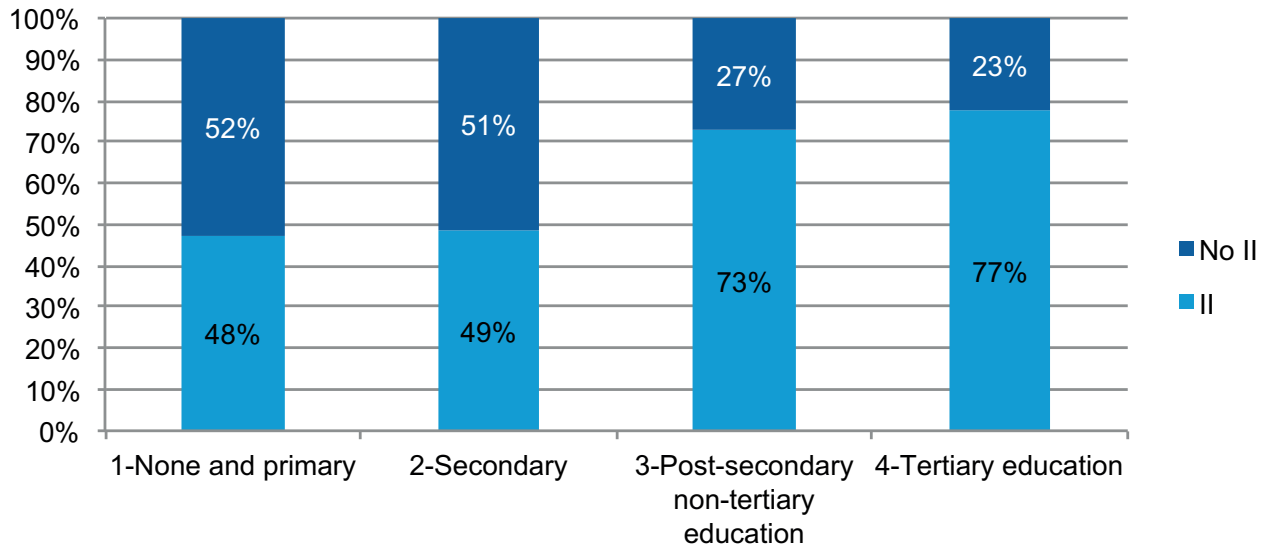


Figure 29: Farmers' intentions to invest by level of education



4.6.1 Diversification of farmers' activities

Previous empirical studies of farm investment have found statistically significant relationships between farm investment and the existence of other income-generating activities on or outside the farm, albeit there is no consistency in the direction of the relationship.

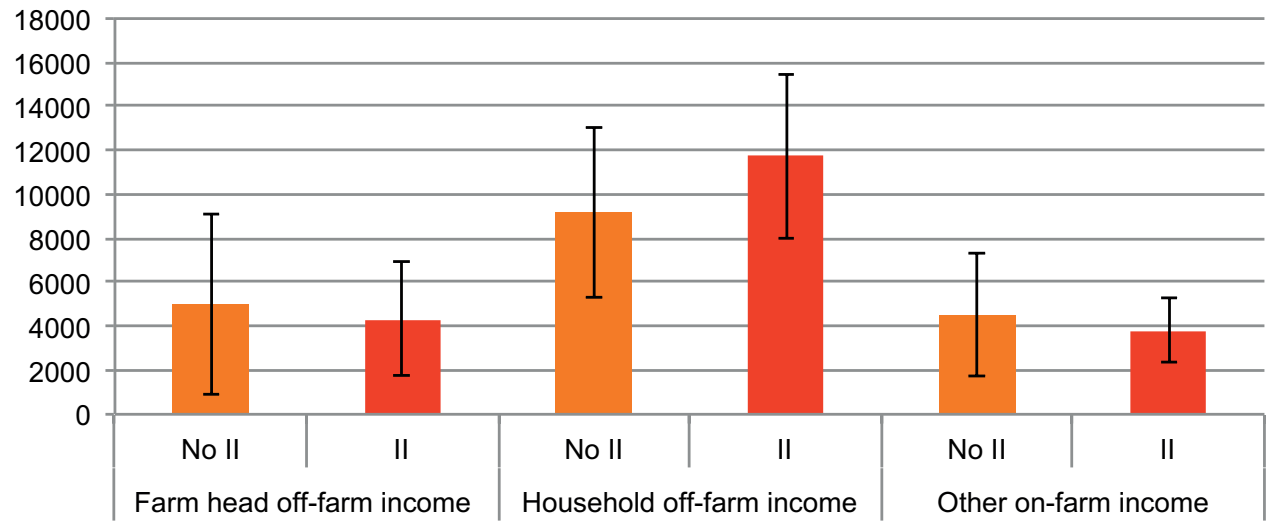
On the one hand, economic theory suggests that it may be rational for part-time farmers to substitute capital for labour, thereby releasing labour for off-farm work while still maintaining farm output. Upton and Haworth (1987) and Weiss (1997) found evidence to support the substitution effect, as both found significant positive relationships between farm growth and off-farm income, suggesting that farms with higher levels of off-farm income were more likely to grow their farms through investment. Moreover, stable off-farm incomes can ameliorate the financial constraints to investing in farm capital (Rosenzweig and Wolpin 1993).

On the other hand, off-farm activities reduce the time dedicated to the farm, and therefore can discourage expansion of the farm business in terms of farming activities (Hennessy and O' Brien 2008) and can encourage an increase in investment in non-farm assets relative to farm assets (Andersson, Ramaswami et al. 2005). The transition from full-time to part-time farming can often be perceived as a first step out of farming, and therefore farmers that work off the farm might not be expected to reinvest in farming. Farmers that work off the farm may also have lower expectations of continuing the farm business, and be less likely to have a successor, and as a consequence may be less likely to invest in their farms (Glauben, Tietje et al. 2004). Moreover, when part-time farmers operate more extensive and less profitable farms, lower rates of returns will further discourage investment (Harris, Blank et al. 2010).

In our sample, 21% of the farmers obtain income from other non-farming activities carried out on the farm (e.g. the processing of farm products, from recreational and tourism activities, energy production, rental of farm machinery), corresponding to an average of EUR 4 137 of net income per year. Moreover, 28% of the farmers receive at least EUR 5 000 per year of income from other activities outside the farm and 32% of the households.

Overall our results do not enable strong conclusions to be drawn on the impact diversification into non-farming activities has on on-farm investment. Concerning the farm revenues obtained from non-farming activities, we do not find significant differences between those farmers intending to invest in land, building, machinery and equipment, or training[9] and the others (p-value = 0.664). Farmers with an off-farm job are equally likely to intend to invest that those who only work on-farm, and there is no significant differences in the non-farm income received by the households intending to invest and the others (p-value = 0.7881) (Figure 30). Lastly, the percentage of the professional time dedicated to the farm is not significantly different for farmers intending to invest and farmers not intending to invest (farmers with no intention to invest spend on average 93.6% of their professional time on the farm versus 94.5% for those intending to invest, p-value = 0.609).

Figure 30: Non farming income in EUR



9 Investments related to the diversification of farm activities were not covered by this study.

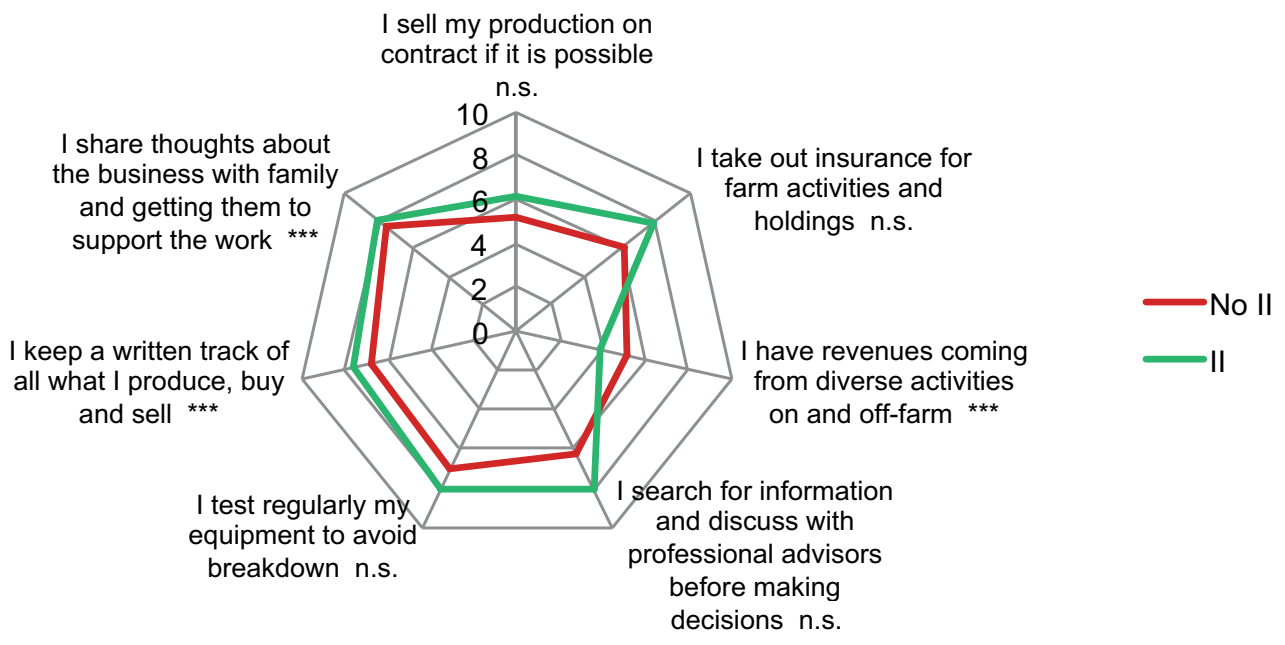
4.6.2 Farmers' attitudes

Beyond farmers and farm households' characteristics, this study investigated whether farmers attitudes have an influence on their decision-making and, more specifically, on their intentions to invest. Attitude is a disposition to respond favourably or unfavourably to an object, person, institution or event (Kim and Hunter 1993). The questionnaire focused on attitudes towards good management practices, innovation, and the environment, all considered as potential subjects relevant to investment intentions.[10]

We observed that farmers intending to invest are more likely to employ practices qualified as 'good farm management' (Figure 31), and to have a positive attitude towards innovation (Figure 32) than farmers not intending to invest. Both groups however do not differ from each other in their environmental attitudes (Figure 33). This seems to suggest that even if the modernisation of farms can improve the sustainability of farming practices, e.g. through investments in new machinery or training, farmers' attitudes towards the environment are not a driver of their intentions to invest.

We tested the hypothesis that the difference between the average score of the farmers with intentions to invest and those not intending to invest is zero for each item and show the survey results in Figure 31 to Figure 33.

Figure 31: Farmers' attitudes towards good farm management practices

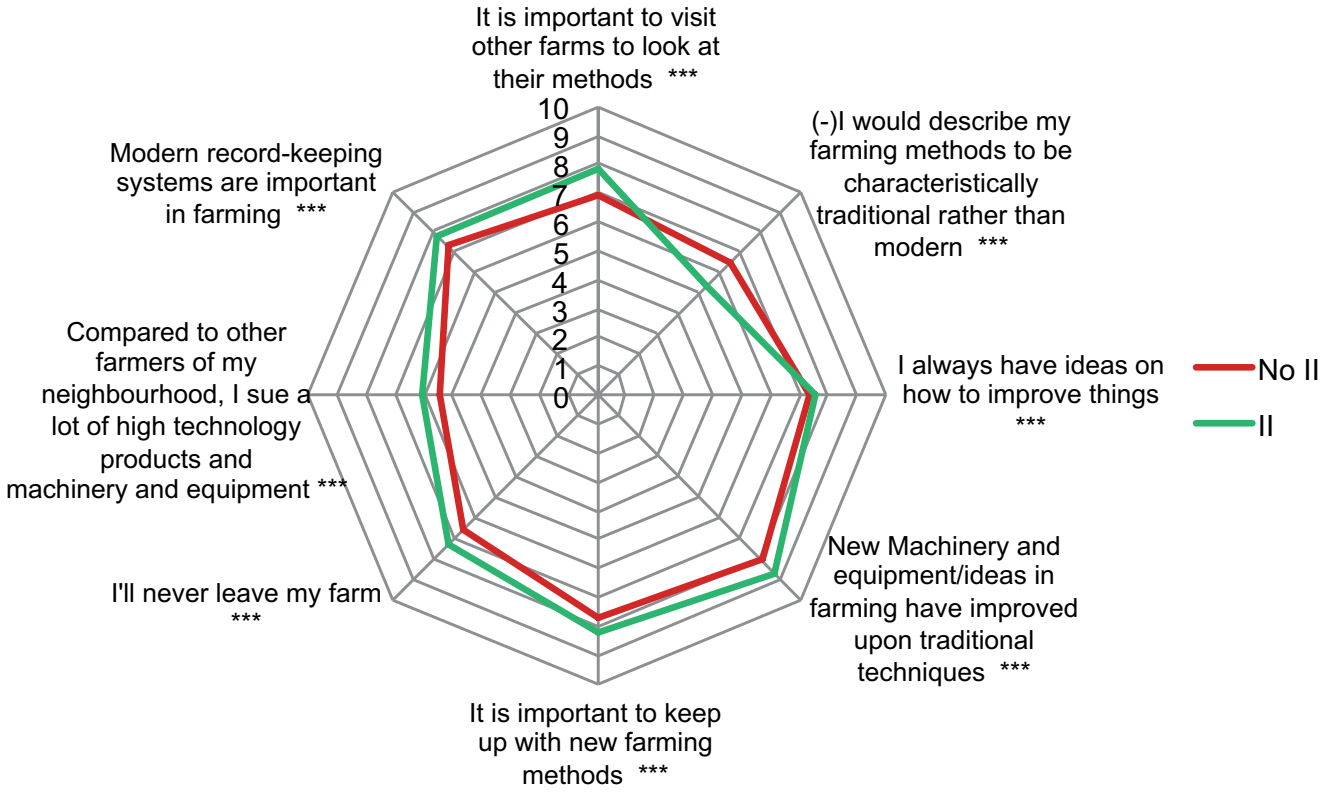


Note: Responses to the question 'How likely are you to ever find yourself in each of the following situations?', graded from 1 ('Extremely unlikely') to 10 ('Extremely likely')

****, ** and * represent statistical significance at 1%, 5% and 10% level,respectively.*

10 In the questionnaire, environmental attitudes were questioned together with the innovation attitudes in two different questions (questions A12 and A15), but no significant order effects were found. Accordingly, both scales, i.e. environmental attitudes and attitudes towards innovation, can be analysed separately as intended.

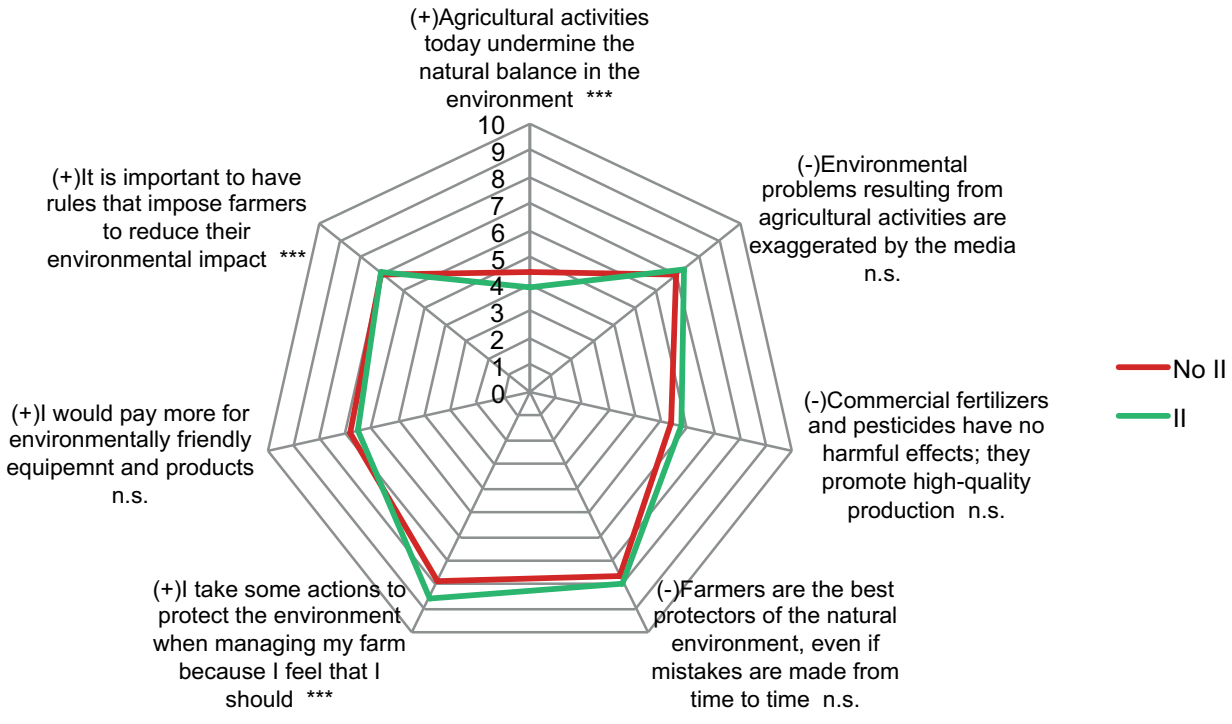
Figure 32: Farmers' attitudes towards innovation



Note: Responses to the question 'To what extent do you agree or disagree with the following statements?', graded from 1 ('Extremely disagree') to 10 ('Totally agree')

****, ** and * represent statistical significance at 1%, 5% and 10% level,respectively.*

Figure 33: Farmers' attitudes towards the environment



Note: Responses to the question 'To what extent do you agree or disagree with the following statements?', graded from 1 ('Extremely disagree') to 10 ('Totally agree')

****, ** and * represent statistical significance at 1%, 5% and 10% level,respectively.*

5 The role of the CAP in fostering intentions to invest

5.1 Results from the literature

The evaluation of the impact of CAP payments on farmers' investment decisions has received significant attention in recent years in the literature. It is widely recognised that both CAP direct payments and RD payments supporting investment can impact investment decisions, although through different channels.

Direct payments reduce the risk profile of income streams and reduce farm bankruptcy risk (Vercammen 2007). This is likely to increase farmers' willingness to take risky production decisions, including investments. Decoupled payments may also have the effect of relaxing credit constraints in the presence of capital market imperfections. Lenders may perceive recipients of decoupled payments as being more creditworthy because the payments increase collateral values for land owners and increase repayment capacity, thereby reducing lenders' exposure to risk of loan defaults (Bursher and Hopkins 2003).

However, several empirical studies have highlighted the limited impact of direct payments on investment intentions. Gallerani et al. (2008) found that a large number of farms do not react significantly to decoupling, but that decoupled payments can nonetheless play a role in contributing to farm development choices, particularly by way of their interactions with credit constraints. These results are generally consistent with Latruffe et al. (2010), who showed that the introduction of Single Area Payments (SAP) in Lithuania had a significant positive influence on farmers' intentions to expand their farm area compared to a baseline scenario, with this effect being more relevant on farms that were previously credit constrained. Viaggi et al. (2010) found that prices are more important than policy for the sustainability of farming systems. Similar results were achieved by Sckokai and Moro (2009), who found that an increase in intervention price could significantly affect farm investment, mainly through reduced price volatility, while an increase in the Single Farm Payment would have much less impact. In a recent paper, Guastella et al. (2013) developed a comparative analysis, among different European Union Member States, of the investment demand for farm buildings and machinery and equipment under the hypothesis of different types and levels of Common Agricultural Policy (CAP) support. The effect of CAP support on both types of investments is positive, although seldom significant. The simulations of the effects of the reductions in the CAP Direct Payments (DPs) confirm the expectation of a worsening of the farm investment prospects for both asset types. Notable exceptions concern the investment in machinery and equipment in France and Italy, which is improved, irrespective of the magnitude of the implemented cuts in DPs. Viaggi et al. (2010) highlighted the differing and contrasting reactions of farm households to policy changes (decoupling). The main conclusion is that the diversity of farm specialisations and the dynamics of long-term adaptation should be taken into account more explicitly in the evaluation of policy impacts on EU farming systems.

While direct payments can foster investment through income support, one of the key objectives of the RD investment support is to promote investments that otherwise would not have been undertaken (the principle of 'additionally'), because the cost is too high and/or because the farmer has only limited access to credit. Credit restriction can be either be due to external factors (e.g. the farmer's application is refused by the bank) or internal ones (e.g. the farmer does not apply for the loan because he does not think he meets the conditions of the loan contract or he is discouraged by the high costs of the application process) (Čechura 2008). CAP investment support aims to overcome these limitations. In CAP 2007-2013, the investment support offered also covers support for the modernisation of agricultural holdings ('measure 121'), support for setting up of young farmers ('measure 112') and support for adding value to agricultural and forestry products ('measure 123'). The total expenditure, number of beneficiaries and volume of investments realised thanks to the CAP investment support are presented in Table 7. The RD payments are not automatically granted to all farms but are subject to project approval, where projects are evaluated on the basis of eligibility criteria defined in the RD programmes. Investment support takes different forms according to Member States: one-time grants, subsidised interest rates, loan-guarantees or retarded loan payback. The one-time subsidy and subsidised interest rates can directly reduce the cost of investment, and thus also reduce the investmentrisk, whereas the loan guarantee makes agricultural loans more accessible to farmers and reduces

the problem of external credit rationing. Retarded loan payback and interest rate subsidy can limit internal credit rationing (Čechura 2008). While the first instrument is used widely in the EU, the other instruments are less widespread (Bergschmidt and Dirksmeyer 2006).

While no EU-wide evaluation of investment support has been published yet by the European Commission[11], recent evaluations of RD investment support in specific regions and farming sectors have shed light on the risk of 'deadweight loss', for example when beneficiaries would have undertaken comparable investments even without the investment support. These evaluations rely on the calculation of net impacts based on counterfactual analysis[12]. Kirchweger, Eder et al. (2011) found only an insignificant effect of investment support programme on farm income in Austria among dairy farms but a significant positive effect for granivore farms. Ratinger, Medonos et al. (2013) (updating the work of Medonos, Ratinger et al. (2012)) found that the deadweight loss of measure 121 in Czech Republic is rather low on average, but is high in large farms. They conclude that the programme could improve its social efficiency if it were targeted at small and medium-sized farms. Michalek, Ciaian et al. (2013) found that there is no significant average effect of participation on total assets, suggesting that there is a strong deadweight loss of the investment support policy among their studied dairy farms in Schleswig-Holstein (Germany).

These results can be explained by intra-firm and inter-firm substitution effects potentially cancelling the overall impact of investment support (Michalek, Ciaian et al. 2013). First, investment support can potentially trigger an inter-temporal relocation of investments: firms may bring forward investments originally planned for the post intervention period. In this case, a positive effect of investment subsidies is not a proof of the complementarity effect as, without the support, the same investment would have been undertaken in the following period. Moreover, there is a risk of an overall nill effect if the positive effect on supported farms is at the expense of farms that do not participate in a given programme. For example, due to the RD payments, factor prices (e.g. land rents, loan interest rates) may increase or output prices may decrease, therefore impacting negatively on non-participants. The impact of support on non-beneficiaries is usually not measured, therefore erroneously showing a positive effect.

Table 7: Support to farm investments in RD Policy 2007-2013 (EU-27 level)

	121	112	123
Programmed total public expenditure (in EUR billion)	18.4	4.91	8.7
Percentage of EU Rural Development budget (EAFRD contribution)	12%	3%	6%
Number of farm holdings supported 2007-2011	163 000	77 925	16 058
Volume of investments 2007-2011 (in billion €)			
= the sum of all public and private expenditure of all the tangible and/or intangible investments made by farm holdings, receiving support for improving the overall performance of the farm (measures 121, 123, 311), or investments made by young farmers when setting up a holding (measure 112)	27.7	8.3	11.9
Source	(ENFRD 2013)	(ENFRD 2013)	(ENFRD 2013)

11 The evaluation of investment support under Rural Development Policy is on-going (December 2013-November 2014, AGRI-2013-EVAL-06). This evaluation is intended to measure the effectiveness, efficiency and impact of the investment support in ten territories selected as case studies. It is also expected to provide an assessment of the methodologies commonly used to evaluate the impact of investment support, as well as an assessment of the mechanisms and criteria used to target investment support.

12 The existence of systematic differences between programme participants and non-participants requires separation of the 'true' effect of programme participation (the 'causal effect') from the effect of initial differences in characteristics of the two groups (the 'selection effect').To distinguish between the two effects, an evaluator has to answer the following question: 'How much did farms participating in the programme benefit compared with what they would have experienced without participating in the programme?'. The fact that this counterfactual situation cannot be observed constitutes the 'classical evaluation problem'.

5.2 CAP payments received by the farmers with intention to invest

60.2% of the farmers in the sample received direct payments (DP) in 2012, 27.6% received rural development payments (RDP) and 19.7% investment support (RDP-IS) in 2008-2012 (Table 4). Farmers who received CAP payments have significantly more intention to invest (p-value = 0.0188 for RDP and p-value = 0.0035 for investment support, p-value = 0.0001 for direct payments) (Figure 34). But, among the beneficiaries of CAP payments, there is no significant differences in the average payment received between farmers intending to invest and farmers not intending to invest (Figure 35). While these observations corroborate previous findings in the literature on the role of CAP payments, they are insufficient to draw a causality link between receiving these payments and investing.

Figure 34: Percentage of farmers intending to invest among the beneficiaries and non-beneficiaries of CAP payments

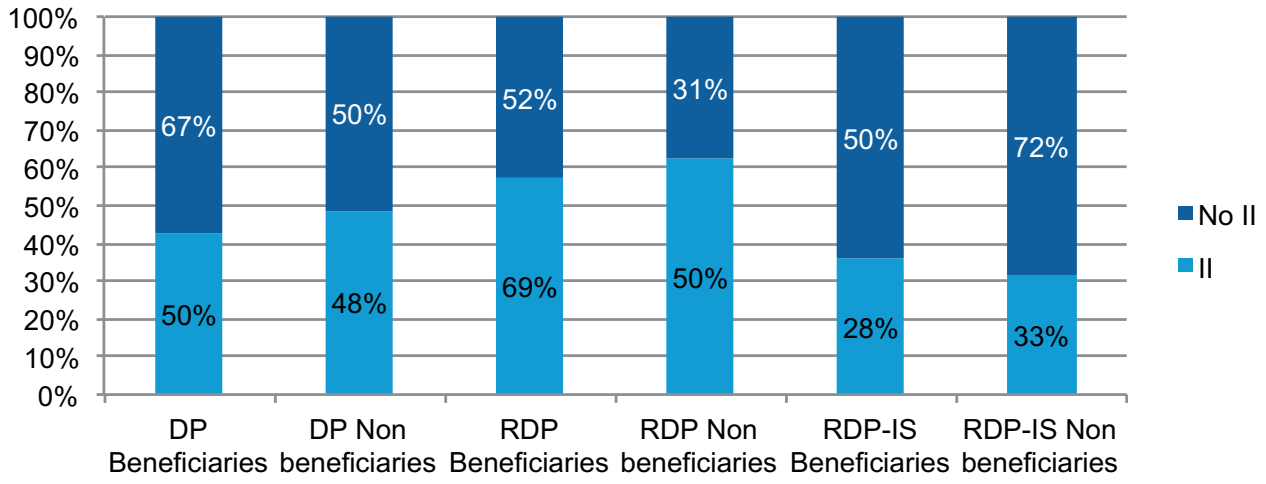
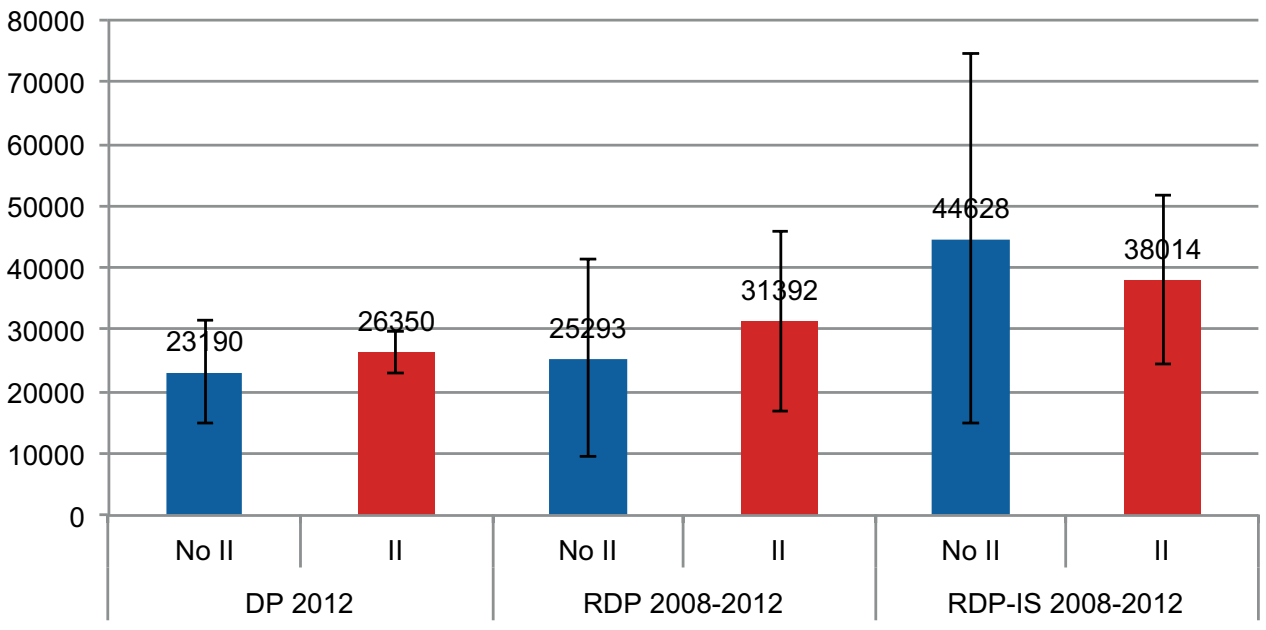


Figure 35: Average CAP payments (EUR) received by farmers intending to invest and farmers not intending to invest (average for the sample of CAP payment beneficiaries only)



22% of the farmers surveyed have applied at least once to rural development investment support measures in the period 2008-2012, while 40% have made multiple applications. The overall success rate is 89%. The number of applications and the average success rate varies quite substantially according to countries (Figure 36). This reflects the differences in the share of RD policy budget allocated to investment support across countries (EC 2012), as well as the differences in the structure and performance of extension services across regions, since these play an important role in encouraging/discouraging farmers to apply to RD measures.

The large majority of these applications concern the CAP measure 121 – the modernisation of farm holdings (Figure 37). This is not surprising given that 12 per cent of the total RD policy budget has been spent for measure 121 - supporting the modernisation of farm holdings - in the previous financial programming period 2007-2013, while only 3% was used for measure 112 and 6% for measure 123 (EC 2012). Investment support payments were mainly used to finance investments in machinery and equipment in 2008-2012 (37%) (Figure 38).

Figure 36: Number of applications for investment support in the last four campaigns (2008-2012) and average success rate of applications (in parenthesis)

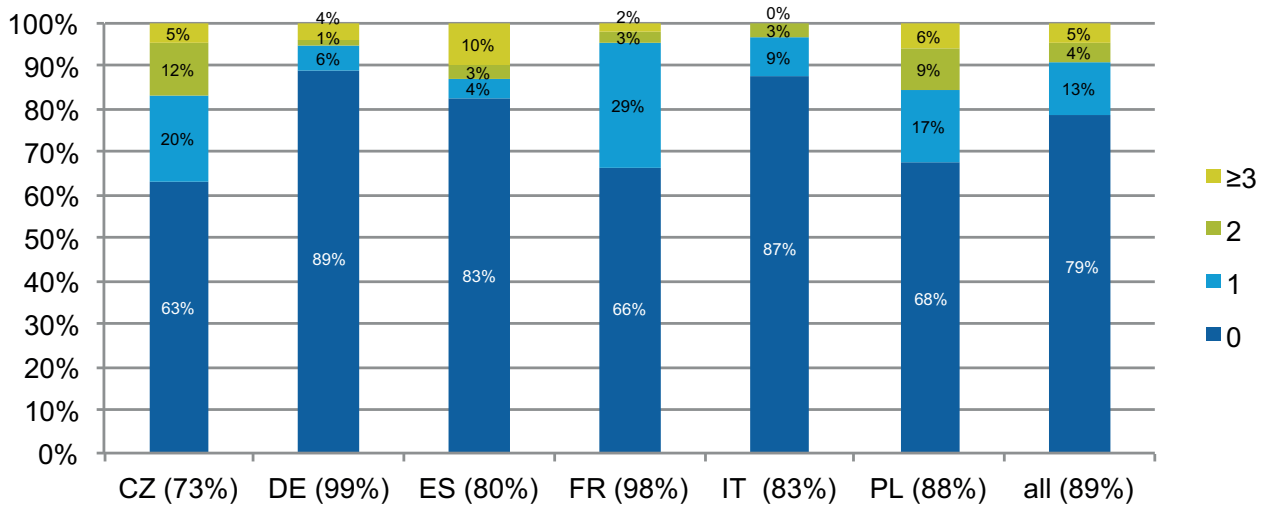


Figure 37: Share of each measure supporting investment in all the applications

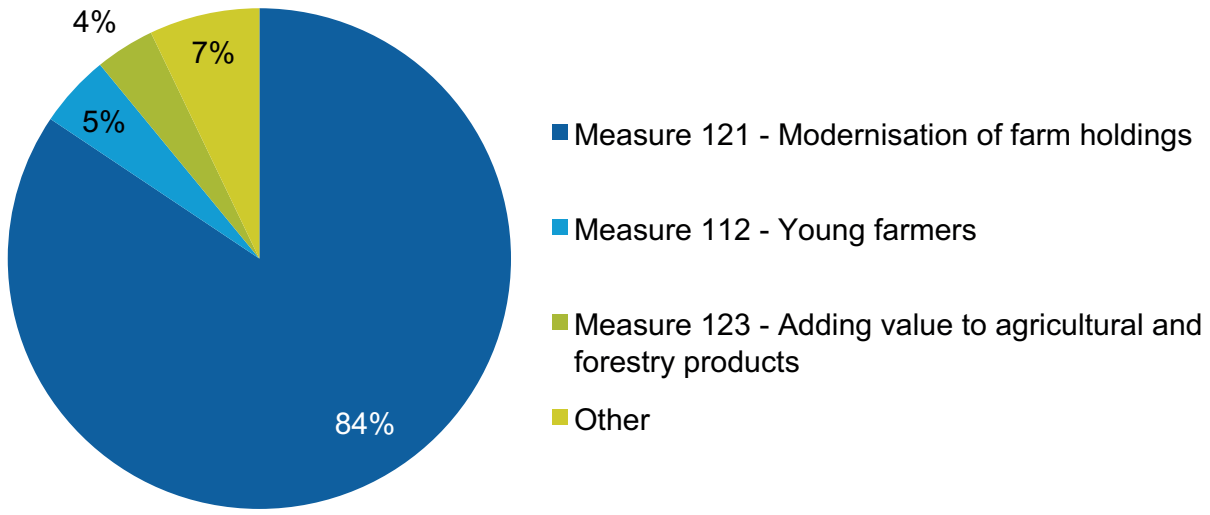
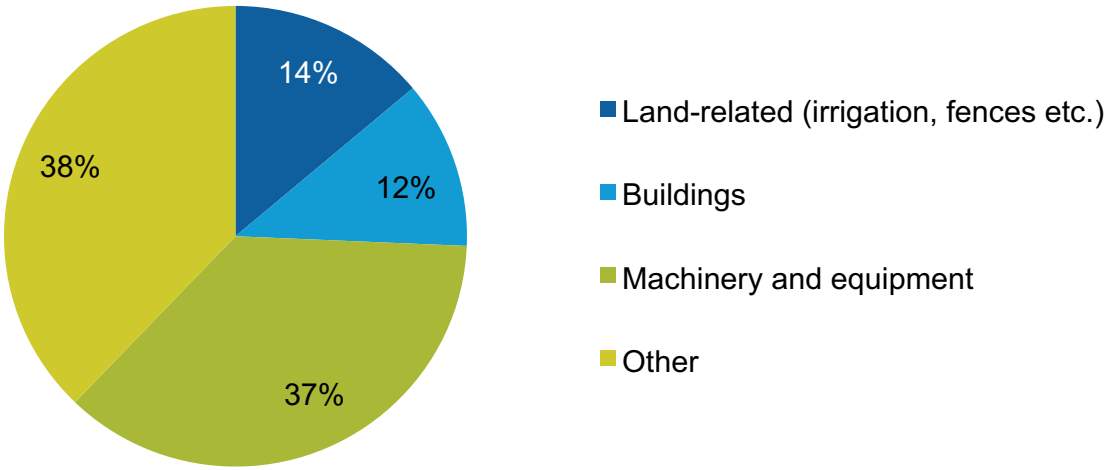


Figure 38: Type of investment undertaken with the RD investment support



5.3 Change in CAP payments

Beyond the analysis of the differences in CAP payments received by farmers intending to invest and those not intending to invest, it is to know whether receiving lower (higher) CAP payments will reduce (or increase) a farmer's intention to invest. As a first approximation, to investigate the possible impact of direct payments and investment support, we rely on stated intentions. Farmers were asked to what extent different scenarios of changes in CAP payments would change their intentions to invest. A similar methodology was used to analyse the expected changes in on-farm and off-farm investment, crop mix, and other activities, as a reaction to the introduction of the Single Farm Payment (Gallerani, Gomez y Paloma et al. 2008; Viaggi, Bartolini et al. 2011) or to assess the impact of CAP removal on land, labour and capital use (Bartolini and Viaggi 2011).

Table 8 presents the classification of farmers into four groups, according to their stated reactions to different scenarios. The scenarios tested concerned a change (increase of 50%, status quo, decrease of 50%) in (i) direct payments per hectare to be received in the period 2014-2020; or (ii) rural development funds to be allocated to farm modernisation (investment subsidies) at a regional level from 2014 onwards. Farmers had to indicate for each scenario and each class of assets whether they are likely to invest (i.e. they would definitely realise the investment mentioned previously or it is likely that they will realise the investment) or not likely to invest (i.e. it is likely that they will not realise the investment or they will definitely not realise the investment).

Table 8: Classification of farmers according to their responses in question F10 (CAP scenarios)

Category	Direct payment	Investment support
Payment dependant	The farmer is likely to invest only if the direct payment he will receive in 2014-2020 is stable or 50% higher compared to 2007-2013 (and not likely if the payment is lower).	The farmer is likely to invest only if the investment subsidies available in the region from 2014 onwards are stable or increase by 50% compared to 2007-2013 (and not likely if subsidies decrease).
Indifferent to higher payment (never intending to invest)	The farmer is not likely to invest even if the direct payment he will receive in 2014-2020 is 50% higher compared to 2007-2013.	The farmer is not likely to invest even if the investment subsidies available in the region from 2014 onwards increase by 50% compared to 2007-2013.
Indifferent to lower payment (always intending to invest)	The farmer is likely to invest whatever the level of direct payment he receives.	The farmer is likely to invest whatever the availability of investment subsidies in the region from 2014 onwards.
Inconsistent	The farmer is likely to invest if direct payments are lower but is not likely to invest if direct payments are higher or equal.	The farmer is likely to invest only if the investment subsidies available in the region from 2014 onwards decrease by 50% compared to 2007-2013 but is not likely to invest if subsidies are stable or increase.

The percentage of farmers in each cell by type of investment is represented in Figure 39 and Figure 40. They represent the impact on investment intentions of various policy scenarios related to direct payments and investment subsidies.

Figure 39: Impact of different direct payment scenarios on farmers' Intention to invest

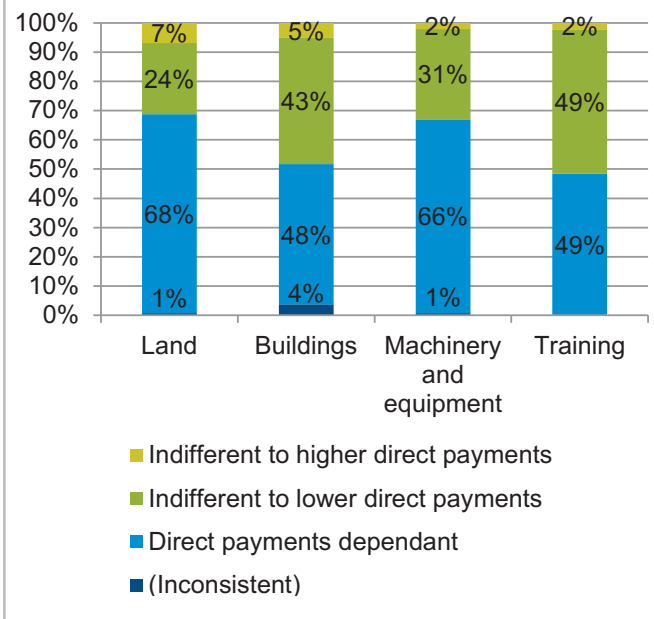
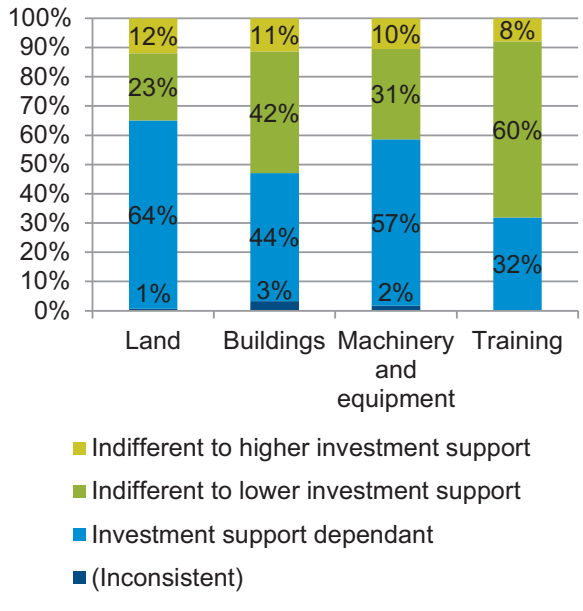


Figure 40: Impact of different scenarios concerning the funds available for investment support in the region on farmers' Intention to invest



Overall, we find that:

- The majority of the farmers intending to invest are 'CAP dependant', i.e. they declare they would invest only if the payment received during the period 2014-2020 increased or remained stable, but would not invest if they decreased. Most of the farmers fall into this category for investments in land and machinery and equipment, and to a lower extent for investments in buildings and training. The proportions are slightly higher for direct payments than for investment support.

- A non-negligible share of the farmers intending to invest are 'indifferent to lower payments', i.e. they declare they would invest whatever the level of direct payment or investment subsidies available in the region, and in particular even if payments decreased. Farmers with investment plans in training are highly represented in this category, which may be due to the fact that the cost of training is low and therefore can be covered independent of any support.

- A smaller share of the farmers intending to invest are 'indifferent to higher payments', i.e. they declare they do not intend to invest whatever the level of direct payment or investment subsidies available in the region, and in particular they do not intend to invest even if payments increased. The proportions are higher for investment support than direct payments, partly due to the fact that fewer farmers will benefit from investment support.

6 Discussion and policy implications

Fifty six percent of the farmers surveyed intend to invest in the period 2014-2020. Investments in machinery and equipment are the most frequent, followed by buildings, land, training, and quotas and production rights. Most farmers intend to invest in several types of assets over the period 2014-2020.

While most of the previous studies on the determinants of farmers' investment decisions have focused on one country and/or one farm specialisation, we have provided here information on six EU countries and four farm specialisations. A better understanding of the differences in the drivers of investment across farm structures is a first requirement prior to the setting up of more efficient investment support measures. The high heterogeneity in the investment intentions of farmers observed across countries, farm sizes and farm specialisations confirms the need for context-specific policy instruments to support investment. This is in line with the new CAP, where the flexibility offered to Member States and regions to define the share of budget for investment support, and to adapt the implementation rules of RD measures (e.g. type of support, eligibility criteria) to local needs has been reinforced.

For those 43.5% farmers with no intention to invest during the 2014-2020 period, the main reasons cited for non-investment are: uncertain expected returns on investment and no need for new assets. Lack of financial resources is not the main reason not to invest. This is in line with the fact that farmers intending to invest mainly envisage using their financial resources from farm activities as the major source of funding, while they rarely envisage relying mainly on bank loan and subsidies. Current CAP investment support schemes based on a one-time grant financing a share of the investment or on subsidised interest rates allow relaxing budget constraints and, as a secondary effect, reducing the downside risk by reducing the actual investment cost. But the farmers we surveyed declared that uncertain returns on investment are a greater obstacle to investment than the lack of financial resources. This suggests that instruments specifically designed to reduce the risks associated with investing would be well received by farmers. Loan guarantees, activated only when farmers have difficulties in reimbursing their loans, are already in place in some Member States (e.g. Belgium, Germany, Poland, Spain), but may be further encouraged.

Our results have also confirmed the importance of the farm manager's socio-demographic characteristics and attitudes, beyond just the farm structure, in shaping their investment intentions. For example, a farmer's future perspectives appears to be crucial for the decision to invest. While farm head age is not relevant, the intention to invest is clearly impacted by the farm head's expectations regarding the continuation of farming activity. Furthermore, while it is generally expected and found that the presence of a successor holds farmers back from dis-investing, to help the successor take over the farm, we do not observe here that the presence of a successor increases the intention to invest. Rather, we observe that being certain of not having a successor is a clear drag on investment, while only being uncertain on succession does not deter investments.This suggests that a deeper understanding is necessary of how farm investment and structural change is impacted by succession perspectives, particularly how traditional family succession dynamics are evolving.

Interestingly, personal attitudes towards good farm management and innovation seem to be correlated with investment intentions. While environmental attitudes do not seem to play a role in explaining intentions to invest, we observe that the group of farmers intending to invest are more likely to have positive attitudes towards innovation and to follow good farm management practices, such obtaining professional advice, regularly testing their equipment, having agricultural insurance or selling their production on contracts. This result suggests that behavioural factors are non-negligible in investment decisions and should therefore not be disregarded in further studies and information systems associated with investment. Given the role of attitudes towards innovation, another issue needing attention is the connection between innovation measures and investment measures. The link between the modernisation of agricultural holdings (as supported under RD 2007-2013) and innovation in the farming sector should be more clearly addressed in the CAP. A specific issue in this direction is a better connection between farm modernisation and sector/chain/network innovation strategy.

Our results do not provide evidence on the existence of complementarity or substitution effects between on-farm investment and the existence of other income-generating activities on or outside the farm. Yet, a better understanding of the impact of diversification strategies on farm investment, and thus on the modernisation of farm holdings, is required. For example, we have a limited understanding of the impact on farm investment of support to aid diversification of farmers' activities, and vice-versa. In that respect, we acknowledge the Common Strategic Framework and the reform of the cohesion policy towards harmonised rules between different funds, including the European Agriculture Fund for Rural Development, in particular, to increase the coherence of EU actions and to simplify their implementation.

Farmers intending to invest are mainly the same as those who invested recently and vice-versa. The path-dependence of farm investment strategies is an important factor to take into account in the design of eligibility criteria for investment measures. This suggests that investment support restricted to farms with on-going modernisation and expansion strategies may have limited effects, given that these farms may invest even without support. Selection criteria often include socio-economic characteristics of the farms, such as economic size (e.g. minimum revenue per annual work unit), the farmer's age or farm location (e.g. in the case of young farmers and areas facing natural constraints, the maximum support rates can be increased). One could also imagine giving priority to farmers who have not received investment support recently. While this should not go against the principle of best use of financial resources by selecting the best projects, we could imagine to establish a limit on the number of times that a beneficiary can receive support under the measure (e.g. 3 times for the whole programming period). This would indirectly favour the new applicants by removing from the candidates' pool the farmers experimented in setting-up subsidy applications. Similar eligibility conditions are by the way already in some RD programmes.

We do find a significant difference between intentions to invest of CAP beneficiaries (of both direct and rural development payments) and the others. However, our results are insufficient to draw a causality link between receiving these payments and investing. But in the growing literature on the impact of CAP payments on farm investment, it is usually assumed that direct payments may favour investment by two main channels: (i) by reducing the risk profile of income streams and, as a result, increasing farmers' willingness to take risky production decisions, including investments; or (ii) by relaxing credit constraints in the presence of capital market imperfections. Moreover, RD investment support promotes investments that otherwise would not have been undertaken (the principle of additionally), because the cost is too high and/or the farmer has limited access to credit. One important complementary observation we have made is that a large number of farmers declared themselves dependant on the maintenance or increase of CAP payments (both direct payments and investment subsidies) to maintain their intention to invest. The fact that a number of farms are indifferent to the CAP (i.e. they declare they would invest whatever the level of direct payment or investment subsidies available in the region, and in particular even if payments decreased) in turn calls for a careful targeting of payments.

More generally, RD programs may gain by including a clear statement of their objectives in one of the following directions: (i) giving priority to support farmers that are more likely to find it profitable to invest, therefore creating higher potential value-added for public money in terms of economic return; (ii) giving priority to support farmers less likely to invest and modernise their farm autonomously, with a subsequent higher return for the agricultural policy in term of compensatory and equal opportunity effects, but potentially at the expense of economic returns; and (iii) supporting a diversity of potentially relevant modernisation pathways, in various sectors, even if their future profitability is uncertain, in order to maintain the diversity and resilience of the agricultural sector.

7 Further research

This study has investigated the investment behaviour of farmers in general, as well as for specific assets: land, buildings, machinery and equipment, training, and quotas and production rights. It is based on a 2013 survey of 780 farmers covering six EU countries (Czech Republic, Germany, Spain, France, Italy, and Poland), four different farm specialisations (arable crops, livestock, perennial crops and mixed farms), as well as different farm sizes. It provides up-to-date information on the patterns of future investments foreseen in 2014-2020 by the farmers interviewed. The results of the study largely corroborate previous work concerning farm investment behaviour. It confirms that farmers receiving CAP payments invest more. Beyond policy variables, it shed light on the importance on the characteristics and attitudes of the farm manager and farm household, beyond just the farm structure, in shaping investment intentions. Lastly, it provides evidence on the path-dependence of farm investment strategies.

The present report leaves room for further investigation based on the same data-set. The use of econometrics or matching models will allow measuring the net impact of the variables highlighted in the report as potential determinants of the intentions to invest. Some important questions need further examination, in particular: (i) the complementarities/substitutions between assets, and how this impacts the patterns of investment in land, machinery and equipment, buildings and training; (ii) the dynamics of investment, and the role of the CAP, e.g. whether having received investment support in the past impacts the farmer's intention to invest today; (iii) the relationship between on-farm investment and the diversification of farmers' activities (e.g. in to agro tourism, energy production, part time farming), and how different RD measures should be coordinated to even out potential crowding out effects between measures; (iv) the patterns of replacement/renovation investment versus expansion investment, and to what extent the rural development payments help in supporting one direction or the other; and (v) the interconnection between attitudes, economic motivations and investment, for instance, in order to contribute to improving the methodologies used in the field of intentions surveys.

As a first step, in order to better exploit the results of the survey for policy simulation, the data will be used to develop farm-level mathematical programming models in line with the previous 2006 and 2009 studies, in order to test the impact of CAP post-2013 policy scenarios on farmers' investment decisions after 2014 (*A farm level model to evaluate the impact of the Common Agricultural Policy on EU farmers' investment decision* (Viaggi, Raggi et al. 2014)).

In case the present research is repeated, it could be improved in several aspects, after redefining the main objective of the study.

If the objective of such a future study is to collect up-to-date information on investment intentions, the sampling methodology could be revised, together with an enlargement of the sample, to aim at a representative sample of EU main farming systems and regions. Indeed, in spite of the increase in sample size compared to previous studies, it remains impossible to draw Europe-wide conclusions on the investments to be realised in the forthcoming years based on the current sample. The questionnaire could also be reduced to focus on investments and therefore might not include so many questions on the farm and farmer's details and characteristics. The possibility of running this survey over the phone or on-line may also be considered.

If the objective of such a future study is rather to evaluate the role of the CAP in fostering investment and to provide clear recommendations on the design of specific policy measures, an approach based on an evaluation of the case studies of specific measures could be relevant. This would allow a better accounting for the specificity of the local implementation of such measures (support rate, eligibility criteria, success rate (% of applicants receiving support)) and for comparing their performance, including the evaluation of their net impact. We could for example imagine the replication of the counterfactual analysis of the CAP investment support measures conducted by Michalek, Ciaian et al. (2013), Ratinger, Medonos et al. (2013) or Kirchweger, Eger et al. (2011) on a larger scale. The analysis could also be extended to investments related to the other non-farming activities on the farm, since they are also highly supported within the RD policy.

Annex 1: Questionnaire

Screening question (selection of the farms)

Good morning/afternoon/evening. My name is _____ and I am calling from GfK, a market research company specialising in research in agriculture. Our company is currently conducting a study for the Joint Research Centre of the European Commission.

The purpose of this study is to understand the drivers of farm investment and to identify trends determining EU farmers' future investment decisions especially in the context of CAP reform. The study is seeking to better understand EU farmers' current and future attitudes towards investment.

We are members of the (*MARKET RESEARCH SOCIETY TO BE SPECIFIED FOR EACH COUNTRY*) and follow the market research code of practice. This means that this interview is strictly confidential and your responses will be amalgamated with those of other farmers in our report and will not be revealed in an identifiable manner.

Please could I speak to the person on the farm who is responsible for financial investment decisions of the farm?

Firstly, I would like to ask you a few questions to ensure you are the type of farmer we need to participate in our survey in order to achieve a representative sample.

Screener (WILL BE ASKED WHEN RECRUITING FARMERS BY THE PHONE)

S1	Are you the person responsible for making investment and financial decisions on the farm? DO NOT READ OUT. CODE ONE ONLY.	CODE ONE ONLY	
	Yes	1	CONTINUE
	No	2	ASK TO SPEAK TO PERSON RESPONSIBLE. IF NOT THANK YOU AND CLOSE

S2	In what region is your farm located? DO NOT READ OUT. CODE ONE ONLY.	CODE ONE ONLY	
	List of regions will be inserted according to each country	1	
		2	
		3	CHECK THE QUOTA
		4	
		5	
		6	

S3	What is the total UAA (Utilised Agricultural Area) owned and rented of the farm? READ OUT. RECORD AREA IN HA.	RECORD AREA (HA)	CHECK THE QUOTA
S3.1	Total (UAA)		
S3.2	Owned		
S3.3	Rented-in		
S3.4	Rented-out		

S4	Which of the following contributes most to the overall income of your farm? READ OUT. CODE ONE ONLY.	CODE ONE ONLY	CHECK THE QUOTA
	Field arable crops IF INCOME FROM FIELD CROPS >66%	1	
	Livestock IF INCOME FROM LIVESTOCK >66%	2	
	Perennial crops (Horticulture/Vineyards/Fruit/Olives) IF INCOME FROM PERENNIAL CROPS >66%	3	
	Mixture of crops and livestock. PLEASE CONSIDER MIXED WHEN: Mixed if crop > 33% income and livestock>33% income	4	

Would you be available to participate to this study? This discussion will be face to face with one of our interviewers. The discussion will last around one hour.

To thank you for your time, we would like to offer you€... as an incentive.

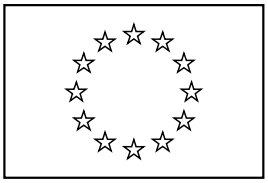
RECRUITER:

If farmer agrees, thanks and arrange date for the interview: date, time and location for face to face interview.

Date of vet interview:_____ Time of interview:_____

Location of the interview: _____

Introduction letter (sent prior to the interview for the farm selected)



EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Institute for Prospective Technological Studies
Agriculture and Life Sciences in the Economy

Seville, ** ** ****

Dear Sir / Madam,

Subject: 3rd European Survey on Farmers' investment behaviours

The Institute for Prospective Technological Studies (IPTS)[13] AGRILIFE Unit is carrying out the third edition of its survey on farmers' investment behaviours from February to April 2013. The IPTS has asked GfK to interview farmers in 6 countries about their intended investment decisions and the different factors influencing these decisions. Your farm has been randomly selected to take part in this Survey in [COUNTRY]. The interview will last about ** minutes. It is very important that your farm takes part in this study. Your opinions count and contribute to obtaining a good picture of farmers' investment decisions in Europe.

All information gathered will be treated in the strictest confidentiality and the anonymity of each interviewee is guaranteed. Your name will not be linked to the responses and it will not be possible to identify individual respondents.

For further information about our institute and the survey, you may refer to the following link on the website, http://agrilife.jrc.ec.europa.eu/s_study5.html. The first results of this survey will be available on the website early 2014.

In case you have any doubts or need any clarification regarding this survey we will be happy to answer them personally by telephone or by e-mail:

National contact: xxxxxx; tel: xxxxxxxx; e-mail: xxxxxxx@gfk.com

GfK coordination centre contact: Ms Malgorzata Palczewska;

e-mail: Malgorzata.Palczewska@gfk.com

IPTS contact: Marianne Lefebvre; e-mail: marianne.lefebvre@ec.europa.eu

We hope you will find the survey interesting. Thank you very much for your participation.

Jacques DELINCÉ

Head of Unit AGRILIFE

13 The IPTS is one of the seven scientific institutes of the European Commission's Joint Research Centre (JRC) located in Seville, Spain.

Main questionnaire (face to face interview)

Section A: Farmer characteristics and preferences

A1	In what land type area is your farm located? READ OUT. CODE ONE ONLY.	CODE ONE ONLY
	Plain (large area of level or nearly level land)	1
	Hill (up to 300m above sea level)	2
	Mountain (300m above sea level)	3

A2	What %, if any, of your total production system is conducted with organic certification? RECORD %. IF NONE PLEASE INSERT 0%	RECORD %
	% of the total production system	
	Don't know	-999

A3	What is the legal status of the farm? READ OUT. CODE ONE ONLY.	CODE ONE ONLY
	Individual/family farm (the sole holder of an independent holding)	1
	Limited company (a legal entity)	2
	Cooperative farm/ group holding	3
	Other (specify)	97

A4	What is the highest level of education that you achieved? CODE ONE ONLY.	CODE ONE ONLY
	None and primary (elementary school)	1
	Lower Secondary (primary school)	2
	Upper secondary education (high school, vocational school)	3
	Post-secondary non-tertiary education (professionalizing master)	4
	First stage of tertiary education (degree)	5
	Second stage of tertiary education (PhD)	6

A5	Did you receive any professional or university education in agriculture? TRAINING NOT INCLUDED DO NOT READ OUT. CODE ONE ONLY.	CODE ONE ONLY
	Yes	1
	No	2

A6	When did you start working on the farm? RECORD THE YEAR.	RECORD YEAR
	Year	
	Do not remember	-999

A7	When do you plan to stop farming? DO NOT READ OUT. CODE ONE ONLY.	CODE ONE ONLY
	In 1 to 5 years	1
	In 6 to 10 years	2
	In more than 10 years	3
	Don't know yet	-999

A8	Do you have a successor to the ownership/control of your farming business? DO NOT READ OUT. CODE ONE ONLY.	CODE ONE ONLY

	Yes	1
	No	2
	Don't know	-999

Ask if code 1 at A8

A9	Does your successor....? READ OUT. CODE ONE ONLY.	Yes	No
	Does you successor work already on the farm?	1	2
	Is your successor a member of the family?	1	2

Ask all

A10	Thinking about the potential activities other than farming, what **monthly salary** would make you stop farming? Please think **only of the financial aspect** of the potential new activity and not about the type of the activity Please provide the amount of the **net salary** that would make you stop farming. RECORD NUMBER. IF DO NOT KNOW RECORD -999.	
	RECORD **MONTHLY NET SALARY**	
	No salary will make me change DO NOT READ	-998
	Dk/Na	-999

A11	For each of the following statements, please indicate how likely are you, to ever find yourself in each situation. Provide a rating from Extremely Unlikely to Extremely Likely, using the following scale: 10 Extremely likely 9 Quite likely 8 Likely 7 Somewhat likely 6 Few likely 5 Rather likely 4 Somewhat unlikely 3 Unlikely 2 Quite unlikely 1 Extremely unlikely READ OUT EACH STATEMENT. ONE SCORE ON THE SCALE REMARK FOR INTERVIEWER: WE DON'T WANT TO KNOW THEIR OPINION ON EACH STATEMENT BUT IF THEY ARE LIKELY TO FIND THEMSELVES IN EACH SITUATION	
		Insert score
A11.1	I sell my production on contract if it is possible	
A11.2	I work with an unbalanced crop rotation (ONLY ASK IF S4= 1 or 4 (crops))	
A11.3	I have a high level of debts	
A11.4	I take out insurance for farm activities and holdings	
A11.5	I have revenues coming from diverse activities on and off-farm.	
A11.6	From time to time, I don't follow regulations (for example on environmental protection)	
A11.7	I search for information and discuss with professional advisors before making decisions	
A11.8	I use short-term credit option in case of punctual money shortage	
A11.9	I test regularly my equipment to avoid breakdown	

A11.10	I pay the bills with delay	
A11.11	I participate to very few social activities with neighbours	
A11.12	I keep a written track of all what I produce, buy and sell.	
A11.13	I share thoughts about the business with family and getting them to support the work	

A12	We would like to know your opinion on certain statements. Please let me know to what extent would you agree or disagree with them. Please give your answers on the following scale: 10 Totally agree 9 Quite agree 8 Agree 7 Somewhat agree 6 Few agree 5 Rather agree 4 Somewhat disagree 3 Disagree 2 Quite disagree 1 Extremely disagree READ OUT EACH STATEMENT. ONE SCORE ON THE SCALE FOR EACH STATEMENT REMARK FOR INTERVIEWER: HERE WANT TO KNOW THEIR OPINION / PERCEPTION	
		Insert score
A12.1	Agricultural activities today undermine the natural balance in the environment	
A12.2	It is important to visit other farms to look at their methods	
A12.3	Environmental problems resulting from agricultural activities are exaggerated by the media	
A12.4	I would describe my farming methods to be characteristically traditional rather than modern	
A12.5	Commercial fertilizers and pesticides have no harmful effects; they promote high-quality production	
A12.6	I always have ideas on how to improve things.	
A12.7	Farmers are the best protectors of the natural environment, even if mistakes are made from time to time.	

Ask All

A13	Please provide the age and gender of the farm head of your household.			
		A13.1 Year of birth RECORD FULL YEAR	A13.2 Gender CODE ONE ONLY	
			Female	Male
	Farm head		1	2

A14	How many adults and children are there in the household? DO NOT ASK ABOUT OTHER HOUSEHOLD MEMBERS IF THE FARM IS COOPERATIVE	
A14.1	NUMBER OF ADULTS IN THE HOUSEHOLD	
A14.2	NUMBER OF CHILDREN IN THE HOUSEHOLD (consider children when less than 18 years old)	

A15	We would like to know your opinion on certain statements. Please let me know to what extent would you agree or disagree with them. Please give your answers on the following scale: 10 Totally agree 9 Quite agree 8 Agree 7 Somewhat agree 6 Few agree 5 Rather agree 4 Somewhat disagree 3 Disagree 2 Quite disagree 1 Extremely disagree READ OUT EACH STATEMENT. ONE SCORE ON THE SCALE FOR EACH STATEMENT REMARK FOR INTERVIEWER: HERE WANT TO KNOW THEIR OPINION / PERCEPTION	
		Insert score
A15.1	New machinery/ideas in farming have improved upon traditional techniques	
A15.2	I take some actions to protect the environment when managing my farm because I feel that I should	
A15.3	It is important to keep up with new farming methods.	
A15.4	I would pay more for environmentally friendly equipment and products.	
A15.5	I'll never leave my farm	
A15.6	Compared to other farmers of my neighbourhood, I use a lot of high technology products and machinery.	
A15.7	It is important to have rules that impose farmers to reduce their environmental impact.	
A15.8	Modern record-keeping systems (such as internet, computerized record…) are important in farming.	

Section B: Farm activities

ASK IF CODE 1 OR 4 AT S4

(IF CROPS OR MIXTURE OF CROPS AND LIVESTOCK ARE THE MAIN INCOME OF THE FARM)

B1	Thinking about the **arable crops** that you usually grow, What is the average area of each crop that you have grown over the last 4 campaigns (2008-2012)? What is the average yield that you have achieved (ton per ha)? What is the average price that you obtained per ton? IN CASE CROP IS USED FOR FEED/ INTERNAL USE MARK -996 AND IS NOT REQUIRED TO ANSWER B1.4 What percentage of your production is sold at fixed/ guaranteed price? DO NOT READ OUT THE FULL LIST				
		B1.1 Area grown (ha)	B1.2 Yield (ton/ha)	B1.3 Price (€/ton) -996 in case of internal use	B1.4 % sold at fixed/ guaranteed price
	Barley winter)				
	Barley spring				
	Hard Wheat				
	Soft wheat				
	Triticale				
	Rye				
	Oats				
	Oil seed rape				
	Maize				
	Sorghum				
	Sunflower				
	Soybean				
	Tomatoes				
	Cauliflower				
	Cucumber				
	Lamb lettuce				
	Lettuce				
	Leek				
	Cabbage				
	Carrot				
	Peas				
	Onion				
	Potatoes				
	Sugar beet				
	Tobacco				
	Other specify				
	Other specify				
	Other specify				

ASK IF CODE 3 AT S4 (IF PERENNIAL CROPS ARE THE MAIN INCOME OF THE FARM)

B2	Thinking about the **fruit crops** that you usually grow, What is the average area of each crop that you have grown over the last 4 campaigns (2008-2012))? What is the average yield that you have achieved (ton per ha)? What is the average price that you obtained per ton? IN CASE CROP IS USED FOR INTERNAL USE MARK -996 AND IS NOT REQUIRED TO ANSWER B1.4 What percentage of your production is sold at fixed/ guaranteed price? DO NOT READ OUT THE FULL LIST				
		B2.1 Area grown (ha)	B2.2 Yield (ton/ha)	B2.3 Price (€/ton)	B2.4 % sold at fixed/ guaranteed price
	Apples				
	Pears				
	Peaches				
	Plums				
	Citrus fruit				
	Berries				
	Cherries				
	Grapes				
	Olives				
	Other specify				

ASK IF CODE 2 OR 4 AT S4
(IF LIVESTOCK OR MIXTURE OF CROPS AND LIVESTOCK ARE THE MAIN INCOME OF THE FARM)

B3	Thinking about the **dairy animals** that you usually have on your farm, On average, how many dairy animals did you have on the farm over the last 4 campaigns (2008-2012)? What was the average milk yield per animal that you have achieved per lactation over the last 4 campaigns (2008-2012)? What was the average price of the milk that you obtained per litre over the last 4 campaigns (2008-2012)? IN CASE MILK IS USED FOR INTERNAL USE, DON´T SOLD MARK -996 AND IS NOT REQUIRED TO ANSWER B1.4 What percentage of your production is sold at fixed/ guaranteed price? DO NOT READ OUT THE FULL LIST				
		B3.1 Number of animals	B3.2 Litres of milk per animal	B3.3 Price of milk (€/ litre)	B3.4 % sold at fixed/ guaranteed price
	Dairy cows				
	Goats				
	Sheep				
	No dairy animals	-996			
	Other specify				
	Other specify				

ASK IF CODE 2 OR 4 AT S4
(IF LIVESTOCK OR MIXTURE OF CROPS AND LIVESTOCK ARE THE MAIN INCOME OF THE FARM)

B4	Thinking about the **animals** that you usually have on your farm, What was the average total number of animals over the last 4 campaigns (2008-2012))? What was the average price that you obtained per animal over the last 4 campaigns (2008-2012)? CASE ANIMALS ARE USED FOR INTERNAL USE, DON´T SOLD MARK -998 AND IS NOT REQUIRED TO ANSWER B1.4 What percentage of your production is sold at fixed/ guaranteed price? DO NOT READ OUT THE FULL LIST				
		B4.1 Number of animals	B4.2 Price	B4.3 % sold at fixed/ guaranteed price	
			Use this column in case farmer give the price **PER ANIMAL**	Use this column in case farmer give the price **PER KILO**	
	Equines				
	Calves for fattening				
	Other cattle < 1 year				
	Male cattle 1-2< years				
	Female cattle 1-2< years				
	Male cattle >= 2 years				
	Breeding heifers				
	Heifers for fattening				
	Cull dairy cows				
	Other cows				
	Goats, breeding females				
	Other goats				
	Ewes				
	Other sheep				
	Piglets				
	Breeding sows				
	Pigs for fattening				
	Other pigs				
	Table chickens				
	Laying hens				
	Other poultry				
	No animals	-996			
	Other specify				
	Other specify				

ASK ALL

B5	Thinking about other activities you carry out on your farm, What was your average annual net income generated by each of them over the last 4 campaigns (2008-2012)? DO NOT READ OUT LEAVE BLANK IF NOT APPLICABLE AND CODE -999 IF DO NOT KNOW NOTE: Consider energy production only if they receive money in exchange	Net income (€/year)
B5.1	Non-food purpose processing and use of raw materials or by-products of plant or animal origin from the agricultural production (e.g. handicraft, textile, leather-work, therapy, cosmetics, toys, etc.)	
B5.2	Non-food purpose processing of plants growing wild (e.g. drug plants, basket-osier, forest by-products, etc.)	
B5.3	Processing of farm products (cheese, etc.)	
B5.4	Recreational or tourism activities (wine/fishing/agro tourism services, agric./folk/handicraft activities, riding, trekking, etc.)	
B5.5	Providing accommodation/catering in the farm	
B5.6	Renewable energy production	
B5.7	Rental of farm machinery	
B5.8	Others (e.g. vehicle trade, wholesale activities, marketing of locally made products etc.). – specify.	

ASK ALL

B6	What organisations or persons usually provide you with each type of advice on the farm? INDICATE WHICH ORGANISATION GIVES EACH TYPE OF ADVICE (DO NOT PROMPT). THE SUM OF % SHOULD ADD UP TO 100%				
		B6.1 Advice on crops grown, crop protection products and livestock production and growing methods	B6.2 Advice on machinery used on the farm	B6.3 Advice on financial issues of the farm	B6.4 Advice on legal issues (Working issues, CAP payments, technical services, legal registration etc.)
	Crop protection, seed or machinery seller				
	Buyer of the crops/animals (e.g. food processing enterprise...)				
	Independent agronomist or veterinarian				
	Public extension services				
	Advice service of a farmer association, cooperative or union				
	Workshops, conferences, fairs and demonstration				
	Other farmers / neighbours rural community				
	Bank, accountant, lawyer				

	I don't receive external advice and follow my own opinion				
	Others (Specify)				
	Total	**100%**	**100%**	**100%**	**100%**
	don't know	-999	-999	-999	-999

Ask All

B7	What type of insurance do you have for your farm? Please indicate both compulsory and voluntary insurance	Yes	No	Compulsory? (yes = 1/ no=2/don't know =-999)
B7.1	*Building insurance*	1	2	
B7.2	*Crop insurance*	1	2	
B7.3	*Livestock insurance*	1	2	
B7.4	*Income insurance*	1	2	
B7.5	*Machinery insurance*	1	2	
B7.6	*Farmer's personal insurance (life insurance etc. – not including social security)*	1	2	
B7.7	*Other specify*	1	2	
B7.8	*Other specify*	1	2	
B7.9	*Other specify*	1	2	
	Don't know	-999		

Section C: People working on the farm

Ask All

C1.1	On average over the past 4 campaigns (2008-2012), what % of your professional time is dedicated to the farm? RECORD %		
C1.2	What was your average annual off-farm income over the past 4 years (2008-2012)? RECORD NUMBER. RECORD -999 IF DON'T KNOW AND -998 IF REFUSED TO ANSWER.		
		C1.1 % of time dedicated to the farm RECORD %	C1.2 Off –farm income RECORD NUMBER
C1.3	On average over the past 4 campaigns (2008-2012), what is the total income earned annually by all the other members of your household?		
		C1.3 INSERT TOTAL INCOME EARNED ANNUALLY	
	Total income earned annually by all the other members of your household		

Ask All

C2.1	What was the number of permanent workers working on the farm on average during the past 4 campaigns (2008-2012)? RECORD NUMBER	
C2.2	**If any permanent worker** What was/is the annual total cost of labour (gross wages including social insurance) of all **permanent** workers working on the farm on average during the past 4 campaigns (2008-2012)? (Local currency) RECORD NUMBER. RECORD -999 IF DON'T KNOW AND -998 IF REFUSED TO ANSWER.	

Ask All

C3.1	How much do you expend a year in temporary workers? IN CASE FARMER DON'T CONTRACT TEMPORARY WORKERS NOTE 0 Please note the annual total cost of labour (gross wages including social insurance) of all **temporary** workers working on the farm on average during the past 4 campaigns (2008-2012)? (Local currency) RECORD NUMBER. RECORD -999 IF DON'T KNOW AND -998 IF REFUSED TO ANSWER.	

Ask All

C4	Do you rely on contractors for farming activities requiring the use of specific machines/ equipment? DO NOT READ OUT. CODE ONE ONLY.	
	Yes	1
	No	2

Ask if code 1 at C4

C5 Concerning the activities for which you rely on a contractor : What activities do you externalized to a contractor? NOTE THE EXTERNALIZED ACTIVITY IN THE BOX What is the machine/ equipment required for each activity externalized to a contractor? What was the average cost paid to a contractor per year and per activity over the past 4 campaigns (2008-2012)? What is the total annual cost paid for ALL externalized activities? ONLY IF NO ANSWER AVAILABLE FOR C5.3 IF FARMERS RESPOND TO C5.3, C5.4 WILL BE CALCULATED (SUM) IF FARMER IS NOT ABLE TO ANSWER C5.3 PER ACTIVITY, ASK THE AVERAGE ANNUAL TOTAL COST IF FARMER DON'T KNOW NOTE -999 AND -998 IF REFUSED TO ANSWER			
C5.1 NOTE ACTIVITIES	C5.2 Machines CODE ALL THAT APPLY	C5.3 Annual cost per activity RECORD (Local currency)	C5.4 Annual total cost RECORD (Local currency)
Harvest 1			
Seeding 2			
Planting 3			
Mulching 4			
Disinfecting 5			
Others -997			
TOTAL			

Section D: Farm currently owned assets

ASK ALL

D1	Now I would like to ask you about the land you have and the investments that have been made on the farm or you plan to make by the end of 2013. I would like to start with the very first investment you made when you bought the farm land and ask the same questions for any other land investments that you might have made since then. ASK ABOUT ALL LAND INVESTMENTS MADE OVER THE YEARS. VERIFY THAT TOTAL LAND AREA INHERITED + BOUGHT IN D1.1= AREA OWNED IN S3.2 IF DON´T REMEMBER NOTE -999 How many ha of land area did you buy/inherited? What was the year when you bought/inherited this land? IN CASE FARMER IS NOT ABLE TO RECORD EXACT YEAR, ASK FOR AN INTERVAL AND THEN TAKEN THE MEDIAN YEAR. What was the cost per hectare of that land at the time you bought it?			
		D1.1 RECORD Land area (HA)	D1.2 RECORD year	D1.3 RECORD Purchase value **per ha**
	Inherited land			0
	Initial investment in land 1			
	Investment in land 2			
	Investment in land 3			
	Investment in land 4			
	Investment in land 5			
	Investment in land 6			

ASK ALL

D2	Now I would like to ask you about the building investments that have been made on the farm or you plan to make by the end of 2013. Could you please tell me what type of buildings have been bought or built? INTERVIEWER: FOR EACH TYPE OF BUILDING MENTIONED PLEASE ASK THE QUESTIONS BELOW. When was the building bought or built? IN CASE FARMER IS NOT ABLE TO RECORD EXACT YEAR, ASK FOR AN INTERVAL AND THEN TAKEN THE MEDIAN YEAR. What was the cost of that building? NOTE -999 IN CASE FARMER DON'T KNOW AND -998 IF REFUSED TO ANSWER When, if at all, do you plan to renovate/reform/expand this building?							
		D2.1 RECORD Purchase/ built year	D2.2 RECORD Building cost	D2.3 RECORD CODE ONE ONLY Renovation/Reform/Expansion				
				In 1 year	2-5 years	6-10 years	No plan to renovate	Don't know
	Machinery building			1	2	3	4	-999
	Animal building			1	2	3	4	-999
	Crop/ fruit storage			1	2	3	4	-999
	Chemicals' storage			1	2	3	4	-999
	Grain dryer			1	2	3	4	-999
	Farmer's house			1	2	3	4	-999
	Other			1	2	3	4	-999
	Other			1	2	3	4	-999
	Other							

D3	Now I would like to ask you about the machinery/ equipment investments that have been made on the farm or you plan to make by the end of 2013. Could you please tell me what types of machinery have been bought for the farm? INTERVIEWER: FOR EACH TYPE OF MACHINERY/ EQUIPMENT MENTIONED PLEASE ASK BELOW QUESTIONS. When the machine/ equipment was bought? IN CASE FARMER IS NOT ABLE TO RECORD EXACT YEAR, ASK FOR AN INTERVAL AND THEN TAKEN THE MEDIAN YEAR. What was the cost of that machine/ farming equipment? NOTE -999 IN CASE FARMER DON'T KNOW AND -998 IF REFUSED TO ANSWER When, if at all, do you plan to replace this machine/ farming equipment?							
		D3.1 RECORD Purchase year	D3.2 RECORD Purchase value	D3.3 RECORD CODE ONLY replacement				
				In 1 year	2-5 years	6-10 years	No plan to renovate	Don't know
	Tractor			1	2	3	4	-999
	Drilling equipment			1	2	3	4	-999
	Sprayer			1	2	3	4	-999
	Forage harvester			1	2	3	4	-999
	Combine harvester			1	2	3	4	-999
	Trailers/ transportation			1	2	3	4	-999
	Balers			1	2	3	4	-999
	Irrigation equipment			1	2	3	4	-999
	Other			1	2	3	4	-999

ASK IF FARMER HAS DAIRY ANIMALS CODED AT B3.1

OR/AND ACORDING TO B1 FARMER HAS SUGAR BEET

D4	Now I would like to ask you about the investments in production quota that have been made on the farm or you plan to make by the end of 2013. INTERVIEWER: FOR EACH TYPE OF QUOTA PLEASE ASK BELOW QUESTIONS. LEAVE IT BLANK IF NO INVESTMENT IN QUOTA HAS BEEN DONE When the quota was bought? IN CASE FARMER IS NOT ABLE TO RECORD EXACT YEAR, ASK FOR AN INTERVAL AND THEN TAKEN THE MEDIAN YEAR. What was the cost of this quota? NOTE -999 IN CASE FARMER DON'T KNOW AND -998 IF REFUSED TO ANSWER When, if at all, do you plan to sell this quota?							
	Record answer	D4.1 RECORD Purchase year	D4.2 RECORD Purchase value	D4.3 RECORD CODE ONE ONLY Sell				
				In 1 year	2-5 years	6-10 years	No plan to sell	Don't know
				1	2	3	4	-999
				1	2	3	4	-999
				1	2	3	4	-999
				1	2	3	4	-999

Ask All

D5	Now I would like to ask you about the investments you have made in training for yourself or other workers on the farm. INTERVIEWER: FOR EACH TYPE OF TRAINING MENTIONED PLEASE ASK THEQUESTIONS BELOW. **THIS DOES NOT INCLUDE FREE TRAINING** COURSES BUT ONLY THOSE THAT YOU/YOUR BUSINESS HAS PAID FOR 5.1 What was the cost of all training course done during last 4 campaigns? CODE -996 IF DON´T REMEMBER 5.2When, if at all, do you plan to pay for another training?							
			D5.1 RECORD Cost all trainings	D5.2 RECORD CODE ONE ONLY Update training				
				In 1 year	2-5 years	6-10 years	No plan to repeat	Don't know
				1	2	3	4	-999

Section E: Financial resources

Ask All

E1.1	What is the amount of **CAP direct payments that** you received in 2012? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER	RECORD TOTAL AMOUNT			
E1.2	Did you receive any **Rural Development Payment** in the period 2008-2012?	YES Code 1	NO Code 2	Dk/Na -999	Refuse to answer -998

If yes in E1.2

E1.3	For each **Rural Development Payment** you have received, what was the amount? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER					
E1.4	In which year did you receive each of the Rural Development Payments? POSSIBILITY TO HAVE SEVERAL YEARS NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER					
		E1.3 Amount of the payment (Local currency) RECORD NUMBER	E1.4 Campaign of the payment (Local currency) MARK CAMPAIGN			
			2008/09	2009/10	2010/11	2011/12
	Modernisation of agricultural holdings (Rural Development measure 121)		1	2	3	4
	Setting up of young farmers (Rural Development measure 112)		1	2	3	4
	Vocational training, information actions, including diffusion of scientific knowledge and innovative practices for persons engaged in the agricultural, food and forestry sectors (Rural Development measure 111)		1	2	3	4
	Adding value to agricultural and forestry products (Rural Development measure 123)		1	2	3	4
	Improving and developing infrastructure related to the development and adaptation of agriculture and forestry (Rural Development measure 125)		1	2	3	4
	Agri environment payments (Rural Development measure 214)		1	2	3	4
	Natural handicap payments (Rural Development measure 211 and 212)		1	2	3	4
	Improving the quality of life in rural areas and encouraging diversification of the rural economy (Rural Development axis 3)		1	2	3	4
	Local development strategies / Leader Community Initiatives (Rural Development axis 4)		1	2	3	4
	Other (specify)		1	2	3	4

Ask All

E2.1	Have you applied for an investment subsidy in the past 4 campaigns (2008-2012)? DO NOT READ OUT. CODE ONE ONLY	
	Yes	1
	No	2
	Dk/Na	-999
	Refuse to answer	-998

E2.2	How many investment subsidies have you applied for in the past 4 campaigns (2008-2012)? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER	NOTE NUMBER

Ask if code 1 at E2.1

E.3.1	In which year/ years have you applied for this investment support? PROBE IF FARMER APPLIED MORE THAN ONCE AND RECORD ALL YEARS NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
E.3.2	What was the amount for which you applied that year? RECORD THE AMOUNT NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
E.3.3	Do you know which program is funding this investment support? RECORD THE SOURCE OF FUNDING FOR EACH YEAR RECORDED
E.3.4	For what type of investment did you plan to use the subsidy? RECORD THE TYPE OF INVESTMENT FOR EACH YEAR RECORDED NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
E.3.5	Has your application been rejected or accepted? READ OUT. CODE ONE ONLY.
E.3.6	Overall how satisfied are you with the investment support scheme? Please give your answer on the scale from 1 to 10 where: 10 Extremely satisfied 9 Quite satisfied 8 Satisfied 7 Somewhat satisfied 6 Few satisfied 5 Rather satisfied 4 Somewhat dissatisfied 3 Dissatisfied 2 Quite dissatisfied 1 Extremely dissatisfied

	E3.1 Year of application RECORD	E3.2 Amount RECOR	E3.3 Source of funding CODE ONE FOR EACH APPLICATION		E3.4 Type of investment CODE ONE FOR EACH APPLICATION		E3.5.1 Applied but rejected	E3.5.2 Applied anda acepted	E3.5.3 Applied and no answer	E3.6 Satisfaction RECORD SCORE
Application investment support 1			Support for setting up of young farmers (measure 112 CAP Rural Development)	1	Land	1				
			Support for adding value to agricultural and forestry products (measure 123 CAP Rural Development)	2	Building	2	Machinery/ equipment			

			Support for investment related to the diversification into non-agricultural activities (measure 311 CAP Rural Development)		4		production quota	4		
			Other (specify)		-997		Training	5		
			I don't know the origin of the fund							
	-999									
Application investment support 2										

Ask All

E4.1	Have you taken out any credits/loans over the past 4 campaigns (2008-2012)? DO NOT READ OUT. CODE ONE ONLY.	CODE ONE ONLY
	Yes	1
	No	2
	Dk/Na	-999
	Refuse to answer	-998

E4.2	How many credits have you taken out in the past 4 campaigns (2008-2012)? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER	NOTE NUMBER

Ask if code 1 at E4.1

E5	For each loan that you have taken over the past 4 campaigns (2008-2012)could you please tell me: INTERVIEWER ASK ALL BELOW QUESTIONS FOR EACH CREDIT When the credit period started? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER When the credit period finished/ or will be finished? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER What was the total amount of the credit? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER How did you/ do you use the money from this credit? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER					
		E5.1 Year beginning RECORD	E5.2 Year end RECORD	E5.3 Amount RECORD	E5.4 Use of money CODE ALL THAT APPLY	
	Credit 1				To buy machinery	1
					To buy land investments	2
					To buy crops and/or animals	3
					To buy Agricultural inputs (seeds, agrochemicals fertilizers)	4
					To buy buildings	5
					To renovate buildings	6
					To cover general farm expenditures (fuel, electricity)	7
					Non-farming purposes	8
					Others	-997

	Credit 2				To buy machinery	1
					To buy land investments	2
					To buy crops and/or animals	3
					To buy Agricultural inputs (seeds, agrochemicals fertilizers)	4
					To buy buildings	5
					To renovate buildings	6
					To cover general farm expenditures (fuel, electricity)	7
					Non-farming purposes	8
					Others	-997
	Credit 3				To buy machinery	1
					To buy land investments	2
					To buy crops and/or animals	3
					To buy Agricultural inputs (seeds, agrochemicals fertilizers)	4
					To buy buildings	5
					To renovate buildings	6
					To cover general farm expenditures (fuel, electricity)	7
					Non-farming purposes	8
					Others	-997
	Credit 4				To buy machinery	1
					To buy land investments	2
					To buy crops and/or animals	3
					To buy Agricultural inputs (seeds, agrochemicals fertilizers)	4
					To buy buildings	5
					To renovate buildings	6
					To cover general farm expenditures (fuel, electricity)	7
					Non-farming purposes	8
					Others	-997

Ask All

E6	What limitations, if any, do you see in accessing credit? READ OUT. RANK IN ORDER OF IMPORTANCE 1 Extremely important 4 Less important If E6.6 = 96, E6.1 till E6.6 =0	RANK
E6.1	High interest rate	
E6.2	Insufficient collateral	
E6.3	Insufficient income	
E6.4	Unsecured future/ do not want to take a risk	
E6.5	Other (specify)	97
E6.6	Do not see any limitations	96

Ask All

E7	What percentage of your farming sales do you/your business keep after the following is taken out: - variable costs - labour costs - depreciation for fixed assets and fixed costs - credit reimbursement - taxes? (In other words: What % is left over for you IN THE FOLLOWING 3 CASES (average, best, worse)?) CAP PAYMENTS AND OFF-FARM INCOMES ARE EXCLUDED (ONLY SALES) RECORD % DON'T KNOW -999, REFUSE TO ANSWER -998 PLEASE READ OUT AND ANSWER THE 3 CASES	RECORD
E7.1	Average % over the past 4 campaigns (2008-2012)	
E7.2	% in the best year over the past 4 campaigns (2008-2012)	
E7.3	% in the worse year over the past 4 campaigns (2008-2012)	

Section F: Prospects of your farm (2014-2020)

Ask All

F1	For the period 2014-2020, how do you intend to modify your farming activities? From 1 to 10 with 10 It will increase a lot 9 It will increase consistently 8 It will increase 7 It will somewhat increase 6 I will increase a bit 5 Will remain stable 4 It will decrease a bit 3 It will decrease 2 It will decrease consistently 1 It will decrease a lot READ OUT. CODE ONE ONLY FOR EACH CATEGORY.	
		score
	Total UAA	
	Number of different type of crops/perennials cultivated	
	Number of animals on the farm	
	Diversification of the farm activities (rural tourism, energy production, equipment rental etc.)	
	Diversification of the activities of the farm manager off-farm (other job not on his own farm)	

F2	Do you intend to invest in your farm for the period 2014-2020? READ OUT. CODE ONE ONLY.	CODE ONE ONLY
	I have no investments planned for the period 2014-2020	2
	I have the intention to invest in the period 2014-2020	1

Ask if code 2 at F2

F3	Why do you not intend to invest on your farm in the period 2014-2020? DO NOT READ OUT. CODE ALL THAT APPLY.	CODE ALL THAT APPLY
	I don't need new assets	1
	I don't have the financial resources	2
	The expected returns from investment are too low in the actual context	3
	The expected returns from investment are too uncertain in the actual context	4
	I will stop farming soon and don't have a successor	5
	Other (specify)	97
	Don't know	-999

Ask if code 1 at F2

F4	Do you plan any of the following investments for the period 2014-2020? READ OUT. CODE ALL THAT APPLY.	CODE ALL THAT APPLY
	Investments in land area	1
	Investments in buildings	2
	Investments in machinery and farming equipment	3
	Investments in quota and production rights	4
	Investments in trainings	5

LAND INVESTMENTS – ASK if F4 includes 1

<table>
<tr><td>F5</td><td colspan="8">How many land investments, if any, are you planning for the period of 2014-2020?
FOR EACH LAND INVESTMENT MENTIONED ASK THE FOLLWOING QUESTIONS:

What is the area (ha) of the land investment that you are planning to buy? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
Which year are you planning to make this land investment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
What is the expected cost of buying this land (cost per ha)? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
How are you planning to finance this land investment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER</td></tr>
<tr><td></td><td>Number of investments</td><td>F5.1
Land area (ha)
RECORD</td><td>F5.2
Expected Purchase year
RECORD</td><td>F5.3
cost per ha
RECORD</td><td colspan="4">F5.4
Way of financing
CODE ALL THAT APPLY
If farmer answer Own revenues we'll need to clarify if they are Farm revenues (code 11) or Of farm revenues (code 12)</td></tr>
<tr><td rowspan="5"></td><td rowspan="5">Investment 1</td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="2">Own revenues</td><td rowspan="2">1</td><td>Farm revenues (including CAP payments)</td><td>11</td></tr>
<tr><td>Off-farm revenues</td><td>12</td></tr>
<tr><td>Bank loan</td><td>2</td><td colspan="2" rowspan="3"></td></tr>
<tr><td>Investment subsidy</td><td>3</td></tr>
<tr><td>Other</td><td>4</td></tr>
<tr><td rowspan="5"></td><td rowspan="5">Investment 2</td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="2">Own revenues</td><td rowspan="2">1</td><td>Farm revenues (including CAP payments)</td><td>11</td></tr>
<tr><td>Off-farm revenues</td><td>12</td></tr>
<tr><td>Bank loan</td><td>2</td><td colspan="2" rowspan="3"></td></tr>
<tr><td>Investment subsidy</td><td>3</td></tr>
<tr><td>Other</td><td>4</td></tr>
</table>

BUILDING INVESTMENTS – ASK if F4 includes 2

F6	How many building investments, if any, are you planning for the period of 2014-2020? FOR EACH BUILDING INVESTMENT MENTIONED ASK THE FOLLWOING QUESTIONS: What is type of the building investment that you are planning to make? Which year are you planning to make this building investment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER What is the expected cost of this building? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER How are you planning to finance this building investment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER How each of your building investments is going to impact the farming business?

		F6.1 Type of the building investment CODE ONE ONLY		F6.2 Purchase year RECORD	F6.3 cost RECORD	F6.4 Way of financing CODE ALL THAT APPLY If farmer answer Own revenues we'll need to clarify if they are Farm revenues (code 11) or Of farm revenues (code 12)				F6.5 CODE ALL THAT APPLY	
	Investment 1	Building machinery buildings	1			Own revenues	1	Farm revenues (including CAP payments)	11	To increase yields	1
		Restructuring machinery buildings	2							To increase the quality of my production	2
		Building animal buildings	3					Off-farm revenues	12	To reduce costs	3
		Restructuring animal buildings	4			Bank loan	2			To reduce the variability of farm income	4
		Building crop or fruit storage	5							To improve environmental quality	5
		Restructuring crop or fruit storage	6							To improve animal welfare	6
		Building grain dryer	7			Investment subsidy	3			To improve the working conditions on the farm	7
		Restructuring grain dryer	8							To diversify the activities of the farm (e.g. rural tourism, energy production, equipment rental)	8
		Building new house	9							Others	-997
		Restructuring new house	10			Other	4				
		Other	97								

MACHINERY AND EQUIPMENT INVESTMENTS – ASK if F4 includes 3

F7	How many machinery and/or equipment investments, if any, are you planning for the period of 2014-2020? FOR EACH MACHINERY/EQUIPMENT INVESTMENT MENTIONED ASK THE FOLLWOING QUESTIONS: What is the type of the machinery/equipment investments are you planning to make? Which year are you planning to make this machinery/equipment investment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER What is the expected cost of this machinery/equipment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER How are you planning to finance this machinery/equipment investment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER How each of your machinery/equipment investments is going to impact the farming business?

		F7.1 Type of the machinery/ equipment investment CODE ONE ONLY		F7.2 Purchase year RECORD	F7.3 cost RECORD	F7.4 Way of financing CODE ALL THAT APPLY If farmer answer Own revenues we'll need to clarify if they are Farm revenues (code 11) or Of farm revenues (code 12)				F7.5 CODE ALL THAT APPLY.	
		Tractor	1			Own revenues	1	Farm revenues (including CAP payments)	11	To increase yields	1
		Drilling equipment	2					Off-farm revenues	12	To increase the quality of my production	2
		Sprayer	3			Bank loan	2			To reduce costs	3
		Forage harvester	4			Investment subsidy	3			To reduce the variability of farm income	4
		Combine harvester	5			Other	4			To improve environmental quality	5
		Trailers/ transportation	6							To improve animal welfare	6
		Balers	7							To improve the working conditions on the farm	7
		Other	97							To diversify the activities of the farm (e.g. rural tourism, energy production, equipment rental)	8
										To replace an old equipment	9
										Others	-997

QUOTA AND PRODUCTION RIGHTS INVESTMENTS – ASK if F4 includes 4

F8	How many quota and production rights investments, if any, are you planning for the period of 2014-2020? FOR EACH QUOTA AND PRODUCTION RIGHT INVESTMENT MENTIONED ASK THE FOLLWOING QUESTIONS: What type of quota and production rights are you planning to make? Which year are you planning to make this quota or production rights investment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER What is the expected cost of this quota or production rights? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER How are you planning to finance this quota or production rights investment? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER How each of your quota and production rights investments is going to impact the farming business?

		F8.1 Type of the quota and production rights investment RECORD ANSWER	F8.2 Purchase year RECORD	F8.3 cost RECORD	F8.4 Way of financing CODE ALL THAT APPLY If farmer answer Own revenues we'll need to clarify if they are Farm revenues (code 11) or Of farm revenues (code 12)				F8.5 CODE ALL THAT APPLY.	
	Investment 1	RECORD ANSWER			Own revenues	1	Farm revenues (including CAP payments)	11	To increase yields	1
							Off-farm revenues	12	To increase the quality of my production	2
					Bank loan	2			To reduce costs	3
									To reduce the variability of farm income	4
					Investment subsidy	3			To improve environmental quality	5
									To improve animal welfare	6
					Other	4			To improve the working conditions on the farm	7
									To diversify the activities of the farm (e.g. rural tourism, energy production, equipment rental)	8
									Others	-997

TRAINING INVESTMENTS – ASK if F4 includes 5

F9 — How many training investments, if any, are you planning for the period of 2014-2020?
FOR EACH TRAINING INVESTMENT MENTIONED ASK THE FOLLWOING QUESTIONS:

What type of training are you planning to attend?
Which year are you planning to attend this training? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
What is the expected cost of this training? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
How are you planning to finance this training? NOTE -999 IN CASE DK/NA AND -998 IF REFUSED TO ANSWER
How each of your training investments is going to impact the farming business?

		F9.1 Type of the training investment RECORD ANSWER	F9.2 Investment year RECORD	F9.3 cost RECORD	F9.4 Way of financing CODE ALL THAT APPLY If farmer answer Own revenues we'll need to clarify if they are Farm revenues (code 11) or Of farm revenues (code 12)				F9.5 CODE ALL THAT APPLY.	
	Investment 1	RECORD ANSWER			Own revenues	1	Farm revenues (including CAP payments)	11	To increase yields	1
							Off-farm revenues	12	To increase the quality of my production	2
					Bank loan	2			To reduce costs	3
									To reduce the variability of farm income	4
					Investment subsidy	3			To improve environmental quality	5
									To improve animal welfare	6
					Other	4			To improve the working conditions on the farm	7
									To diversify the activities of the farm (e.g. rural tourism, energy production, equipment rental)	8
									Others	-997

F10	Do not ask if 2 in F2: How the following changes in the CAP may impact your investment intentions that we have just discussed? READ OUT EACH CONDITIONS AND FOR EACH TYPE OF INVESTEMENTS THE FARMER PLANNED TO REALIZED RECORD ONE ANSWER USING CODE 1-4: Under this condition, I will realize for sure this investment Under this condition, it is likely that I will realize this investment Under this condition, it is likely that I will not realize this investment Under this condition, I will not realize this investment					
	Hypothetic condition	Investment in land	Investment in buildings	Investment in machinery/faming equipment	Investment in quota and production rights	Investment in trainings
F10.1	The direct payment I will receive in the period 2014-2020 is 50% higher compared to the payments I received in the period 2007-2013					
F10.2	The direct payment I will receive in the period 2014-2020 is the same compared to the payments I received in the period 2007-2013					
F10.3	The direct payment I will receive in the period 2014-2020 is 50% lower compared to the payments I received in the period 2007-2013					
F10.4	There will be 50% more investment subsidies available in your region from 2014 onwards.					
F10.5	The investment subsidies available in your region will be stable from 2014 onwards compare to the period 2007-2013.					
F10.6	There will be 50% less investment subsidies available in your region from 2014 onwards.					

THANK AND CLOSE

Questions ONLY for the INTERVIEWER

G1	How would you assess the farmer's general understanding of the questionnaire? CODE ONE ONLY.	CODE ONE ONLY
	Very good	1
	Somewhat good	2
	Not very good	3
	Not good at all	4
	Don't know	-999

G2	Which question/ questions was/were particularly difficult to understand or to answer? INTERVIEWER PLEASE EITHER INSERT THE NUMBER OF THE QUESTION OR EXPLAIN WHAT TOPIC WAS PARTICULARY DIFFICULT

Annex 2: Population data

Table 9: Population data. Main indicators used to select the regions sampled (CZ, DE, ES)

	Arable crops				permanent crop				Livestock				Mixed				
	Holdings (count)	UAA (ha)	Standard output (euro)	Labour force (count)	Holdings (count)	UAA (ha)	Standard output (euro)	Labour force (count)	Holdings (count)	LSU (count)	Standard output (euro)	Labour force (count)	Holdings (count)	UAA (ha)	LSU (count)	Standard output (euro)	Labour force (count)
Czech Republic	7.230	1 1431 60	985 498 530	24 250	2 650	34 420	156 918 320	5 800	7 920	510 630	637 802 880	24 590	4 420	1 499 750	789 230	1 696 804 240	
Praha	40	8 820	7 741 020	180	-	-	-	-	10	100	64 650	10	-	-	-	-	-
Strední Cechy	1 540	280 400	250 308 880	5 410	140	5 090	15 788 330	560	640	22 020	30 276 760	1 430	650	231 120	110 540	259 566 340	6 240
Jihozápad	1 040	133 480	88 219 310	2 410	100	1 300	5 885 810	210	2 100	168 510	204 469 780	6 520	1 060	356 730	182 800	362 082 560	9 980
Severozápad	710	149 740	129 191 510	3 000	90	2 370	9 085 080	400	710	40 200	37 809 890	1 840	160	53 240	20 460	44 135 200	1 350
Severovýchod	970	136 920	117 561 370	3 070	180	3 140	9 373 570	620	1 860	90 320	125 798 080	5 870	790	252 290	133 220	290 898 670	8 360
Jihovýchod	1 740	239 500	231 054 720	5 790	1 910	19 650	103 694 780	3 540	730	47 490	77 071 880	2 710	1 090	375 520	221 130	472 002 280	12 780
Strední Morava	700	120 130	103 324 880	2 760	180	1 700	8 335 830	350	1 180	45 260	57 502 360	3 150	400	163 230	82 560	192 116 530	5 780
Moravskoslezsko	500	70 780	56 062 240	1 530	30	850	3 501 540	90	690	30 910	37 829 260	1 990	270	60 050	30 800	65 956 710	2 090
Germany	76 590	5 327 700	7 986 431 660	114 070	24 500	244 020	2 429 566 440	51 610	131 320	8 148 840	14 002 111 980	219 150	40 100	3 722 030	3 654 000	7 341 491 750	
Baden-Württemberg	10 220	355 500	632 285 460	13 260	9 390	58 850	504 682 030	13 540	16 230	699 080	1 135 640 020	25 090	5 580	270 670	260 660	515 297 640	8 810
Bayern	26 700	770 380	1 241 114 820	24 400	2 410	17 080	195 703 680	4 190	52 570	2 380 300	4 131 399 660	86 780	11 100	469 550	503 750	984 810 760	15 880
Berlin	10	220	-	10	-	-	-	-	20	350	333 190	30	-	-	-	-	-
Brandenburg	1 730	418 880	397 434 340	5 320	160	4 730	37 038 700	720	2 250	281 570	548 714 490	7 300	1 030	439 900	219 130	520 029 910	6 430
Bremen	10	260	325 130	10	-	-	-	-	140	8 630	14 702 320	230	-	-	-	-	-
Hamburg	80	2 630	7 949 440	230	150	1 830	21 464 430	440	130	4 850	6 496 100	220	30	3 000	1 840	4 335 280	60
Hessen	5 260	232 780	359 511 980	6 510	760	7 110	81 279 510	1 920	7 030	305 360	510 556 490	9 320	3 860	193 360	157 250	307 754 120	5 170
Mecklenburg-Vorpo...	1 940	633 160	653 386 600	5 740	70	4 720	31 005 290	260	1 730	267 250	498 717 690	5 050	700	405 270	202 430	574 314 620	5 220
Niedersachsen	10 310	806 460	1 577 039 890	19 890	890	15 420	194 584 720	3 650	17 860	1 679 080	2 828 150 510	28 640	6 460	466 140	907 130	1 520 456 820	11 320
Nordrhein-Westfalen	8 180	371 030	859 880 830	13 980	640	13 020	210 623 630	2 400	13 640	859 600	1 428 960 240	19 170	5 980	288 500	590 850	938 647 340	9 230
Rheinland-Pfalz	4 160	219 670	404 971 620	6 440	9 380	104 720	978 137 520	21 100	5 060	251 010	409 359 320	6 370	1 410	103 700	66 550	137 386 110	2 020
Saarland	270	13 350	11 478 000	250	40	250	2 031 630	60	720	35 760	60 696 670	1 010	200	15 270	7 000	15 014 940	290
Sachsen	1 840	295 480	351 745 910	3 730	160	6 120	62 957 950	1 440	2 700	247 310	541 904 790	8 340	1 080	318 890	186 190	524 510 580	6 980
Sachsen-Anhalt	2 000	652 550	745 548 110	5 970	160	3 670	43 961 280	810	1 050	146 010	306 653 500	3 200	700	308 600	176 600	473 370 020	4 870
Schleswig-Holstein	2 820	262 700	433 757 470	4 990	180	3 370	30 352 850	400	8 590	822 900	1 289 287 820	13 770	1 330	143 370	190 300	331 027 600	2 640
Thüringen	1 080	291 130	308 127 580	3 320	50	2 680	29 453 610	550	1 630	155 660	284 701 560	4 600	630	294 610	183 270	493 093 880	6 450
Spain	249 470	11 215 500	5 908 355 660	174 580	495 720	4 376 160	8 777 810 930	377 680	136 270	5 622 010	6 808 015 200	164 000	45 750	1 842 920	1 139 730	1 597 649 530	
Galicia	20 160	105 440	113 587 580	14 050	6 850	18 700	76 764 140	6 510	31 680	757 530	1 264 320 670	42 180	18 490	69 110	79 810	127 068 360	19 710
Principado de Ast...	4 890	135 760	20 204 360	1 590	730	2 500	5 792 590	490	16 270	316 930	398 638 380	17 060	1 700	7 460	6 100	10 177 270	1 550
Cantabria	1 850	89 810	6 066 960	540	90	370	1 196 930	80	7 960	245 000	285 315 090	8 490	280	1 580	1 120	1 666 070	210
País Vasco	2 460	55 090	49 367 230	1 510	2 880	21 180	46 677 730	2 200	8 090	136 490	152 406 560	8 130	2 060	13 910	10 220	15 275 370	1 990
Comunidad Foral d...	8 680	370 710	256 768 220	4 690	3 000	33 650	83 221 200	2 500	2 950	141 610	176 360 160	3 330	330	23 350	13 590	24 794 230	380
La Rioja	2 220	118 840	67 361 560	1 670	6 920	70 170	194 302 330	6 270	610	47 400	43 912 180	680	70	2 010	1 600	3 001 280	60
Aragón	23 530	1 481 360	509 109 830	13 570	17 890	208 900	397 958 960	16 270	5 460	359 630	464 453 360	6 430	1 310	130 380	63 950	112 832 680	1 680
Comunidad de Madrid	2 780	184 850	65 833 460	2 100	3 350	26 330	16 828 680	1 850	1 570	77 710	72 840 770	1 810	100	9 160	2 070	4 470 770	170
Castilla y León	58 950	3 437 000	1 477 333 400	32 460	8 750	80 530	165 156 630	6 480	19 270	1 089 880	1 182 935 860	22 160	4 820	415 500	200 830	311 750 770	5 400
Castilla-la Mancha	41 270	2 517 860	1 000 928 790	28 900	68 080	806 680	636 290 690	42 420	6 720	473 430	517 222 890	9 390	1 720	229 740	78 630	124 228 260	2 850
Extremadura	14 010	557 450	418 917 590	14 870	31 600	310 740	480 264 900	21 720	11 780	693 030	609 401 190	14 430	4 720	447 890	268 500	294 951 240	6 310
Cataluña	16 460	445 100	228 232 810	9 320	31 150	287 770	789 891 800	33 120	5 760	427 860	635 362 760	7 450	1 570	51 660	110 800	150 692 320	2 070
Comunidad Valenciana	7 630	96 820	138 489 970	5 170	106 610	451 940	1 415 086 870	56 660	1 590	80 710	105 351 070	2 050	750	15 570	7 410	22 016 210	730
Illes Balears	2 760	42 760	58 736 090	2 230	3 430	23 050	28 917 820	2 330	1 700	42 280	88 839 700	1 970	1 980	44 900	21 690	38 477 530	2 020
Andalucía	36 350	1 483 270	1 308 161 160	34 460	171 910	1 765 470	3 152 280 170	140 750	11 760	605 260	646 996 040	14 600	4 780	361 760	239 730	301 290 760	8 060
Región de Murcia	2 820	79 940	139 589 860	4 200	24 760	251 290	1 053 343 000	27 000	1 360	88 390	104 593 240	1 810	470	16 200	26 870	42 090 470	610
Canarias (ES)	2 660	13 400	49 615 240	3 280	7 710	16 780	233 575 460	10 990	1 720	35 990	55 145 040	1 950	610	2 700	6 440	12 422 890	790

Source: 2010 Farm Structure Survey. (Regions selected for interviews for each farm specialisation are highlighted in light cyan.)

Table 10: Population data. Main indicators used to select the regions sampled (FR, IT, PL)

	Arable crops				permanent crop				Livestock				Mixed				
	Holdings (count)	UAA (ha)	Standard output (euro)	Labour force (count)	Holdings (count)	UAA (ha)	Standard output (euro)	Labour force (count)	Holdings (count)	LSU (count)	Standard output (euro)	Labour force (count)	Holdings (count)	UAA (ha)	LSU (count)	Standard output (euro)	Labour force (count)
France	146 640	10 594 050	11 100 331 040	168 950	99 400	1 464 850	12 295 510 280	193 270	184 520	11 629 780	13 037 372 130	253 210	55 710	4 115 700	4 259 970	6 345 490 950	
Île de France	4 010	538 010	632 952 390	5 870	190	3 000	57 697 440	630	320	11 650	16 180 640	640	260	16 380	10 420	25 657 970	500
Champagne-Ardenne	7 820	1 016 230	1 221 663 710	10 310	12 340	67 720	2 501 145 380	20 710	2 480	249 640	268 289 190	3 810	1 640	223 700	155 480	274 901 970	2 800
Picardie	8 010	979 330	1 356 178 030	12 180	950	8 060	211 281 760	2 040	2 640	195 590	268 632 010	3 570	1 960	200 990	171 200	348 826 370	3 440
Haute-Normandie	4 010	384 610	494 104 480	4 780	260	2 520	22 945 080	590	4 840	265 780	320 750 780	5 120	2 050	197 030	180 760	309 117 900	3 440
Centre (FR)	14 470	1 633 690	1 598 783 770	17 150	2 370	47 380	413 759 020	6 310	4 450	286 390	331 374 740	5 900	2 780	298 020	214 650	352 696 780	4 300
Basse-Normandie	3 400	199 230	196 932 290	3 400	510	7 100	72 370 220	1 030	17 180	1 085 540	1 238 198 790	21 340	2 200	179 050	223 590	292 299 410	3 350
Bourgogne	5 110	672 280	546 888 630	6 330	4 120	59 450	1 109 410 610	11 790	8 080	696 060	514 444 360	10 850	2 420	322 040	222 840	304 448 030	3 920
Nord - Pas-de-Calais	6 140	403 740	710 436 700	9 390	260	2 300	43 680 710	670	3 730	305 720	436 900 970	5 780	2 580	202 790	239 580	458 090 620	4 600
Lorraine	2 790	334 220	283 022 540	3 220	650	3 560	28 435 270	790	5 750	445 250	532 207 210	8 290	3 150	356 330	234 880	389 400 110	4 820
Alsace	4 460	172 290	261 921 240	4 540	4 140	27 770	499 303 500	6 480	1 780	81 460	115 200 740	2 600	1 330	54 820	50 230	101 790 830	1 720
Franche-Comté	1 250	94 780	68 957 220	1 050	810	4 040	71 659 230	940	6 230	402 400	507 732 690	9 570	1 250	109 260	69 460	120 270 890	1 620
Pays de la Loire	5 300	299 360	297 744 660	6 430	2 590	69 570	555 934 850	10 560	17 790	1 472 160	1 756 663 030	25 980	4 830	475 900	760 680	945 387 580	9 340
Bretagne	5 950	188 350	264 923 100	6 690	590	7 830	90 931 170	1 130	16 440	1 263 460	1 820 621 420	24 120	4 630	308 960	731 540	924 584 370	8 220
Poitou-Charentes	10 330	830 570	801 639 780	11 160	4 710	173 180	704 970 710	8 820	6 290	455 720	624 171 750	8 800	2 990	269 590	203 330	339 345 470	4 410
Aquitaine	12 310	565 420	498 168 780	11 830	11 080	243 800	1 924 287 810	31 830	11 010	463 880	539 070 930	14 010	5 320	210 060	196 170	319 120 410	6 780
Midi-Pyrénées	16 870	1 077 160	670 905 930	14 950	3 710	97 290	361 831 910	8 440	19 590	939 010	1 089 079 920	26 570	5 310	252 230	202 090	307 398 390	6 510
Limousin	1 050	26 050	14 155 090	620	510	7 960	42 733 840	1 100	11 300	768 100	541 594 480	14 950	1 420	59 050	62 510	65 993 600	1 640
Rhône-Alpes	8 060	357 570	303 454 570	8 630	9 250	119 470	708 900 130	17 140	15 860	716 840	826 417 420	22 110	4 360	178 300	150 490	237 935 210	5 350
Auvergne	3 620	178 940	132 225 610	2 950	360	3 640	24 447 800	470	17 210	1 100 640	922 907 840	24 450	2 000	136 770	133 300	141 865 960	2 590
Languedoc-Roussillon	2 810	206 290	177 133 680	3 740	21 850	308 820	1 212 870 150	28 040	4 280	189 030	177 526 090	6 200	850	22 490	11 220	28 359 250	1 020
Provence-Alpes-Côte...	4 060	351 200	231 329 090	6 010	12 330	158 120	1 152 883 100	21 170	2 990	128 870	119 570 490	4 390	930	22 840	9 110	27 934 060	1 040
Corse	180	15 380	6 632 920	250	860	17 790	110 391 730	1 600	1 360	59 090	47 415 330	1 590	260	13 570	6 140	8 454 100	280
Italy	489 210	5 708 200	11 288 735 760	240 340	900 810	2 725 920	14 269 397 800	4 17 500	130 370	4 717 000	9 476 006 570	170 980	39 820	628 280	639 190	1 858 435 990	
Piemonte	24 630	445 130	757 789 060	17 250	24 010	117 630	1 087 792 740	22 010	12 240	527 360	884 810 740	16 700	3 640	61 070	68 660	182 200 610	4 560
Valle d'Aosta/Val...	1 130	6 560	4 765 520	490	1 000	970	5 752 830	490	1 270	28 470	46 323 570	1 870	140	260	280	885 290	90
Liguria	3 060	8 930	21 141 840	2 700	12 750	14 890	150 685 270	8 860	1 440	13 090	29 443 680	1 570	540	1 580	1 470	5 181 630	530
Lombardia	24 000	483 100	1 051 992 970	16 640	8 040	37 460	364 738 680	7 430	15 330	1 029 540	2 172 923 860	25 050	2 800	52 610	133 070	332 351 980	3 850
Provincia Autonom...	1 860	108 420	33 393 430	1 020	8 870	26 270	296 794 420	11 590	8 880	110 980	210 466 060	15 260	490	3 120	4 130	13 571 490	720
Provincia Autonom...	1 600	87 810	29 097 060	860	12 630	24 250	326 536 660	10 060	1 690	38 240	72 724 290	2 360	320	2 060	3 170	11 104 420	410
Veneto	71 250	467 770	1 053 166 590	24 270	29 870	135 660	1 488 929 910	23 790	8 890	452 250	786 575 100	11 580	3 760	38 180	86 950	225 024 170	4 330
Friuli-Venezia Gi...	14 930	121 560	158 817 410	5 220	3 790	33 780	300 168 570	4 420	1 550	65 910	150 893 680	2 540	690	11 210	9 360	32 041 070	890
Emilia-Romagna	38 750	616 240	2 238 591 550	24 460	22 480	160 970	1 358 325 190	24 300	7 990	423 850	1 018 132 720	12 970	1 750	45 460	57 320	213 976 050	2 560
Toscana	18 390	319 390	490 795 500	12 340	43 120	249 040	1 103 027 340	26 930	3 780	93 970	222 187 210	4 680	2 500	48 830	25 280	90 393 910	2 850
Umbria	14 970	179 300	269 394 090	6 210	16 490	57 120	188 952 510	5 630	1 840	40 690	80 850 510	1 930	1 670	30 990	19 420	57 700 840	1 700
Marche	27 420	322 180	537 779 530	11 710	11 670	50 300	225 627 450	5 400	1 870	45 270	99 003 010	2 000	1 810	30 330	20 000	57 157 610	1 790
Lazio	24 110	274 090	595 024 360	12 530	58 640	127 560	673 958 620	22 940	9 320	271 740	594 699 880	9 940	2 900	28 420	22 460	75 607 310	2 450
Abruzzo	19 020	218 950	379 164 290	8 540	40 820	96 530	481 555 620	15 250	3 400	70 830	133 190 080	3 450	2 600	26 570	18 340	53 019 500	2 350
Molise	12 340	117 160	121 855 760	4 700	9 930	24 030	63 058 850	2 860	2 170	39 050	65 665 160	2 540	1 140	15 330	8 250	22 334 090	1 180
Campania	38 590	223 010	687 809 210	22 350	81 630	160 050	720 399 340	34 920	8 140	346 400	429 967 000	10 280	3 570	32 060	29 250	76 579 840	3 540
Puglia	45 970	563 340	1 117 383 810	27 240	215 190	551 710	1 740 338 180	80 750	3 570	142 740	243 136 110	5 150	1 300	37 730	30 530	82 947 650	1 840
Basilicata	22 540	285 060	297 365 720	8 810	21 800	66 720	196 011 290	7 700	3 830	88 870	141 803 830	4 130	1 340	31 380	12 730	36 498 820	1 340
Calabria	21 080	137 850	330 492 930	11 080	108 340	282 110	1 252 890 130	44 970	4 280	76 410	152 552 600	4 360	2 800	36 690	30 060	93 156 110	3 050
Sicilia	51 750	496 130	780 319 260	14 800	142 130	439 200	2 026 235 430	46 160	11 740	307 340	663 172 650	11 410	2 140	45 630	27 890	89 753 590	1 980
Sardegna	11 810	226 240	332 511 050	7 100	27 660	69 670	217 613 500	11 010	17 170	503 920	1 277 362 020	21 180	1 950	48 740	30 460	106 798 050	2 110
Poland	674 080	6 114 190	4 266 593 200	612 180	69 970	416 310	807 741 550	95 680	189 040	2 927 610	3 654 552 030	324 730	462 880	4 605 580	3 692 320	5 535 555 110	
Łódzkie	56 000	313 370	216 301 700	49 060	6 810	44 540	92 709 360	10 440	15 520	220 080	266 960 610	26 870	44 070	364 900	287 950	420 430 560	66 920
Mazowieckie	90 850	539 910	357 321 950	75 720	19 590	117 800	235 355 310	30 460	41 140	657 980	807 600 190	71 280	58 180	534 850	392 940	576 193 250	88 060
Malopolskie	62 560	224 710	199 259 240	57 640	5 390	17 860	38 818 250	6 930	24 560	104 070	129 697 050	39 020	48 940	186 330	151 710	251 824 050	74 560
Slaskie	27 020	150 590	99 776 750	20 650	940	3 040	10 736 210	900	6 710	52 690	59 832 850	9 370	18 280	132 680	107 730	159 278 530	26 220
Lubelskie	94 390	619 940	448 045 120	91 330	14 120	62 250	111 684 610	17 780	10 800	151 770	189 272 260	18 390	62 210	495 010	324 820	534 372 410	97 710
Podkarpackie	64 760	257 510	187 710 570	55 730	3 750	11 290	14 124 270	2 590	8 860	46 000	64 942 660	12 690	50 430	201 880	139 890	244 719 060	72 890
Swietokrzyskie	43 450	197 600	181 344 840	44 480	8 220	34 380	59 693 700	11 230	6 340	53 940	62 961 270	9 990	34 770	202 940	159 560	253 098 540	55 120
Podlaskie	32 730	240 140	117 446 160	21 960	660	5 920	9 446 300	650	28 370	633 800	762 692 360	54 400	19 900	242 080	154 770	224 896 010	30 350
Wielkopolskie	50 030	554 380	426 979 070	46 210	3 390	28 180	53 714 800	5 050	12 270	300 120	374 003 970	22 490	46 650	795 710	851 800	1 154 107 280	83 060
Zachodniopomorskie	18 290	613 450	359 473 070	18 530	1 390	31 900	46 904 040	1 450	2 080	35 860	50 547 000	3 580	5 970	158 290	94 310	158 652 750	10 570
Lubuskie	12 580	254 270	138 643 130	11 120	730	11 960	32 176 640	1 070	1 910	35 510	46 381 390	2 800	4 980	76 930	46 940	74 629 730	7 380
Dolnoslaskie	41 300	683 110	504 229 330	41 370	1 370	9 780	20 628 860	1 790	3 560	43 020	62 357 470	5 110	10 600	135 700	79 300	148 693 210	15 980
Opolskie	14 710	276 180	214 517 100	15 120	210	1 350	3 543 410	260	1 680	36 360	46 408 030	2 700	9 770	182 590	151 550	238 366 940	16 680
Kujawsko-Pomorskie	28 550	404 110	338 159 450	28 870	1 930	17 680	43 787 110	3 020	8 100	184 190	239 272 220	14 690	24 840	439 310	433 360	620 592 540	43 920
Warminsko-Mazurskie	19 280	426 360	237 722 880	16 640	580	9 570	15 887 050	670	13 030	293 380	390 869 790	23 610	8 660	215 880	135 540	210 522 480	14 970
Pomorskie	17 620	358 570	239 662 850	17 740	910	8 580	18 281 480	1 370	4 110	78 830	100 752 900	7 750	14 640	240 520	180 150	265 177 750	25 670

Source: 2010 Farm Structure Survey. (Regions selected for interviews for each farm specialisation are highlighted in light cyan.)

Annex 3: Investments in quotas

The survey also covers farmers' intentions to buy quotas in the context of an on-going discussion on quota abolition. The abolition of milk quotas was decided after a CAP health check in 2009. According to CAP post-2013 reform, the total abolition is planned for 2015 (EC 2013). The reform also foresees the end to the sugar quota regime on September 2017, confirming the indication of the 2005 sugar reform to put an end date for the quota regime while allowing for additional time for the sector to adjust. On wine production, the accord respects the decision of the 2007 wine reform to end the system of wine planting rights for 2018 at the latest, with the introduction of a system of authorisations for new vine planting from 2016 and with growth limited to 1% per year. In this context, we observe that some of the farmers have invested in quotas in the period 2008-2012 and are still willing to do so in 2014-2020. One reason is that buying extra milk quotas can still be more profitable than paying the extra levy, even in the short term. Moreover, for sugar beet quotas, we know that sugar processors fix the contracts with producers according to the quotas in some countries.

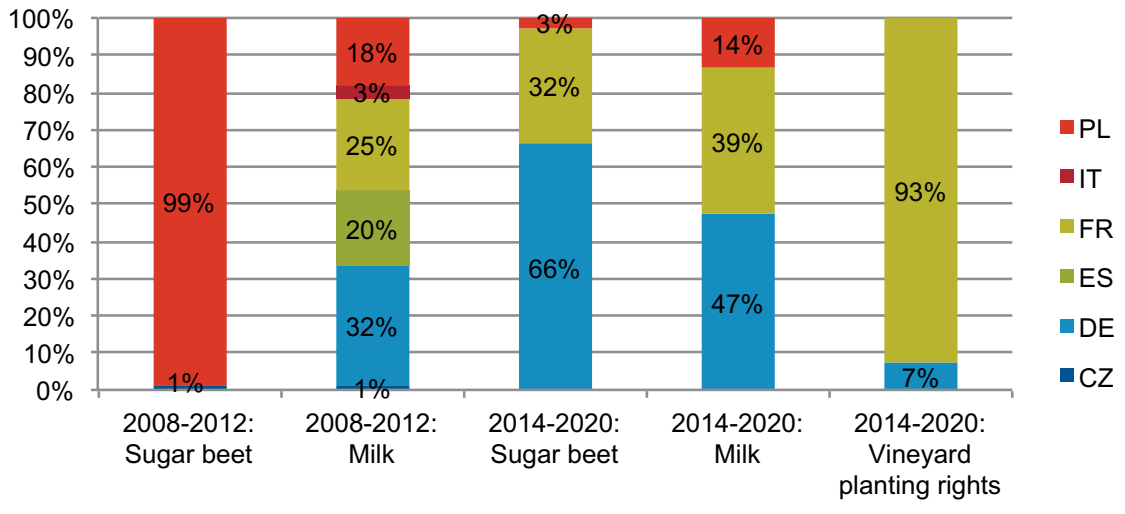
Investments in quotas in the period 2008-2012

6.5% of the farmers surveyed have invested in milk or sugar beet quotas in the period 2008-2012 9. 6% of the farms producing sugar beet have invested in sugar beet quotas in 2008-2012. These farms are to a large extent situated in Poland. 20% of the dairy farms have invested in milk quotas in 2008-2012. These farms are situated in all the countries under the study. No information was collected on investments in planting rights over the period 2008-2012.

Intentions to invest in quotas in the period 2014-2020

1.8% of the farmers surveyed intend to invest in quotas and production rights in the period 2014-2020. These investment intentions concern mainly milk quotas (57%), followed by sugar beet quotas (28%) and planting rights for vineyards (15%). Only three countries are concerned by these intentions to invest in quotas: France (mainly for vineyard planting rights and milk quotas), Germany (mainly for sugar beet and milk quotas), and Poland (only for milk and to a lower extent sugar beet) (Figure 41).

Figure 41: Farmer's recent investments and intention to invest in quotas in 2014-2020 by country and type of quotas



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